SAN RAFAEL ROCK QUARRY
AMENDED RECLAMATION PLAN
AND AMENDED SURFACE MINING AND
QUARRYING PERMIT

Combined Final Environmental Impact Report (FEIR)
SCH#s 2005102122 (Amended Reclamation Plan)
2007082097 (Amended Quarry Permit)

FEIR Volume II: Comments on the Draft EIR and Responses

Prepared for: Marin County Community Development Agency

January 2009
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Amended Reclamation Plan and  
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Combined Final Environmental Impact Report

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CHAPTER 7
Comments and Responses

7.1 Introduction to the Comments and Responses

After completion of a draft environmental impact report (EIR), the California Environmental Quality Act (CEQA) requires the Lead Agency to consult with and obtain comments from public agencies that have legal jurisdiction with respect to the proposed project, and to provide the general public with opportunities to comment on the Draft EIR. CEQA also requires the Lead Agency to respond to significant environmental issues raised in the review and consultation process. The Lead Agency for the San Rafael Rock Quarry Amended Reclamation Plan and Amended Surface Mining and Quarrying Permit Combined EIR is the Marin County Department of Public Works.

The San Rafael Rock Quarry Amended Reclamation Plan and Amended Surface Mining and Quarrying Permit Combined Draft EIR (SCH# 2005102122 -- Amended Reclamation Plan and SCH# 2007082097 -- Amended Quarry Permit) was released for public review and comment in February, 2008. Marin County circulated the Draft EIR for review by public agencies, interested parties, and organizations for a 60-day public comment period, which ended on April 14, 2008. During the comment period, the Board of Supervisors held a Public Hearing on March 25, 2008 to take public comment on the Draft EIR. The County received 49 comment letters in addition to oral testimony at the public hearing.

This chapter contains all comments received during the comment period, as well as responses to these comments. A list of those who commented on the DSEIR appears in Table 7.1-1. The list is divided into government agencies, organizations, and individuals.

Several issues were addressed by multiple commenters. “Master Responses,” which consolidate information on these subjects to ensure a more comprehensive response, are presented in Section 7.2. Section 7.3 contains copies of all comment letters received and responses to the comments. Each comment letter is assigned a number code, from 1 through 49, and each comment is numbered in the margin of the comment letter. Responses to the comments follow each letter, and responses are referenced using the same numeric system. For example the first comment from the first letter, from the National Marine Fisheries Service, is designated 1-1, as is the response to it. Testimony from the public hearing is assigned the number “50” and follows the comment letters.
### TABLE 7.1-1

**LIST OF COMMENTERS**

<table>
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<tr>
<th>Letter Designation</th>
<th>Letter Date</th>
<th>Date Rec'd</th>
<th>Agency or Organization</th>
<th>Commenter's First Name</th>
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### TABLE 7.1-1 (Continued)
**LIST OF COMMENTERS**

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7.2 Master Responses

This section contains twelve “Master Responses” which consolidate the responses to several comments that address major issues in the Environmental Impact Report (EIR). The twelve Master Response topics are as follows:

1. New Information
2. Errata
3. Baseline
4. Alternatives
5. Health Risk Assessment
6. Greenhouse Gas Emissions and Climate Change
7. Flooding the Quarry Bowl
8. Blast effects
9. Land Use Compatibility
10. Marshes
11. Noise Standards and Methods
12. Importance of the Resource

Several comments have prompted the County to revise the text of the Draft EIR. Revisions of the text of the Draft EIR are shown in this section as follows:

- Excerpts of the text of the Draft EIR are indented and italicized;
- Additions to the text of the Draft EIR are shown as underlined;
- Deletions of the text of the Draft EIR are shown as strikeout.

All changes to the text of the Draft EIR are also shown in Volume I of this document, which contains the complete text of the Draft EIR, as revised.

**Master Response 1: New Information**

This Master Response reviews new information that was not available at the time of the publication of the Draft EIR, or which has come to light since publication, and which modifies or affects the project descriptions, the environmental setting, or the impact analysis. This Master Response covers the following topics:

A. Applicant’s suggestion of a new mitigation measure to reduce criteria air pollutant emissions from reclamation grading;

B. Applicant’s addition to the ARP of an aeration or mixing system to reduce or avoid water quality problems in the flooded Main Quarry Bowl;

C. Correspondence regarding weekday times for maintenance activities;
D. Onsite Environmental Laboratories Ambient Air Quality Study;


A. Applicant’s Suggestion of a New Mitigation Measure to Reduce Criteria Air Pollutant Emissions from Reclamation Grading

This new information is presented in comments 19-5, 19-6, 19-25, 19-101, and 19-104 (see Section 7.3, Comments and Individual Responses). In these comments, the applicant states that the significant air quality impacts associated with phased reclamation grading (Impact R4.2-1 – increases in criteria pollutant emissions from reclamation Phases 1 through 3, and Impact R4.2-2 – increases in criteria pollutant emissions from reclamation Phase 4) can be avoided or reduced to less than significant by reducing the intensity of either reclamation grading activities, or mining activities during reclamation Phases 1 through 4, and by reducing the intensity of reclamation grading activities during the portion of reclamation Phase 4 that would occur after the cessation of mining. In this way, the emission of criteria air pollutants from blasting and from stationary and mobile equipment and vehicles used for mining operations and transportation, and from mobile equipment used for reclamation grading, can be limited such that the increase above baseline emissions levels (as shown in Table 4.2-5 in Section 4.2, Air Quality) would not exceed the Bay Area Air Quality Management District (BAAQMD) thresholds.

In response to comments received from the BAAQMD, (comment 2-3 in Section 7.3) a new mitigation measure has been added, which requires the Quarry to obtain off-site emission offset credits from the BAAQMD in sufficient quantity to reduce emissions from reclamation grading to levels below significance thresholds. This measure has been added as Mitigation Measure R4.2-1i (see response to comment 2-3 in Section 7.3). The new information provided by the applicant is reflected in a new mitigation measure (Mitigation Measure R4.2-1j), which is also provided in the response to comment 2-3 in Chapter 3, Project Description, and the text of the EIR has been revised to reflect that these mitigation measures (which will apply to all four phases of reclamation grading), in combination with other measures specified, will reduce both Impact R4.2-1 and Impact R4.2-2 to below significance.

Per CEQA Guidelines §15088.5(a)(3), the receipt of this new information does not require recirculation of the Draft EIR, because the applicant agrees to implement the new mitigation measures.

B. Aeration or Mixing of Water in the Flooded Main Quarry Bowl

In comments 19-8, 19-51, 19-118, and 19-121 (see Section 7.3), the applicant asserts that Impact R4.3-7 (poor water quality in the deep water within the flooded Main Quarry Bowl could result in impacts to special-status aquatic species) and Impact R4.5-6 (degraded water quality could occur in the deep water of the flooded Main Quarry Bowl) can be reduced to less than significant. Mitigation Measure 4.5-6 in the Draft EIR discussed the use of a deep water aeration or mixing system to reduce these impacts, but found that insufficient information was available to conclude that such a measure would be technically feasible and effective, given the extreme depth of the
floated Main Quarry Bowl. The applicant asserts that such technology is feasible, and provides expert opinion to support this assertion. This issue is further discussed in Master Response 7, below.

Per CEQA Guidelines §15088.5(a)(3), the receipt of this new information does not require recirculation of the Draft EIR, because the applicant agrees to implement the new mitigation measure discussed in Master Response 7.

C. No Restriction on Weekday Times for Maintenance Activities

In Comment 19-16, the applicant asserts that their proposal for an Amended Surface Mining and Quarrying Permit does not include restrictions on maintenance hours. In subsequent correspondence with SRRQ, however, the County has confirmed that the hours for maintenance activities shown in Table 3-9 in Chapter 3, Project Description (7:00 a.m. to 5:00 p.m. Monday through Friday, and up to 15 Saturdays per year, 7:00 a.m. to 5:00 p.m.) are correct.

Per CEQA Guidelines §15088.5(a)(1) and (2), the receipt of this new information does not require recirculation of the Draft EIR, because the new information does not result in a new or more severe significant impact.

D. Onsite Study

Several comments (23-18, 30-10, 30-27, 30-51, 35-3, 45-6, 45-12 in Section 7.3) note the existence of a County-commissioned study of ambient air quality in the vicinity of the Quarry, conducted in 2000 by Onsite Environmental Laboratories (Onsite, 2001), that was not reviewed or discussed in the Draft EIR. The EIR preparers did not review this report during preparation of the Draft EIR, but reviewed the Onsite report in its entirety in preparation of the Final EIR. As described in the responses to the comments listed above, the EIR preparers have concluded that the Onsite study does not alter the environmental setting or the impact analysis presented in the Draft EIR; therefore, per CEQA Guidelines §15088.5, this new information does not require recirculation of the Draft EIR.

E. Merrill Lynch Report

The Draft EIR relied partly on a 1984 Merrill Lynch Capital Markets report on Basalt Rock (the owner of the Quarry at that time) to establish baseline conditions for the environmental analysis. The EIR preparers only reviewed excerpts from the report during preparation of the Draft EIR. However, the entire report was provided as an attachment to comment letter 30 (Pt. San Pedro Road Coalition), and the report in its entirety was reviewed in preparation of this Final EIR. As stated in the response to comment 30-45, the EIR preparers found no new information contained in the full Merrill Lynch report that conflicts with or suggests the need to modify the baseline as presented in the Draft EIR, and therefore, the receipt of this new information does not trigger the requirement to recirculate the Draft EIR, per CEQA Guidelines §15088.5. Please refer to the response to comment 30-45 for more detail.
Master Response 2. Errata

The Draft EIR contained several errata. Several of these were detected immediately after the document was released to the public, and the County issued an errata sheet, which was mailed to all known recipients of the Draft EIR, and which was posted on the County’s web site. The errata sheet is reproduced below as Table MR2-1. The errata sheet references two figures that were printed incorrectly in Section 4.2, Air Quality of the Draft EIR: Figure 4.2-2, which was not the correct figure; and Figure 4.2-6, which contained an error in the title of the figure. The correct versions of these figures are included in Section 4.2 (in Volume 1) of this Final EIR.

### TABLE MR 2-1
ERRATA SHEET ISSUED IN FEBRUARY, 2008, IMMEDIATELY AFTER PUBLICATION OF THE DRAFT EIR

<table>
<thead>
<tr>
<th>Page</th>
<th>Paragraph</th>
<th>Line</th>
<th>Erroneous Text</th>
<th>Correct Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.2-8</td>
<td>First full paragraph</td>
<td>Last</td>
<td>Table 3.E-2</td>
<td>Table 4.2-2</td>
</tr>
<tr>
<td>4.2-19</td>
<td>Last</td>
<td>Last</td>
<td>each sample location.</td>
<td>each sample location (period removed; sentence continues on page 4.2-21)</td>
</tr>
<tr>
<td>4.2-20</td>
<td>n.a.</td>
<td>n.a.</td>
<td>Figure included as 4.2-2 is not the correct figure (figure erroneously included is an early draft of Figure 4.2-8)</td>
<td>See correct Figure 4.2-2 in Section 4.2, Air Quality, in Volume 1</td>
</tr>
<tr>
<td>4.2-30</td>
<td>Third full paragraph</td>
<td>First</td>
<td>Table 4.2-9</td>
<td>Table 4.2-10</td>
</tr>
<tr>
<td>4.2-37</td>
<td>First under “Mitigation Measures Identified in This Report”</td>
<td>First &amp; second</td>
<td>Mitigation Measure R4.2-1 through R4.2-3a</td>
<td>Mitigation Measures R4.2-1d, f, g, and h</td>
</tr>
<tr>
<td>4.2-42</td>
<td>Second to last</td>
<td>First &amp; second</td>
<td>The Greenhouse Gas Reduction Plan specified in Mitigation Measure R4.2-2b</td>
<td>The Greenhouse Gas Reduction Plan specified in Mitigation Measure R4.2-3c</td>
</tr>
<tr>
<td>4.2-42</td>
<td>Last</td>
<td>First &amp; second</td>
<td>See Draft Mitigation Monitoring Measures R4.2-2, P4.2-6 and P4.6-6</td>
<td>See Draft Mitigation Monitoring Measures R4.2-1, R4.2-3, P4.2-6, and P4.6-6</td>
</tr>
<tr>
<td>4.2-54</td>
<td>n.a</td>
<td>n.a</td>
<td>(Figure title) Incremental Cancer Risk</td>
<td>Incremental Chronic Risk (correct Figure 4.2-6 is in Section 4.2, Air Quality, in Volume 1)</td>
</tr>
<tr>
<td>4.2-59</td>
<td>First full paragraph</td>
<td>8</td>
<td>Even with mitigation, therefore</td>
<td>Even with mitigation, therefore (second comma removed)</td>
</tr>
</tbody>
</table>

Several additional, minor errors in the Draft EIR have been discovered since issuance of the errata sheet, including several which were pointed out in comment letters received, including those that appear in Table MR2-2. All known errata are corrected in the text of the Final EIR in Volume 1, and shown in underlined and struck-through text.
<table>
<thead>
<tr>
<th>Page</th>
<th>Paragraph</th>
<th>Line</th>
<th>Erroneous Text</th>
<th>Correct Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.2-35</td>
<td>Table 4.2-11</td>
<td>First</td>
<td>Value for CO is 1,090</td>
<td>Value for CO corrected to 1,095</td>
</tr>
<tr>
<td>4.2-35</td>
<td>Table 4.2-11</td>
<td>Total</td>
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<td>Value for CO corrected to 1,245</td>
</tr>
<tr>
<td>4.2-48</td>
<td>Second paragraph after heading: Fugitive Dust Emission Sources</td>
<td>6th</td>
<td>Value for fugitive dust from blasting stated as 0.09</td>
<td>Value corrected to 0.36; this value was misstated in the text, but the correct value was used in the Health Risk Assessment.</td>
</tr>
<tr>
<td>4.2-48 and 4.2-49; also in Appendix D, Attachment B, page 21</td>
<td>After heading: Exposure Assumptions</td>
<td>10-11</td>
<td>School children exposure assumptions were based on eight hours/day, five days/week, 180 days/year over 14 years. School teacher exposure assumptions were based on eight hours/day, five days/week, 180 days/year over 40 years.</td>
<td>School children exposure assumptions were based on ten hours/day, five days/week, 180 days/year over 9 years. School teacher exposure assumptions were based on ten hours/day, five days/week, 180 days/year over 40 years.</td>
</tr>
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<td>4.3-57</td>
<td>After heading: Mitigation Measures Proposed as Part of the Project</td>
<td>First</td>
<td>Mitigation Measure C4.3-18a: See Mitigation Measure C4.3-5a.</td>
<td>Mitigation Measure C4.3-18a: See Mitigation Measure R4.3-5a.</td>
</tr>
<tr>
<td>4.4-18</td>
<td>Second paragraph after heading: Mitigation Measures Identified in this Report</td>
<td>First</td>
<td>Mitigation Measure R4.5-1 in Section 4.5, Hydrology and Water Quality, also contains measures that would serve to further mitigate potential erosion effects.</td>
<td>Mitigation Measure R4.5-2b in Section 4.5, Hydrology and Water Quality, also contains measures that would serve to further mitigate potential erosion effects.</td>
</tr>
<tr>
<td>4.7-31</td>
<td>First paragraph after heading: Level of Significance with Mitigation</td>
<td>Last</td>
<td>The above measures will ensure that blasting at SRRQ will not cause structural damage to nearby residential buildings. These measures will also reduce to the extent practical the disturbing effects of blasting on the Quarry’s neighbors. It is likely, however, that such effects will continue. The level of continuing impact may be considered below the threshold of significance; the inevitable and ongoing disturbance of neighbors is another aspect of the incompatibility of the Quarry with surrounding land uses, as discussed in Impact 4.6-1 in Section 4.6, Land Use and Planning.</td>
<td>The above measures will ensure that blasting at SRRQ will not cause structural damage to nearby residential buildings. These measures will also reduce to the extent practical the disturbing effects of blasting on the Quarry’s neighbors. It is likely, however, that such effects will continue. The level of continuing impact may be considered below the threshold of significance; the inevitable and ongoing disturbance of neighbors is another aspect of the incompatibility of the Quarry with surrounding land uses, as discussed in Impact 4.6-7 in Section 4.6, Land Use and Planning.</td>
</tr>
<tr>
<td>Appendix D, attachment B, page 22</td>
<td>First paragraph under heading: Risk Characterization</td>
<td>Second to last</td>
<td>HARP was conducted using the 95th percentile breathing rate (derived OEHHA) method.</td>
<td>HARP was conducted using the 80th percentile breathing rate (derived OEHHA) method.</td>
</tr>
</tbody>
</table>
Master Response 3: Baseline

Several comments claim that the baseline used in the environmental analysis is flawed. These comments center around questions regarding activities, or intensity of activities, that occurred at the Quarry in 1982, at the time that the current Amended Reclamation Plan was approved, and, with adoption of the Peacock Gap Neighborhood Plan, the time at which the Quarry became a legal non-conforming use. In their comment letter, the applicant makes several statements contending that the baseline used in the environmental analysis understates the intensity of operations or the scope of allowed operations in 1982; therefore, they contend, the difference between baseline and project is overstated, and adverse impacts are also overstated (comments 19-15, 19-21, 19-23, 19-29, 19-31, 19-40, 19-85). Other commenters contend that the baseline used in the environmental analysis overstates the intensity or scope of activities that were occurring in 1982, particularly with regards to truck traffic, noise, and blast vibrations. Several of these state that key documents were not reviewed by the preparers of the EIR, and that crucial information on baseline conditions was therefore not considered. The thrust of these comments is that, since the baseline is understated, so is the difference between baseline and project; therefore, impacts are understated.

This Master Response reviews the baselines used for each of the two projects, and the reasoning and evidence that supports these. The conclusion is that the baselines were properly constructed, that they should not be changed, and that impacts are properly analyzed.

Baseline Used in the Draft EIR

Page 3-18 of the Draft EIR states,

Consistent with the CEQA statute, Guidelines, and case law, and with the decisions of the Marin County Superior Court..., the SRRQ projects that are the subject of this Draft EIR are defined as the scope of activities contemplated by the proposed amendments to the existing Surface Mining and Quarrying Permit and Amended Reclamation Plan, to the extent that they differ from or exceed existing permitted conditions. Existing permitted conditions include the explicit terms and conditions of the 1972 Surface Mining and Quarrying Permit and the 1982 Amended Reclamation Plan, as well as other permits that SRRQ currently holds. They also include, and are limited to, the scope of the permitted use at the time the zoning for the property changed in 1982, when quarrying became a legal, non-conforming use (Marin County Superior Court, 2004). The impacts of the proposed changes must be evaluated in relation to the existing environment at the time of the NOPs for the projects.

In summary, the impacts to be considered are those which could potentially occur due to the changes proposed in ARP04 and in the application for an Amended Surface Mining and Quarrying Permit, as described below, and as compared to existing permitted conditions. These impacts will be evaluated in relation to the existing environment at the time of the NOPs.

The Project Description (Chapter 3; sections 3.3, and 3.5) goes on to describe the activities that were taking place or planned to take place at the Quarry in 1982, and the extent or level of intensity of these activities. This includes both planned reclamation and mining operations. The primary documents used to construct the baselines include the plans for reclamation and post-reclamation use of the site, and the description of current site operations contained in the 1982 Amended
Reclamation Plan (ARP82), the Initial Study prepared pursuant to CEQA for ARP82 and the Planning Commission conditions of approval that were imposed upon the adoption of ARP82; and the 1972 Surface Mining and Quarrying Permit. Additional information was gleaned from excerpts from a 1984 Merrill Lynch Report on Basalt Rock (as stated in Master Response 1, the entire report was reviewed in preparation of this Final EIR), a 1982 noise study prepared for the Quarry (Illingworth et al., 1982), and the Peacock Gap Neighborhood Plan. In addition, the Statement of Decision in the Marin County Superior Court case (Point San Pedro Road Coalition et al v. San Rafael Rock Quarry, Inc.), which includes rulings on the scope of the use of the Quarry site in 1982, and the Orders in that case, which contain interim operating conditions which rely partly on that determination, were carefully reviewed and pertinent portions used in construction of the baseline.

Responses to Applicant’s Comments on Baseline

The applicant takes issue with several aspects of the baseline for the AQP and ARP. In comments 19-21, 19-23, and 19-85, the applicant states that nighttime activities were taking place in 1982, and should be considered part of the baseline for consideration of visual and noise impacts. The response to comment 19-21 is repeated here:

As noted in the discussion of baseline for the AQP (page 3-65 through 3-70 in Chapter 3, Project Description), ARP82 states that “noise-generating operations are generally limited to daylight hours on weekdays, except in times of emergency.” This is interpreted to be a reflection both of physical conditions at that time (around 1982), as well as an intent by the Quarry at that time to maintain this self-imposed limitation on hours of operation. This is further interpreted to mean that noise-generating activities may occasionally occur at night.

In comment 19-85, the applicant contends that the Draft EIR overstates the differences between ARP82 and ARP04. In Chapter 3, Project Description, the Draft EIR carefully compares the specific terms of ARP04 with ARP82, and describes the differences between the two plans. The applicant’s statement that ARP04’s plan for phased reclamation is not substantially different from ARP82’s plan for reclamation following cessation of mining has no basis, particularly in light of the scale of phased reclamation grading activities that would take place prior to cessation of mining, as described in Chapter 3, Project Description. The applicant’s statement that the County had suggested including phased reclamation in ARP04 does not relieve the County from the CEQA requirement to conduct a thorough environmental analysis of this aspect of the proposed project.

In conclusion, the County finds that the points raised by the applicant with regards to baseline are unfounded, and neither the description of the baseline, nor the conclusions regarding impact significance are altered.

Other Comments on Baseline

In comments 21-1, 21-2, 21-3, and 21-4, the commenter contends that certain aspects of ARP04 that differ from the baseline are “illegal” because they are prohibited in the Court Order. These comments are specifically addressed in Section 7.3, Responses to Individual Comments. These comments do not appear to take issue with the baseline presented in the Draft EIR, but rather in the process of applying for and considering ARP04.
Comment 30-45 contends that the baseline determinations were described in the Initial Study for the AQP, but not in the Draft EIR. As stated above, the baselines for both projects are thoroughly described in Chapter 3, Project Description. This comment goes on to state that the determination of the baseline for the AQP did not take into account crucial information from the 1984 Merrill Lynch report on Basalt Rock. In fact, excerpts from this document were heavily relied upon to determine baseline production levels and activities. As stated in the response to comment 30-45, the full Merrill Lynch Report, which was attached to comment letter 30, was reviewed in preparation of this Final EIR, and no additional information was found that would prompt a revision of the baseline or the environmental analysis presented in the Draft EIR. See the response to comment 30-45 in Section 7.3, Responses to Individual Comments, for a more detailed response. Comments 30-82 and 30-84 raise questions regarding the determination of the baseline level of noise and daily truck traffic, respectively. Please see the responses to those comments in Section 7.2. Comment 30-123 is a scoping comment on baseline determination. The points raised in this comment are repeated in the comments listed above, and are addressed in the Project Description, in this Master Response, and in the individual responses referenced above.

Several other comments that indirectly address baseline are responded to individually. Please refer to Section 7.3, Responses to Individual Comments.

Master Response 4: Alternatives

This Master Response responds to comments received pertaining to the Alternatives to the ARP and AQP described and analyzed in Chapter 6 of the Draft EIR. In addition, details and/or analysis of the impacts and feasibility of the Alternatives is provided, where warranted.

Alternatives to the Amended Reclamation Plan

No Project/Status Quo

No comments received directly address the No Project/Status Quo Alternative, and no changes are made to the description or analysis of this alternative.

Mitigated Alternative

Most of the comments that address the Mitigated Alternative focus on backfilling the Main Quarry Bowl as a means of alleviating water quality and biological impacts that may occur due to stratification of water in the Main Quarry Bowl after it is flooded. Since publication of the Draft EIR, comments received (particularly comment 1-2), as well as additional research into the availability of dredge spoils as a backfill material indicate that the supply of dredge spoils is limited, and that this material is increasingly in demand for restoration of Bay wetlands (U.S. Army Corps of Engineers and California State Coastal Conservancy, 2008). Other comments, such as Comment 30-104, note (as discussed in Mitigation Measure R4.5-6 and in the analysis of the Alternatives to the ARP) that backfilling would likely have secondary impacts, including noise and air emissions.

As discussed in Master Responses 1 and 7, mechanical mixing or aeration of the flooded Main Quarry Bowl, which is considered in the Draft EIR but described there as infeasible, now appears
to be feasible. This provision has now been added to Mitigation Measure R4.5-6; see Master Response 7. Because it is added as a feasible mitigation measure, backfilling the bowl, which would likely have greater environmental impacts than aeration or mixing, is no longer considered a necessary component of the Mitigated Alternative, and so is removed from the description of that alternative. As the Mitigated Alternative includes all mitigation measures identified in the EIR, this alternative now includes mechanical mixing or aeration as a means to avoid water quality and biological impacts associated with stratification of the flooded Main Quarry Bowl, and the analysis and comparison of alternatives to the ARP is revised to reflect this.

The revised portion of Chapter 6, Alternatives, follows:

**Alternative Description**

The Mitigated Alternative would include all mitigation measures identified in the EIR, would eliminate or alter those aspects of the proposed Reclamation Plan that have the greatest likelihood of causing significant impacts, and would include other, beneficial project components not contained in the applicant’s proposal. This would include the following:

The NE Quadrant would not be used as a staging area for storage and processing of materials for phased reclamation grading. Instead, areas of the NE Quadrant that are to be left in a natural condition, including the Grassy Knoll and the eucalyptus grove, would in the first phase of reclamation be restored to their final condition. Other areas of the NE Quadrant would be left in their current condition or re-graded to rough final grades, re-soiled, and re-vegetated appropriately to allow for eventual development after cessation of quarrying activities. Stockpiled material would either be left in place or moved to the NW Quadrant for use in constructing the surcharge berm if needed for that purpose. The existing berm in the NE Quadrant would be left in place until the cessation of quarrying.

In the SE Quadrant, SRRQ would continue mining the Main Quarry Bowl until final depth and extent are reached, prior to mining elsewhere on the property, including South Hill. The Main Quarry Bowl would then be used for depositing any excess overburden, pond fines, or other mining wastes from other areas of the property. Materials would be tested to ensure they did not exceed hazardous materials standards prior to placement. In addition, materials from off-site, including dredge spoils, would be brought in, primarily by barge, and deposited in the Main Quarry Bowl to reduce the final depth to approximately 30 feet msl. The most likely material to be used for this purpose is dredge spoils. Recent projections indicate that between 1995 and 2045, some 400 million cubic yards of sediments will be dredged from San Francisco Bay, an annual average of eight million cubic yards (San Francisco Estuary Project, 2008). Dredge spoils could be pumped into the Main Quarry Bowl before it is connected to the Bay, to avoid water quality problems. Any materials placed in the Main Quarry Bowl would eventually be covered with a cap of clean material prior to flooding of the bowl. A mechanical mixing or aeration system would be installed to ensure adequate water quality in the flooded bowl to meet RWQCB water quality standards.

In the SW Quadrant, SRRQ would delay further mining of South Hill until mining is completed in the Main Quarry Bowl. Overburden from South Hill would then be temporarily stockpiled or used as backfill in the Main Quarry Bowl.
In the NW Quadrant, the marshes would be restored to their final reclamation condition during phase 1 of reclamation. This would include hydraulic reconnection of the marshes with one another and restoration of tidal circulation. A buffer consistent with current and future use of the NW Quadrant and BCDC regulations would be established around the marshes. Stockpiles and the surcharge berm would be configured to avoid damaging or destroying structures eligible for designation as cultural resources. Post-reclamation use of the NW Quadrant would retain and preserve all remaining structures that are eligible for designation as cultural resources and that are suitable for preservation or adaptive reuse.

For this Alternative, post-reclamation uses of the site would be the same as those in the proposed Reclamation Plan. To offset increased energy demand and emission of air pollutants, including greenhouse gasses, post-reclamation development of the site would, however, include measures consistent with the Countywide Plan Update for sustainability and reduced ecological footprint. These features would be incorporated into the proposed future marina, residential, and commercial end use development; including, if found to be feasible at that time, installation and operation of a tidal energy generator facility located in the vicinity of the jetties proposed to be constructed in conjunction with the opening of the Main Quarry Bowl to the Bay.

**Effect on Operations**

This alternative would affect ongoing quarrying operations, since mining of South Hill would be delayed until after the Main Quarry Bowl is mined. The earlier reclamation of natural areas and limitations on proposed phased reclamation grading activities may also affect the timing and location for management of the Quarry’s ability to manage mining wastes on the property. Filling of the Main Quarry Bowl with dredge spoils and other overburden and other materials to the extent required to avoid water quality impacts would prolong completion of final reclamation and require additional study for development of a comprehensive deposition plan that could avoid potential impacts resulting from odor from dredge spoils, air quality, diesel particulate emissions, barge traffic and related effects of backfilling the Main Quarry Bowl.

**Alternative Reclamation with Alternative Beneficial End Use**

Several comments on the Draft EIR express a preference for this Alternative, because of its ability to avoid the significant water quality and biological impacts (Impacts R4.5-6 and R4.3-7) associated with the plan to connect the Main Quarry Bowl to the Bay and flood it (comments 1-3, 1-7, 5-3, and 5-5) or because it will result in a less intensive end use for the site (comment 18-3).

Discussions with Marin Municipal Water District (MMWD) staff following publication of the Draft EIR raise doubts about the feasibility of flooding the Main Quarry Bowl with fresh water and using it as a reservoir (Roxon, 2008). There is insufficient runoff from the Main Quarry Bowl’s watershed to fill the bowl. The existing water supply line to the Peacock Gap Neighborhood would limit the rate at which the bowl could be filled with water brought from another source, unless a new line were laid, which would likely have secondary environmental impacts. Finally, MMWD staff report that there would be limited demand for such a large water storage facility in this location, and that water stored in an open reservoir would require treatment before delivery, necessitating the construction of a treatment facility.
For these reasons, the description of the Alternative Reclamation with Alternative End Use Alternative is revised as follows:

**Alternative Description**

The Alternative Reclamation with Alternative Beneficial End Use Alternative would examine significantly different reclamation resulting in substantially different beneficial end uses of the site. These would include action in the near term for protection and restoration of all areas designated as “leave in natural condition” in the applicant’s proposal, and in addition the following:

- **The NE Quadrant** would be used for open space and recreation, and incorporated into McNear’s Beach County Park;

- **The NW Quadrant** would feature broad buffers around the restored marshes. Approximately 15-20 acres would be developed as a resource interpretive conference center and/or educational facility.

- Under this Alternative, no breach of the Main Quarry Bowl would occur and an alternative beneficial end use would be developed. Instead of a marina with access to the Bay, the Main Quarry Bowl would not be connected to the Bay, and would not be flooded, but would be filled with fresh water to become a water supply reservoir. This would be developed in conjunction with the Marin Municipal Water District. The area around the reservoir would be used for limited commercial and/or lower density residential development, consistent with protection of water quality within the reservoir. It is possible that non-body contact water recreation would be allowed within the reservoir, with the development of appropriate facilities (e.g., a boat launch). Facilities for a solar array energy generator would be developed as an additional beneficial end use on the southern exposure of the Main Quarry Bowl benches, if deemed feasible at that time. Optionally, the Main Bowl would remain unfilled and used for an alternate land use such as solar energy facilities, an amphitheater, recreational uses including rock climbing, or other suitable future end use. Rainwater can be expected to collect in the bottom of the bowl and form a pond, which might persist year-round. The pond could be used as a recreational or wildlife area.

- **Final grades and reclamation grading, re-soiling, and re-vegetation** would be consistent with these end uses, including re-soiling of benches and the base of the Main Quarry Bowl to enable the establishment of vegetation consistent with the end use, and maintenance of an access road to the bottom of the bowl. It would be necessary to specify an intended end-use for the Main Quarry Bowl with sufficient time prior to the cessation of mining such that, if necessary, the design of the final slopes of the bowl could be adjusted to ensure an adequate factor of safety for seismic and static stability.

**Effect on Operations**

Like the Mitigated Alternative, this Alternative may affect ongoing quarrying operations because of earlier reclamation of natural areas; final contours of mined areas may also differ.
Alternatives to the Amended Surface Mining and Quarrying Permit

No Project/Status Quo

Several comments (comments 36-2, 36-8 in Section 7.3) suggest that the No Project Alternative for the AQP should consider the impacts of immediate cessation of mining operations. As discussed in the individual responses to these comments, the Marin County Superior Court found and ordered that SRRQ has a vested right to continue to mine the Main Quarry Bowl to the extent that doing so is profitable, without respect to depth or duration of the mine pit, and to mine a portion of South Hill, as shown in ARP82. This suggestion is infeasible because it conflicts with the Court order. Therefore, there is no change to the description of the No Project/Status Quo Alternative to the AQP.

Mitigated Alternative

No comments directly address the Mitigated Alternative to the AQP, and no changes in the description or analysis of this Alternative are needed.

Reduced Alternative

The intent of the Reduced Alternative is to consider another approach to mining operations that may be more compatible with – or at least less disturbing to – the nearby residential neighborhoods. For this reason, the Reduced Alternative places stricter limits on mining operations that have generated the most controversy, including blasting, noise, truck traffic, and dust. Since publication of the Draft EIR, however, comments on the Draft EIR, new information, and research suggest that several aspects of the Reduced Alternative may be infeasible or ineffective in further reducing impacts. These include the following:

- Limiting blast vibrations to a PPV of 0.125 inches per second would be ineffective because, as discussed in Appendix J and in Section 4.7, Noise and Vibration, Impact P4.7-7 (continued blasting… would expose neighbors… to vibrations that exceed human annoyance levels), much of the annoyance experienced by neighbors of the Quarry from blast vibrations is likely due to air overpressure, not to ground-based vibrations. Further limiting PPV below 0.25 inches per second could result in more frequent smaller blasts, which might increase disturbance due to air overpressure effects. Therefore, this aspect of the Reduced Alternative is deleted.

- The applicant in comments 19-78 and 19-82 questions the feasibility or effectiveness in reducing impacts of other aspects of the Reduced Alternative, including enclosing some operations and paving roads used for more than 3 months. The conclusion that enclosing some operations could reduce impacts is supported by similar enclosures utilized at other quarries in the region. Upon further evaluation we found that the BAAQMD has BACT standards applicable to quarries, and that other quarries in the Bay Area are utilizing some of the recommended control technologies. Therefore, provisions are added to the Reduced Alternative to require the Quarry to evaluate the potential for increasing the scope and effectiveness of these measures, should this Alternative be adopted in lieu of the project.
The prohibition of Quarry operations on “Spare the Air” days (days when the Bay Area Air Quality Management District predicts that air quality standards will be exceeded) is changed to prohibit blasting only, as complete prohibition of operations would likely place a severe economic burden on the Quarry and the construction community.

The Reduced Project Alternative could result in the increased use of aggregate materials in the region brought from a greater distance than the Bay Area (such as Canada), which would have adverse consequences for air quality, including increased emissions of criteria air pollutants, toxic air contaminants, and greenhouse gases both within the Bay Area air basin and beyond.

The analysis and comparison of the Reduced Project Alternative in Chapter 6, Alternatives, has been revised accordingly, and the conclusions regarding the Environmentally Superior Alternative have also been revised; see below.

The description of the Reduced Project Alternative is revised as follows:

**Alternative Description**

This alternative incorporates suggestions for project alternatives contained in scoping comments from neighbors of the Quarry. The intent of the alternative is to reduce the intensity of operations and to reduce the incompatibility of quarry operations with other land uses in the area. This alternative includes the following provisions:

- Production levels would be limited to 1982 levels; All mitigation measures associated with the proposed project that are still relevant to the reduced project operations would be applied to this alternative as well;
- Further reduce noise and dust through enclosure of the crushing, sorting, and barge loading operations;
- Dust emissions would be further reduced by paving all roads used by trucks and heavy equipment that will be in use for more than 3 months;
- The Quarry would be required, within 1 year of issuance of an Amended Surface Mining and Quarrying Permit, to prepare a more specific engineering and economic evaluation and report of measures to reduce noise and dust from Quarry operations. This evaluation would include an examination of the increased scope and effectiveness of the dust and noise control measures used for the blasting, crushing, sorting, and barge loading operations. The evaluation would include examination of the economic feasibility, as defined by the Bay Area Air Quality Management District (BAAQMD), of all applicable measures contained in that agency’s Best Available Control Technologies (BACT) guidebook, including the following: (1) enclosure of jaw/cone crushers, screens, conveyors and all material transfer points and vent to bag houses with filtration of at least 0.01 gram per dry standard cubic foot; and (2) spraying of storage piles and site road surfaces with water or chemical suppressants. The evaluation would also include an examination of additional measures to reduce dust associated with blasting, including investigation and trial of a pre-blast water spray curtain. Furthermore, the evaluation would examine additional measures to reduce fugitive dust emissions produced by trucks and heavy equipment operating over unpaved surfaces. This would include examination of the
option to pave roads, and would also consider air emissions due to paving and removing pavement. The Quarry would be required to implement all feasible measures within one year of report submittal (within two years of issuance of the permit). Determination of increased scope of dust control measures would use the BAAQMD’s established cost limits for Best Available Control Technologies. The current standard is $5,300 per ton of PM-10 reduction.

- Blasting would be limited such that ground motion at the nearest residence is below that recommended in the Revey report. Minimum scaled distance would be $90.8 \text{ ft}^{1/2}$, this design would result in a maximum does not exceed a $PPV$ of $0.25$ inches per second. In addition, the Quarry would be required to give 36-hour advance notice of blast times and predicted intensity, and to institute a complaint resolution mechanism, with notification to the County Department of Public Works quarterly, of complaints received, and how and when they were resolved between the complainant and Quarry operators;

- Truck trips would be limited to a maximum of 125 one-way trips per day, Monday-Friday, 7 a.m. to 5 p.m., except during times of declared emergencies;

- Quarry operations would be limited to 7 a.m. to 5 p.m., Monday-Friday, except during times of declared emergencies;

- Loaded trucks to be washed down and tarped prior to leaving the Quarry, and to use the right lane only of Point San Pedro Road. This latter provision will be required for SRRQ’s own trucks and contracted trucks, and encouraged for non-SRRQ trucks through a trucker management and education program to be conducted by the applicant. This program will include signs posted at the facility exit scales and metering light stating that loaded trucks must use only the right lane of Point San Pedro Road;

- Conversion of the SRRQ’s truck fleet used for company inter-facility product transfers and deliveries from SRRQ to higher standard engines to reduce emissions, or use of alternative fuel to reduce emissions;

- Use of a state-of-the-art vacuum sweeper on Point San Pedro Rd at least two times per day;

- No quarry operations that increase air pollution, including blasting, on declared “Spare the Air Days,” except in times of declared emergencies;

- Following cessation of operations at McNear’s Brickyard, the Quarry would develop a new entry for trucks using the current McNear’s Brickyard entry. The number of trucks allowed to use this entry would be approximately equal to the number of trucks now accessing the Brickyard. This would reduce impacts associated with truck traffic at the enable early reclamation of the area now occupied by the existing haul road into the facility.

- Any shipments to Dutra’s Haystack Landing facility in Petaluma by barge only.
Effect of Alternative on Reclamation

This alternative may result in decreased production, and so may delay achievement of final reclamation grades: the Quarry may continue to mine for a longer period of time and operate under this Alternative. Removal or adaptive reuse of enclosed structures would have to be considered under the Amended Reclamation Plan.

Barge Only Alternative

In response to comment 19-80 (see Section 7.3), the analysis of air quality and traffic impacts of the alternatives to the AQP have been revised to reflect the likelihood that the Barge Only Alternative would eliminate the transport of quarry products directly from the Quarry by truck. However, this would not result in the elimination of truck trips and truck-related emissions generated by the Quarry overall, but merely their transfer to another location, since the Quarry would likely barge some materials to another facility where they would be transferred to trucks for transport to the point of use. Therefore, the Barge Only Alternative may cause air quality and traffic impacts that are equal to, or possibly greater than, those of the project and potentially result in geographically broader ranging truck traffic, air quality, and other effects in the region beyond Marin County. The elimination of trucks from the Quarry would also eliminate transport of products from SRRQ within most areas of Marin not accessible by barge. For this reason, the discussion of the Environmentally Superior Alternative in Chapter 6, Alternatives, has been revised, as shown below.

Analysis of Alternatives

Changes to the description of the alternatives have required revisions to the analysis of environmental impacts of the alternatives, their comparison to the projects, and conclusions regarding the Environmentally Superior Alternative. Please see Chapter 6 in Volume I of this Final EIR for the revisions to the analysis and comparisons; the conclusions regarding the Environmentally Superior Alternative are presented below:

Amended Reclamation Plan: Environmentally Superior Alternative

As described above and summarized in Table 6-1, each of the three alternatives would likely result in fewer significant impacts than the project. However, the No Project/Status Quo Alternative would result in impacts not associated with the project, notably interference with the extraction of the mineral resource. The Mitigated Alternative, while reducing most of the air quality significant impacts of the project, would likely cause another air quality impact associated with diesel emissions from increased barge traffic necessary to backfill the Main Quarry Bowl, without causing new impacts. The Alternative Reclamation with Alternative Beneficial End Use avoids or reduces most impacts associated with the project as proposed.

In conclusion, the Mitigated Alternative and the Alternative Reclamation with Alternative Beneficial End Use both appear to have the ability to meet most of the project objectives, to reduce significant impacts associated with the project, and to result in additional benefits.
not realized by the project itself. Therefore, these two alternatives are coequally the Environmentally Superior Alternative.

**Amended Surface Mining and Quarrying Permit: Environmentally Superior Alternative**

As described above and summarized in Table 6-4, the No Project/Status Quo Alternative would be expected to have more severe environmental impacts than the project as proposed. The Mitigated Alternative would reduce most project impacts, but several would remain significant and unavoidable. The Barge Only Alternative would not be likely to eliminate impacts related to transport of quarry products by truck, but merely to transfer them to another location; therefore, this Alternative is not considered environmentally superior to the project as proposed. The Reduced Project Alternative, however, may have the potential to reduce all impacts to less-than-significant, while still meeting or partly meeting all of the applicant’s project objectives. Therefore, the Reduced Project Alternative is considered the Environmentally Superior Alternative to the AQP.

**Master Response 5: Health Risk Assessment**

Numerous comments addressed the Health Risk Assessment (HRA), which is presented in Section 4.2, Air Quality. The applicant commented extensively on the HRA, as did many individuals and organizations. Comments from both the applicant, in comment letter 19, and the San Pedro Road Coalition, in comment letter 30, include comments prepared by experts in health risk assessment methodology and interpretation, several of which call into question approach, accuracy, assumptions, methods, findings, conclusions, and interpretation of the HRA. Individual responses to these comments are provided in Section 7.3. See especially the responses to applicant’s comments 19-100 and 19-102, and responses to San Pedro Road Coalition comments 30-6 through 30-44. Taken as a whole, the responses to these comments confirm that the approach, methods, findings, conclusions, and interpretation of results contained in the HRA are appropriate, accurate, conservative (conservative assumptions are used so that health risks are not underestimated), consistent with guidance for HRAs provided by the California Office of Environmental Health Hazard Assessment (OEHHA)\(^1\), and exceed current standards of practice for CEQA documents. Some additional information and analysis is provided in these responses, but the conclusions reached in the Draft EIR are not changed. These conclusions include the following:

- Incremental cancer risks, based on lifetime exposure to project-related toxic air emissions (mostly diesel particulate matter) are potentially significant, but can be mitigated to less than significant. See Impact C4.2-9 and Mitigation Measures C4.2-9a, b, and c in Section 4.2, Air Quality. The mitigation measures would limit Quarry operations to 1982

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\(^1\) The OEHHA *Air Toxics Hot Spots Risk Assessment Guidelines* state:

OEHHA has striven to use the best science available in developing these risk assessment guidelines. However, there is a great deal of uncertainty associated with the process of risk assessment. The uncertainty arises from lack of data in many areas necessitating the use of assumptions. The assumptions used in these guidelines are designed to err on the side of health protection in order to avoid underestimation of risk to the public. Sources of uncertainty, which may either overestimate or underestimate risk, include: 1) extrapolation of toxicity data in animals to humans, 2) uncertainty in the estimation of emissions, 3) uncertainty in the air dispersion models, and 4) uncertainty in the exposure estimates. (OEHHA, 2003, page 1-4)
levels of production, and would require a suite of measures to reduce emissions from
diesel-powered equipment used both for the mining operation and for reclamation grading.
The modeling that was carried out to calculate cancer risks used appropriate factors for
emission rates, dispersion, exposure duration, lifetime averaging, breathing rate, cancer
potency, and other factors, consistent with OEHHA and Bay Area Air Quality Management
District (BAAQMD) guidance.

- Chronic and acute health risks, including chronic health risks from exposure to crystalline
  silica emissions, are below the threshold level established by the BAAQMD and OEHHA,
  and are therefore less than significant. See Impacts C4.2-10 and C4.2-11 in Section 4.2, Air
  Quality. The calculation of chronic health risks due to crystalline silica, as opposed to
cancer health risks, is consistent with OEHHA guidance, and does not underestimate the risk to
the public from exposure to crystalline silica. See the response to Comment 30-13 in
Section 7.3. Some comments question statements in the Draft EIR regarding the natural
occurrence of crystalline silica. Please refer to the response to comment 23-1. This
response confirms the statements made in the Draft EIR regarding the natural occurrence of
this common substance.

- Cumulative risk of increased incidence of cancer, due primarily to diesel particulate
  emissions from past, present, and reasonably foreseeable future Quarry operations,
  reclamation, and post-reclamation land uses, is significant and unavoidable (see
Impact C4.2-12 in Section 4.2, Air Quality). Much of the risk comes from past Quarry
operations, but the ARP and AQP projects would make a considerable contribution to the
cumulative cancer health risk. While some of the residences in areas with the highest levels
of exposure were not built at the beginning of the modeled exposure period, i.e., 1982,
many residences within areas of cumulatively significant exposure were already built at
that time. See Figure 4.2-8, and the text of Impact C4.2-12 in Section 4.2, Air Quality.

Many comments from neighbors of the Quarry do not take issue with the HRA analysis, but express
concern that emissions from the Quarry are affecting their health or that of their families and
neighbors. The HRA found a significant, unavoidable cumulative cancer risk from toxic air
contaminants associated with past, current, and probable future operations and reclamation
(Impact 4.2-12). As noted in the impact discussion, most of the impact is from past emissions; the
EIR concludes, however, that current and future emissions, though in themselves less than
significant after mitigation, would contribute to a cumulatively considerable impact when combined
with past and present emissions. “Significant and unavoidable” is the most serious impact category
under CEQA. The identification of a significant and unavoidable impact in a Final EIR will require
the Board of Supervisors to adopt a Statement of Overriding Considerations if they are to approve
the projects, as indicated in the following excerpt from the CEQA Guidelines:

15093. Statement of Overriding Considerations

(a) CEQA requires the decision-making agency to balance, as applicable, the economic,
legal, social, technological, or other benefits of a proposed project against its
unavoidable environmental risks when determining whether to approve the project. If
the specific economic, legal, social, technological, or other benefits of a proposed
project outweigh the unavoidable adverse environmental effects, the adverse
environmental effects may be considered "acceptable."

(b) When the lead agency approves a project which will result in the occurrence of
significant effects which are identified in the final EIR but are not avoided or
substantially lessened, the agency shall state in writing the specific reasons to support its action based on the final EIR and/or other information in the record. The statement of overriding considerations shall be supported by substantial evidence in the record.

(c) If an agency makes a statement of overriding considerations, the statement should be included in the record of the project approval and should be mentioned in the notice of determination…

Several comments note that the Draft EIR did not include discussion of an air quality study in the vicinity of the Quarry conducted for the County by Onsite Environmental Laboratories in 2000, and that the results of this study could change conclusions about air impacts, including health risks. This study was reviewed in preparation of this Final EIR and was found not to contain information that would change the conclusions of the Draft EIR. Please see the responses to comments 23-18 and 45-6.

**Master Response 6: Greenhouse Gas Emissions and Climate Change**

Greenhouse gas emissions and climate change are discussed in Section 4.2, Air Quality, which finds significant impacts from greenhouse gas emissions associated with reclamation activities (Impact R4.2-3), post-reclamation land uses (Impact R4.2-5), and ongoing mining operations (Impact P4.2-7).

State laws, regulations, and policies regarding greenhouse gas emissions and climate change continue to evolve rapidly. The following updates federal and state actions and policies:

**Greenhouse Gas Emissions**

The U.S. EPA annually publishes the Inventory of U.S. Greenhouse Gas Emissions and Sinks for estimating sources of GHGs, which is generally consistent with the Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories. Currently, the federal Clean Air Act does not specifically regulate GHG emissions. However, in Massachusetts v. U.S. EPA, decided April 2, 2007, the U.S. Supreme Court determined that the U.S. EPA has the authority to regulate GHG emissions from cars and trucks under the federal Clean Air Act. As of January 2009, the U.S. EPA has not set federal ambient air quality emissions standards for GHGs.

At the state level, there are currently no state regulations that set ambient air quality emissions standards for GHGs. However, California has passed laws directing the California Air Resources Board (CARB) to develop actions to reduce GHG emissions, and several state legislative actions with a bearing on climate change and GHG emissions have come into force in the past decade.

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2 The IPCC was established by the World Meteorological Organization and the United Nations Environment Programme in 1988 to assess the potential impacts of climate change and options for mitigation and adaptation. The IPCC Guidelines for National Greenhouse Gas Inventories have been accepted by the United Nations Framework Convention on Climate Change.
Executive Order S-3-05

In 2005, Governor Schwarzenegger established Executive Order S-3-05, which sets forth a series of target dates by which statewide emission of GHG would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

Assembly Bill 32 (California Global Warming Solutions Act of 2006)

In 2006, California passed the California Global Warming Solutions Act of 2006 (Assembly Bill 32; California Health and Safety Code Division 25.5, Sections 38500, et seq., or AB 32), which requires CARB to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020 (representing an approximate 25 percent reduction in emissions). Under AB 32, CARB must adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 emission cap by 2020.

California Climate Action Team (CAT)

In response to Executive Order S-3-05, the Secretary of the California Environmental Protection Agency (Cal EPA) created the California Climate Action Team (CAT). The CAT is comprised of 14 agencies and divided into 11 subgroups, nine of which address specific economic sectors, and two that address implementing a multi-sector approach to addressing climate change. The subgroups consist of representatives from appropriate state agencies and departments.

In March 2006, the CAT published the Climate Action Team Report to Governor Schwarzenegger and the Legislature (the “2006 CAT Report”). The 2006 CAT Report identifies strategies that the State could pursue to reduce climate change GHG emissions. These are strategies that could be implemented by various State agencies to ensure that the Governor’s targets are met and can be met with existing authority of the State agencies. The CAT Report provides GHG emission reduction strategies.

In March 2008, CAT subgroups submitted more than 100 GHG reduction measures to the CARB Office of Climate Change to be considered for inclusion in CARB’s Scoping Plan. Cal EPA also submitted a Report Card collected from CAT agencies on proposed GHG reduction measures, including an estimate of the actual emissions reductions anticipated from those measures. This report will be updated annually beginning January 1, 2009.

CARB Climate Change Proposed Scoping Plan

In October of 2008, CARB developed the Climate Change Proposed Scoping Plan (AB 32 Scoping Plan) outlining the State’s strategy to achieve the 2020 GHG emissions limit. The AB 32 Scoping Plan, developed by CARB in coordination with CAT, proposes a comprehensive set of recommended actions designed to reduce overall GHG emissions in California. The Scoping Plan was approved by CARB in December 2008. The measures in the AB 32 Scoping Plan will be developed over the next two years and will be in place by 2012.
CARB Mandatory Reporting Requirements

Pursuant to AB 32, CARB approved a GHG mandatory reporting regulation in December 2007. CARB’s mandatory GHG reporting regulation, which appears at sections 95100-95133 of Title 17, California Code of Regulations, is a set of rules that establishes who must report GHG emissions to ARB, beginning in 2009, and that sets forth the requirements for measuring, calculating, reporting and verifying those emissions. In December, 2008, CARB published its Mandatory Reporting of Greenhouse Gas Emissions: Instructional Guidance for Operators (CARB, 2008) which further describes the facilities required to report their GHG emissions, and which provides guidance on how to prepare such reports. Industrial facilities required to report their annual GHG emissions include the following:

- cement plants;
- petroleum refineries emitting >25,000 metric tons (MT) CO₂ in a calendar year;
- hydrogen plants emitting >25,000 MT CO₂ in a calendar year;
- electricity generating facilities and cogeneration facilities generating > 1 megawatt and emitting >2,500 MT CO₂ in a calendar year;
- Electricity retail providers and marketers;
- other industrial facilities referred to as “general stationary combustion facilities” emitting >25,000 MT CO₂ in a calendar year.

SRRQ appears to fall under the category of “general stationary combustion facilities,” but because its annual combustion-related emissions, other than mobile emissions which do not count toward the reporting threshold, do not total 25,000 MT of CO₂ (see Tables 4.2-9, 4.2-12, and 4.2-14 in Section 4.2, Air Quality), SRRQ appears not to be subject to the mandatory reporting requirement.


Pursuant to Senate Bill 97 (Chapter 185, 2007) the Governor’s Office of Planning and Research (OPR) is in the process of developing CEQA guidelines “for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions.” OPR is required to “prepare, develop, and transmit” the guidelines to the Resources Agency on or before July 1, 2009. The Resources Agency must certify and adopt the guidelines on or before January 1, 2010.

On January 8, 2009, OPR released draft amendments to the CEQA Guidelines that provide guidance on the approach to GHG emissions in CEQA documents. The text of the draft amendments follows:

15064.4. Determining the Significance of Impacts from Greenhouse Gas Emissions

(a) A lead agency should consider the following, where applicable, in assessing the significance of impacts from greenhouse gas emissions, if any, on the environment:

(1) The extent to which the project could help or hinder attainment of the state’s goals of reducing greenhouse gas emissions to 1990 levels by the year 2020 as
stated in the Global Warming Solutions Act of 2006. A project may be considered to help attainment of the state’s goals by being consistent with an adopted statewide 2020 greenhouse gas emissions limit or the plans, programs, and regulations adopted to implement the Global Warming Solutions Act of 2006;

(2) The extent to which the project may increase the consumption of fuels or other energy resources, especially fossil fuels that contribute to greenhouse gas emissions when consumed;

(3) The extent to which the project may result in increased energy efficiency of and a reduction in overall greenhouse gas emissions from an existing facility;

(4) The extent to which the project impacts or emissions exceed any threshold of significance that applies to the project.

(b) A lead agency should make a good-faith effort, based on available information, to describe, calculate or estimate the amount of greenhouse gas emissions associated with a project, including emissions associated with energy consumption and vehicular traffic. Because the methodologies for performing this assessment are anticipated to evolve over time, a lead agency shall have discretion to determine, in the context of a particular project, whether to:

(1) Use a model or methodology to quantify greenhouse gas emissions associated with a project, and which of any available model or methodology to use. The lead agency may include a qualitative discussion or analysis regarding the limitations of the particular model or methodology selected for use.

(2) Rely on qualitative or other performance based standards for estimating the significance of greenhouse gas emissions.

Bay Area Air Quality Management District Comments on the Draft EIR

In its comments on the Draft EIR (comment letter 2), the Bay Area Air Quality Management District (BAAQMD) makes several recommendations for modifying the mitigation measures that pertain to the three significant GHG emissions impacts noted above:

• BAAQMD recommends that the greenhouse gas reduction (GHG) plan specified in Mitigation Measure R4.2-3c be completed prior to project approval, as part of the EIR process. In response to this comment, the public has had an opportunity to review and comment on the initial GHG inventory, impacts, and mitigation measures contained in the Draft EIR. The GHG Reduction Plan specified in Mitigation Measure R4.2-3c contains clear and enforceable standards; therefore, the County maintains that the public has had ample opportunity to comment on the GHG Reduction Plan, and the requirement to prepare and submit the plan within one year of project approval is appropriate;

• BAAQMD recommends prioritizing on-site GHG reduction measures and local off-site measures that also have co-benefits, such as reduction in particulate emissions;

• BAAQMD recommends annual reporting of GHG emissions and reductions through the California Climate Action Registry or another reporting agency.

In response to the last two points, Mitigation Measure R4.2-3c is revised as follows; revisions also include minor clarifications and corrections:
Mitigation Measure R4.2-3c: Within one year of project approval, the applicant shall prepare and implement a GHG reduction plan. The plan will include a complete inventory of reclamation-related GHG emissions and will demonstrate how the Quarry will reduce or offset remaining un-mitigated GHG emissions. The plan will prioritize emission reduction through energy conservation and other measures; for those emissions that cannot be reduced, the plan shall specify how emissions will be offset. Offsets may take the form of installation of on-site alternative energy generation facilities (such as solar power) or off-site compensation, such as monetary contribution to a project that sequesters carbon. Examples of such projects include wetland restoration, purchase of carbon credits verified by the California Climate Action Registry, and reforestation. On-site offsets will be given higher priority than off-site offsets, and offsets with co-benefits, such as reduction of particulate emissions within the vicinity of the Quarry, and restoration of habitat for special status species, will be given higher priority. The plan must demonstrate how, at a minimum, the Quarry will reduce reclamation-related, non-biogenic GHG emissions consistent with the Marin County Greenhouse Gas Reduction Plan and Countywide Plan Update policies: since no reclamation-related emissions were occurring in 1990, the plan must demonstrate how reclamation-related emissions are reduced or offset, such that there are no net emissions from reclamation. The plan will include an implementation schedule. The plan will be submitted to the Marin County Community Development Agency Public Works Department for review and approval. In addition, the initial emissions inventory prepared as part of the plan will be reported to the California Climate Action Registry or a successor organization as a baseline inventory, and the Quarry will conduct and report annual inventories annually.

Mitigation Monitoring and Reporting

Draft Mitigation Monitoring Measure R4.2-3: In addition to Draft Mitigation Monitoring Measure R4.2-1, the Marin County Public Works Department Community Development Agency (CDA) and the BAAQMD will be responsible for reviewing and approving the GHG reduction plan, which must be submitted within one year of project approval. The Marin County Public Works Department CDA will also be responsible for monitoring implementation of the GHG reduction plan.

Level of Significance after Mitigation

Implementation of Mitigation Measures R4.2-3a, b, and c will together result in no net increase in GHG emissions related to reclamation activities, thus reducing the impact to less than significant.

Other Comments on Greenhouse Gas Emissions

The applicant submitted two comments on greenhouse gas emissions: one related to the baseline for determining significant effects (comment 19-31) and one regarding the analysis of greenhouse gas emissions associated with project alternatives (comment 19-82). These comments are responded to individually in Section 7.3.

In addition, the applicant, in comment 19-103, presents the results of a study comparing greenhouse gas emissions of the project with several alternative scenarios, including supplying local demand currently being met by SRRQ with aggregate from other local quarries that do not have barge
docks; and also importation of aggregate from Canada. The results of this study suggests that these alternative scenarios would result in a substantial net increase in greenhouse gas emissions.

Master Response 7: Flooding the Main Quarry Bowl

The Draft EIR identifies several impacts associated with the plan, first proposed as part of the 1982 Amended Reclamation Plan (ARP82), and carried over in the current proposed ARP04, to construct a channel connecting the Main Quarry Bowl to the Bay and using it, following reclamation, as a marina. Of particular note are two impacts associated with the predicted stratification of water in the flooded Main Quarry Bowl, which is likely to lead to a decline in water quality in the deeper water within the bowl (Impact R4.5-6) which in turn could adversely affect special-status aquatic species (Impact R4.3-7). In the Draft EIR, three approaches were suggested in Mitigation Measure 4.5-6 to avoid or reduce the water quality impact. Backfilling the bowl to a depth similar to the surrounding Bay was considered infeasible as a mitigation measure, because of likely secondary impacts, and because it would profoundly affect the project and the project timeline; this approach is, however, considered as part of the Mitigated Alternative to the ARP in the Draft EIR. Cutting a second channel to the Bay, approximately opposing the first, would likely result in increased circulation, but the extent to which this would avoid the problem of stratification of the water column is not known; this approach is therefore also considered infeasible pending further research, which is beyond the scope of the EIR. Finally, the possibility of using some kind of mechanical aeration or mixing system is discussed, but because of the great depth of the Main Quarry Bowl, the conclusion reached in this mitigation measure was that this approach, too, may be infeasible. The conclusion reached in the Draft EIR for both Impact R4.5-6 and R4.3-7 is that, because of the inability to reach a conclusion that a feasible, effective mitigation measure is available, both of these impacts may be significant and unavoidable.

As discussed in Master Response 1, the applicant has provided new information that supports the feasibility of a mixing or aeration system (see comments 19-8, 19-51, 19-118, and 19-121 in Section 7.3). Additional research conducted by Marin County staff and ESA further supports this position (Schladow, 1993, 2008; Schladow and Fisher, 1995; Roxon, 1998; Hayes, 1998). This research indicates that the depth of the flooded bowl is not a substantial impediment, and that an engineered solution to the problem of stratification of the water column is likely feasible using currently available and proven technologies. Therefore, the text of the mitigation measures and conclusions for Impacts R4.5-6 and R4.3-7 are revised as follows:

Mitigation Measure 4.5-6: Reducing the depth of the Main Quarry Bowl prior to flooding would result in a harbor with an average depth similar to the remainder of San Pablo and San Francisco Bay. To accomplish this, the Main Quarry Bowl would need to be backfilled from its proposed final depth of 400 feet to a finished depth of approximately 30 to 40 feet. The backfill material could be any inert solid material and possible materials could range from dredge spoils to construction debris. It would be expected that most, if not all materials would have to be trucked into the site or offloaded and placed in the quarry using the applicant’s barge dock. Prior to filling the Main Quarry Bowl, the backfilled materials would have to be covered using a low-permeability cap material such as clay or Bay Mud. The cap material would need to be certified as clean fill. There would be several potentially
substantial secondary impacts for such a mitigation measure, which include increased truck trips and/or barge trips, increased use of the barge loading area, and associated diesel particulate air quality impacts. This mitigation measure would significantly alter the project as a whole and the overall project schedule, and in conjunction with potentially substantial adverse secondary effects, is deemed not to be feasible as mitigation for the project as proposed. The backfilling of the quarry bowl to reduce water depth to meet water quality standards is considered in the Alternatives analysis of this EIR, as a component of the Mitigated Alternative. Other Alternatives considered included not breaching the bowl and utilizing it as a fresh water storage reservoir (at a lower water depth), or retaining the bowl unfilled for an alternate end use.

Two alternate mitigation measures could include some type of deep water oxygenation/aeration procedure or opening another channel on an opposing side of the harbor to allow a greater degree of deep water mixing. According to our analysis, oxygenation/aeration would be difficult to present as mitigation because, considering the depths of the proposed harbor, the technology may not currently exist. Cutting an opposing channel may increase mixing but may not mix water at depth. The effectiveness of a second channel to mitigate this impact would require additional modeling and geotechnical study. These measures are therefore also deemed not to be feasible for the project as proposed.

Within one year of approval of the Amended Reclamation Plan, the applicant shall submit a concept engineering and economic report for use and future maintenance of a mechanical mixing or aeration system, or another engineered approach, that will result in avoidance or elimination of a stratified water column within the Main Quarry Bowl after it is flooded. The report will be conducted by qualified limnologists and water quality engineers. The system design will be at a schematic level and will be stamped by a California professional engineer, and will include calculations that demonstrate that the system will maintain water quality objectives established in the San Francisco Bay Regional Water Quality Control Board’s Basin Plan. The report will include an analysis of operating and maintenance costs for the system, as well as predicted energy requirements and greenhouse gas emissions, and a plan for minimizing both of these; and will identify a funding source to ensure continued operation of the system after reclamation.

**Mitigation Monitoring and Reporting**

**Draft Mitigation Monitoring Measure R4.5-6:** The Marin County Department of Public Works will be responsible for reviewing the report and schematic design specified in Mitigation Measure R4.5-6.

**Level of Significance after Mitigation**

Due to the potential infeasibility of available mitigation measures discussed above, the impact remains significant and unavoidable. There is a high likelihood that the deep waters of the flooded Main Quarry Bowl would experience poor water quality, likely in violation of RWQCB Basin Plan standards. Mitigation scenarios are few and those that could actually reverse the potential long-term water quality issue could be viewed as a considerable undertaking, with questionable technical feasibility and with potentially significant secondary impacts. Mitigation Measure 4.5-6 will ensure that this impact is reduced to less than significant.
The text of the mitigation measures and following sections for Impact R4.3-7 is revised as follows:

**Mitigation Measures Identified in this Report**

As described in Mitigation Measure 4.5-6, no feasible mitigation measure is available to avoid or minimize this impact. Therefore, the impact is considered significant and unavoidable. See also Chapter 6, Alternatives. Mitigation Measure R4.3-7: Implement Mitigation Measure R4.5-6 in Section 4.5, Hydrology and Water Quality.

**Mitigation Monitoring and Reporting**

Since no feasible mitigation measures are available to reduce the significance of this impact, no mitigation monitoring measures are specified. Draft Mitigation Monitoring Measure R4.3-7: The Marin County Department of Public Works will be responsible for reviewing the report specified in Mitigation Measure R4.5-6.

**Significance after Mitigation**

Significant and Unavoidable. Since Impact R4.3-7 would occur due to the water quality problems identified in Impact R4.5-6, mitigating Impact R4.5-6 to less than significant through implementation of Mitigation Measure R4.5-6 would also reduce this impact to less than significant.

**Master Response 8: Blast Effects**

Several comments focus on the analysis of blast effects contained in Section 4.7, Noise and Vibration, of the Draft EIR. The analysis of blast effects in the Draft EIR is based on a technical study of blasting conducted by Gordon Revey of Revey Associates, Inc. (RAI). Mr. Revey is a mining engineer and an internationally-recognized expert on blasting and blast effects. Mr. Revey prepared the following responses to the major issues and questions raised in comments on the analysis of blast effects.

Concern is expressed that the conclusions of the Revey Associates report (Appendix J) is flawed because it contains no empirical data from actual tests at SRRQ.

**Response:** The Report prepared by RAI does contain empirical data (derived from experience or experiment). The empirical “worst case” equation developed in the RAI Report (p. 7) is based on 181 vibration measurements reported in an independent study conducted by Vibra-Tech on behalf of Marin County during 2005. From a statistical perspective, the minimum number of points needed for a valid curve fitting is 30 data points. Moreover, the correlation coefficient for the SRRQ site curve is 0.796 – with 1.0 being perfect; this indicates the data fits the curve quite well. Since these data were collected over a 12 month period and represent a wide range of monitoring locations and direction-orientations between monitoring locations and blasts sites, it is reasonable to conclude that the nature of vibration energy and decay with distance at this site is well understood and that further independent testing would yield limited additional useful data for this purpose. It should also be noted that Draft Mitigation Monitoring Measure P4.7-7 requires continuation of the current program of seismic monitoring of all future blasting. The author (G.F. Revey) is confident that the great majority of the measured vibrations, based on scaled
distance (combined distance and charge-per-delay variable) would be far below levels predicted by the upper limit prediction curve presented in the RAI Report.

**Concern is expressed that no vibration measurements were made inside structures.**

**Response:** A study conducted for SRRQ in 2000 (Floyd, 2000) did include concurrent vibration measurements made in the ground and within a home and found that intensities of some motions measured in the home were higher than in the ground. This is expected because vertical wood-frame structures have a higher degree of freedom for movement than laterally confined ground. The intensity of vibration also generally increases with height within a structure due to structural amplification.

Structures respond differently to vibrating ground due to variations in structural design, height and location within the structure. For instance, motion in floor corners will be less than motion in mid-walls, and motion on the third floor will be greater than motion in a basement level. The nature of these differences has been extensively studied over the years in much research conducted by the US Bureau of Mines (USBM) and by independent researchers. The most extensive study that measured and documented the variable response of typical homes to blast-induced ground vibration is USBM Report of Investigation (RI) 8507, authored by David Siskind and others in 1980 (Siskind et al, 1980). Prior to this study, the USBM-recommended safe peak particle velocity (PPV) level for motions occurring at all shaking frequencies was 2.0 inches per second (in/s), based on data and conclusions in USBM Bulletin 656 (Nichols and Duvall, 1971). Siskind was explicitly concerned not just with structural response, but also with “human response” to blast-induced vibrations at the lowest frequency of motions that create more structural vibration response in homes. Siskind concluded that the recommended “safe” PPV level should be reduced from 2.0 in/s to 0.5 in/s, or one quarter of the old standard. Based on measurements reported in RI 8507 and prior research by USBM, Siskind concluded that, due to the variable nature of structure responses, vibration measurements for compliance with the new recommended “safe” PPV limits (which are shown in Figure 2.3 on page 6 of the RAI Report – Appendix J in Volume III) should be made on the ground near the structure of concern. In conformance with the USBM recommendations, monitoring regulations and industry standards always clearly stipulate that vibration monitoring should be done on the ground near the structure of concern.

Vibration sensor location placement practice is well-defined in *Industry Blast Monitoring Standards* developed by the Vibration Section of the International Society of Explosives Engineers (ISEE). For reference purposes, these standards were provided in Attachment I of the RAI Report. Part II -- Ground Vibration Monitoring, Section A - Sensor Placement, states, “The sensor should be placed on or in the ground on the side of the structure towards the blast. A structure can be a house, pipeline, telephone pole, etc. Measurements on driveways, walkways, and slabs are to be avoided where possible.”

**Concern is expressed that the RAI Report makes no references to test blasts done onsite where effects were measured in the ground and in structures.**

**Response:** Over the last ten or so years, hundreds of blasts with varying size and locations throughout the SRRQ property have occurred. The ground motions generated by all these blasts
were measured at nearby structures. While at the Quarry during the site visit made on October 10, 2006, the author observed the charging of a production blast that day and observed it during detonation with the express purpose of "feeling" the ground motion.

As explained above, the physical relationship between peak ground vibration, distance, and charge size at SRRQ is well understood and predictable. Also, extensive research reported in RI 8507 and the findings of a study done by the author (Revey, 2005) regarding measurements made in a home near a quarry in Frankfort, Kentucky are included in the RAI Report (Section 2.6 -- Effects of Environmental Forces versus Blast Vibration). As previously noted, in year 2000 SRRQ commissioned a study that measured vibration in structures and on ground near them (Floyd, 2000). The differences were within expected ranges.

Based on the large amount of historical vibration data at SRRQ, and its consistency with well-documented studies with respect to vibration intensities on the ground and in structures, it is reasonable to conclude that further studies would not yield useful information for the purpose of the EIR analysis.

**Concern is expressed that the results of a 1980 study of blast vibrations concluded that blast vibrations in the vicinity of SRRQ were "barely perceptible," but that recent complaints demonstrate that blast vibrations are felt more strongly.**

**Response:** The reference to a 1980 study of blast vibrations is from a noise study prepared in 1982 (Illingworth, 1982); the original report could not be located. This author (G. F. Revey) did find that the intensities of all of the vibrations measured by Vibra-Tech in year 2005 did indeed fall in the "barely perceptible" range, which presumably conforms to where the data fell in the earlier study. SRRQ data points from the Vibra-Tech study are plotted with respect to Human Response Curves developed by Wiss (1974) in Figure 2.6 on page 9 of the RAI Report.

Several commenters mention instances when residents have experienced window and wall rattling when blasting occurs. It is important to note that occupants of homes often mistakenly believe that ground-borne vibration is the cause of window and wall-rattling, as well as secondary noise and vibration that is heard and felt during blasting. In most cases the rattling effects are caused by pulsating low-frequency air-pressure waves caused when blasted rock moves. This form of energy can be quite noticeable, especially on cloudy days when air-wave energy can be more focused, and so may be more than "barely perceptible."

As discussed in Section 3.7, Noise and Vibration, the regulatory limit for air-overpressure measured with 2-Hz response seismographs is 133-dBL (0.014 psi). Damage to old or poorly glazed windows does not occur until air-overpressure reaches about 150 dBL. More importantly, since the decibel scale is a logarithmic ratio, the actual overpressure at 150 dBL is 0.092 psi, versus 0.013 psi at 133 dBL. Therefore, the actual pressure at the 133 dBL limit is less than one-seventh (0.0129/0.0917) the threshold damage level at 150 dBL.

As stated in the RAI Report (p. 22) monitoring data collected by Vibra-Tech reveal that levels of air-overpressure have not exceeded 130 dBL. Air-waves of this magnitude would create less strain in walls than a 30-mph wind gust, so it is extremely unlikely that structural damage is
occurring. However, similar to the window and wall rattling caused by strong winds, it is not surprising that these effects are noticeable and disturbing to occupants.

**One comment states that a study of blasting-induced vibration and noise conducted by Wilson, Ilhrig and Associates (WIA) at the Lexington Quarry in Santa Clara County concluded that a 0.5-in/s-damage criteria that protects structures does not adequately address human response and suggested that a 0.1 in/s standard, as proposed in ANSI S3.29 - 1983 or ISO 2631, Addendum DAD 1 (Now replaced by ANSI S2.71-1983 (R 2006)), would be appropriate to avoid significant impact to humans.**

**Response:** The vibration limits suggested by Wilson, Ilhrig and Associates, based on ANSI S3.29 - 1983 (ISO 2631) are either in error or misinterpreted from vibration limits based on steady-state vibrations occurring for extended periods of time. When the standards in ANSI S3.29 - 1983 (Now replaced by ANSI S2.71-1983 (R 2006)) are applied to vibrations in wood floors lasting less than 2 seconds, typically occurring less than one time per day, the recommended peak vibration limit would be around 0.67 in/s, which is higher than the currently imposed 0.5 in/s PPV limit. A summary of the calculation of the appropriate use of the ANSI S2.71-1983 (R 2006) Standard to calculate a human-response vibration limit follows:

- The base vibration limit from Table 1 for a typical house vibrating at a frequency of 8 to 80 Hertz is $1.0 \times 10^{-4}$ m/s (0.1 mm/s). This is the worst case or lowest level.
- This base level of 0.1 mm/s is then adjusted by a series of factors depending on time of day, duration of event, and number of events per day.

From Annex A of the Standard:

- The multiplier factor for daytime events between 0700 and 2200 hours from Table A.1 is 90.
- The Factor ($F_d$) for vibration occurring in wood floors lasting for a time $T = 2$ seconds is: $T^{-0.32} = 2^{-0.32} = 0.8$.
- The Factor ($F_d$) for an event typically occurring one time per day ($N = 1$) is: $1.7 N^{0.5} = 1.7$

When all factors are applied, the recommended Root Mean Squared vibration limit is: $0.1/mm/s \times 90 \times 0.8 \times 1.7 = 12.24$ mm/s or essentially 0.5 in/s. Since these recommended limits are Root Mean Squared limits, a peak limit would be 1.4 times greater; the peak limit would be a PPV of 0.67 in/s.

**Concern is expressed that no tests have been done to determine how vibration intensities (PPV) are reduced when the pounds of explosives per delay are reduced.**

**Response:** The physical relationship between charge weights, distance and peak ground vibration intensities and predictions is covered in Section 2.3 (p. 6) of the RAI Report. The specific intent of this section of the RAI Report is to explain how vibration intensity is affected by changes in distance and charge size. Moreover, the empirical relationship developed in this section (Equation 2.2) is expressly developed so the impact of charge size or distance changes can
indeed be determined. Using hypothetical cases, as shown in calculations below, at a given
distance (D) of 1,000 feet, if a 150-lb charge-per-delay is reduced to 75 pounds, the maximum
upper limit vibration levels would drop from 0.14 to 0.09 in/s:

Equation 2.2:

\[ PPV = 40.1 \left( \frac{D}{\sqrt{W}} \right)^{-1.28} \]

| Case 1: PPV = 40.1 | (1000.0 / 150.0 in^2) ^{-1.280} | 0.14 in/s |
| Case 2: PPV = 40.1 | (1000.0 / 75.0 in^2) ^{-1.280} | 0.09 in/s |

It should also be noted that the 181 data points from the Vibra-Tech Study (Year 2005) used to
develop this curve covered a wide variety of charge size and distances: charge weights varied
from 75 to 730 pounds and distances between blast locations and measurement points varied from
528 to 2,534 ft. All data are shown in Attachment II of the RAI Report. This relationship and the
extensive data used to develop it confirm that the relationship between charge size and vibration
intensities at SRRQ is well understood.

Concern is expressed that the long-term effect of blasting on structures has not
been considered in the Draft EIR.

dresses the issue of long-term effects of blast vibrations on structures, and particularly whether
repeated blasts that would not cause structural damage individually may over time cause damage.
To study the effects of repeated blasting, a test house was built in close proximity to a large
mining operation. During a two-year period, the test house was subjected to 578 production
blasts. During this test period, researchers evaluated structural fatigue and damage effects from
blast-induced vibration with PPVs ranging from 0.10 to 6.94 in/s. When the blasting study was
completed, the entire test house was shaken mechanically to determine the intensity and duration
of vibration that would cause fatigue cracking.

Cosmetic or hairline cracks from 0.01 to 0.10 mm wide appeared during construction of the
house, and also during a period when no blasting was taking place. The formation of cosmetic
cracks increased from 0.3 to 1.0 cracks per week when ground motions exceeded 1.0 in/s.
Intensity of motion from human activity and changes in temperature were equivalent to those
produced by ground motions up to 1.2 in/s.

When the entire house was shaken mechanically, the first cracks appeared after 56,000 cycles.
To produce the same effect, blasts would need to generate ground motions of 0.5 in/s once a day
for 56 years (20,440 blasts).
Over the anticipated 17-year period of mining at SRRQ under the proposed Amended Reclamation Plan, approximately 2,200 blasts may occur (2.5 per week for 17 years), and these blasts will be limited to motions not exceeding 0.5 in/s. Moreover, as already discussed at length in the RAI Report and confirmed in RI 8896, daily and cumulative strain in building materials that cause cosmetic cracks due to normal human activities and changes in temperature are equivalent to 1.2-in/s ground motions, more than double the 0.5-in/s levels allowed in this case. Based on these findings, it is reasonable to conclude that no cumulative damage would occur.

**Master Response 9: Land Use Compatibility**

This Master Response provides further discussion of, and responds to comments regarding Impact C4.6-7 (Continuing operation of the Quarry under the proposed Amended Surface Mining and Quarrying Permit and simultaneous phased reclamation grading under the Amended Reclamation Plan would result in continuing incompatibility with neighboring residential and recreational land uses). This impact is found to be significant and unavoidable in the Draft EIR. The basis for this conclusion is that the close proximity of neighboring residential and recreational land uses to the Quarry guarantees that Quarry operations and planned reclamation, no matter how limited and carefully conditioned, would cause at the very least ongoing annoyance due to dust, noise, blast vibrations, truck traffic, and landscape changes, since these are unavoidable consequences of mining operations and reclamation activities. While many of these impacts fall below the standard of significance (largely because they were already occurring in 1982 and so are considered a part of the baseline), together they combine to cause a cumulatively significant impact.

In Comment 19-91, the applicant contends that this impact is improperly construed, because, first, the Quarry has not encroached on the “buffer” established in 1982 to protect surrounding land uses from Quarry impacts and, second, because SMARA requires the County to protect the mineral resource when making land use decisions regarding adjacent, potentially incompatible land uses. The “buffer” cited by the applicant is not described in the comment. The 1982 Peacock Gap Neighborhood Plan, adopted both by the City of San Rafael and the County of Marin, contemplated 10-12 years of mining at the Quarry, and states that, prior to the cessation of mining, “phased development of the non-rock quarry areas of the property is not appropriate…;” the Plan does not, however, explicitly establish a buffer (p. 29). The Plan also allows for residential development of Parcels 5 and 6, where Marin Bay Park and Heritage Drive were constructed, further calling into question the applicant’s statement that a buffer was ever established. Furthermore, the Quarry’s use of the NE Quadrant for disposal of mining wastes, and the continued operation of McNear’s Brickyard in the NW Quadrant, call into question whether even the relatively undeveloped areas of the property may be considered a “buffer.”

The second point made by the applicant is that SMARA requires the County to protect the mineral resource when making land use decisions. This duty may be used as a basis for a finding of overriding considerations when considering project approval, per CEQA Guidelines §15093.

The fact remains, however, that the proximity of residential areas to the Quarry has resulted in an unavoidable land use impact. City of San Rafael approvals of residential developments since 1982,
including Marin Bay Park and Heritage Drive, have only worsened this conflict, despite the
requirements for extraordinary design features imposed on the developers cited by the applicant in
comment 19-86. Both of the proposed projects make a considerable contribution to what is
categorized in Impact C4.6-7 as a cumulative impact, because both the AQP and ARP would
result in physical changes to the environment, including noise and vibrations, air quality, aesthetics,
and traffic which, while less than significant individually, combine with each other and with
impacts of other projects, including land use decisions that have resulted in residences in closer
proximity to the Quarry, to cause a significant cumulative impact. The applicant’s contention in
comment 19-9 that “less than significant impacts cannot combine to cause a significant cumulative
impact” is incorrect; please see CEQA Guidelines §§15065(a)(3), 15130(a)(1), and 15355.

The alternatives to both the AQP and the ARP seek to limit or decrease this inherent land use
incompatibility. For further discussion of alternatives, please refer to Master Response 4.

**Master Response 10: Marshes**

This master response addresses the issues commenters raised with respect to the mitigation
proposed in the Draft EIR to restore tidal influence to the SRRQ marshes.

The Draft EIR addresses this topic area in Section 4.3, Biological Resources; see especially
Impact R4.3-5 (reclamation activities and post-reclamation development could result in adverse
effect on wetlands), Impact R4.3-12 (post-reclamation development adjacent to marsh habitat
could result in long-term impacts to special status species), Impact P4.3-17 (ongoing quarrying
activities may result in degradation of marsh habitat), and Impact C4.3-18 (Impacts of the ARP
and AQP on the salt marshes present at the project site would make a considerable contribution to
cumulative impacts on marsh habitat). This master response addresses all or part of the following

Commenters share a basic concern over the health of the SRRQ marshes and most are supportive
of Mitigation Measure C4.3-18b, which would require early restoration of the marshes.

In their comment letter (comment letter 19), the applicant raises several points regarding
restoration of the marshes, including the following:

- The applicant is committed to preserving the marshes, but not necessarily to returning them
to a fully tidal state; there are significant constraints to full tidal restoration and other
options should be considered;
- The NW Quadrant marsh is primarily a freshwater marsh;
- The Draft EIR’s conclusion that tidal restoration is the only feasible means to improve
habitat quality in the marshes is incorrect.

The reference to tidal exchange in Impact R4.3-5 on p. 4.3-35 of the draft EIR has been revised as
follows, not because it is an inappropriate term, but because the discussion is referring to
language used in ARP04 and mischaracterizes that document:
Adverse impacts on jurisdictional waters resulting from project activities would be considered significant. As part of the Standards for Preserving Sensitive Habitats, ARP04 stipulates that "adequate setbacks" shall be instituted to protect the NW Quadrant marshes during reclamation but does not define them. ARP04 further stipulates that high quality stormwater runoff will be maintained to protect the marshes and that the outlet works of the marsh will be maintained in good order to ensure tidal exchange (as previously noted, at this time there is no tidal exchange in the marshes). ARP04 further states that the applicant will maintain water flow in existing swales and sloughs and would protect inlets from sedimentation as well as maintain a 10 foot setback between the head of jurisdictional other waters and reclamation activities. While these measures offer some protection, they are not adequate to fully mitigate potential impacts to jurisdictional waters at SRRQ.

**Mitigation Measures Proposed as Part of the Project**

*Mitigation Measure R4.3-5a: ARP04 contains standards for setbacks from marsh areas. As stated in Chapter 3, Project Description, the saltwater and brackish marsh areas in the NW Quadrant would be protected by maintaining a setback from the edge of the existing marsh, maintaining high quality stormwater runoff, and keeping the outlet works of the marsh in good working order, to ensure tidal exchange. ARP04 further states that stormwater quality would be monitored, and that the setback would align with the edge of current operations, including the edge of existing pavement and/or storage areas in the McNear’s Brickyard storage area. As this component of ARP04 does not comply with the setback requirements for the Baylands Corridor contained in the Countywide Plan Update, Mitigation Measure R4.3-5b is necessary to further mitigate this impact.*

The commenter is incorrect in stating that the NW Quadrant marshes are freshwater marshes. While the only current hydrologic inputs are freshwater runoff and direct precipitation, antecedent tidal conditions combine with the present hydrologic inputs to create a mosaic of non-tidal salt marsh, which grades into brackish marsh where freshwater influence is the greatest.

ARP82 stated that “Bridging or culverting will be provided under the westerly access road (which now serves the McNear’s Brickyard) in order to maintain the natural flow of water from the Bay to the marsh.” There was no change to this language in ARP04. This language implies that existing tidal control structures will be removed as part of ARP04 and that the marshes are to be restored to full tidal exchange.

Absent surrounding infrastructure, conditions allowing full tidal exchange between the Bay and the NW Quadrant marshes should be the ideal, even if this were to result in significant changes in marsh vegetation. In a natural state, this marsh would consist of a mosaic of brackish and saltwater influenced areas of vegetation, as well as unvegetated mudflats and adjacent uplands. While it may be that the ‘West Wetland’ has a relatively high functional score as a non-tidal seasonal salt marsh, it is unclear why the commenter feels that reintroduction of tidal influence would threaten overall healthy function of the marsh.

However, as the commenter points out, it may be that there are significant constraints relating to restoring tidal flow to the marshes due to potential for flooding of Point San Pedro Road and access roads into the project site; and there are indeed numerous ways in which the SRRQ marshes could be restored or enhanced. The point is also taken that a further and complete analysis, which is outside the scope of this EIR, should be undertaken to determine the ultimate
direction that the SRRQ marsh restoration will take. Therefore, the discussion for Impact C4.3-18 and Mitigation Measure C4.3-18b are revised as follows:

**Impact C4.3-18: Impacts of the ARP and AQP on the salt marshes present at the project site would make a considerable contribution to cumulative impacts on marsh habitat (Significant).**

The 1899 San Francisco USGS 15 minute topographic quadrangle shows that a road to McNear’s Brickyard was already in place across the Bayward edge of the SRRQ marshes. The road would have been built on a levee so these marshes have been partially or entirely cut off from tidal influence for over 100 years. In 1899, and at least through 1915, the SRRQ marshes were also connected to a much larger area of tidal marsh, which has since been replaced by the Peacock Gap Golf and Country Club. Further examination of historical USGS topographic quadrangles and aerial photographs show that the current Quarry entrance road did not exist in 1942, but had been built by 1968. This means that, in addition to having been cut off from tidal influence over a century ago, the easternmost section of the marshes have been cut off from the western sections for nearly 40 years and perhaps up to two decades longer than that.

The long-standing fragmentation of these marshes and lack of tidal influence, as well as the destruction of adjacent and contiguous habitat, have already combined over time to degrade marsh habitat at SRRQ. While this habitat still provides some foraging and breeding habitat for more disturbance-tolerant species, it is likely that it is no longer used by species that are less tolerant to disturbance or that require larger, contiguous areas of habitat.

ARP82 identified the marshes as areas to be preserved in a natural condition, and specified restoration of the marshes after cessation of mining activities. **One crucial component of such restoration is the reestablishment of tidal influence through hydraulic connectivity with the Bay.** Mining did not cease within the timeframe contemplated in ARP82, and it can be reasonably surmised that the continued delay in establishing tidal action, in conjunction with the disturbing effects of noise, vibration, dust, vehicle and equipment operation, and human presence associated with continued operation of the Quarry, has further degraded the value of the marshes since approval of ARP82. While culverts, gates, and pumps are in place that would allow reestablishment of tidal action, SRRQ does not currently use these to enable tidal influence. **The presence of surrounding roads and other infrastructure may impose significant constraints on reintroduction of tidal waters as this may have the potential to result in increased flooding along Point San Pedro Road and along the access roads into the project site. There may also be other ways to improve and enhance hydrologic retention and circulation within the marshes.**

As discussed in Impact R4.3-5, **Under ARP04, the continued lack of tidal circulation attributable to ARP04 alone is considered to have a less than significant impact on marsh habitat. Similarly, the effects of continued mining operations on the marshes under the proposed AQP is considered to have a less than significant impact (Impact P4.3-17). However, the effects of the two projects combined in delaying restoration of tidal circulation, and the continuing adverse effects of operations on marsh habitat, combined with the impacts of past projects, including ARP82, the issuance of the existing Surface Mining and Quarrying Permit, and earlier alteration of marsh hydrology and extent, is**
considered significant. The contribution of both the ARP and AQP to this impact is cumulatively considerable, and therefore significant.

**Mitigation Measures Proposed as Part of the Project**

**Mitigation Measure C4.3-18a:** See Mitigation Measure R4.3-5a.

**Mitigation Measures Identified in this Report**

**Mitigation Measure C4.3-18b:** The applicant shall prepare a Tidal Marsh Restoration plan and implement the recommendations as soon as practicable, and in any case, shall complete the tidal marsh restoration prior to completion of Phase 1 reclamation. This mitigation measure will be implemented through the following:

- The project proponent shall develop and submit a Tidal Marsh Restoration plan to the County and other applicable resource agencies within 1 year of approval of the AQP. The Plan will include, but not be limited to, the following elements:
  - A baseline study of existing marsh conditions, including topography, a complete analysis of current hydrology, vegetation, and wildlife that will be used to inform subsequent marsh restoration planning.
  - A thorough analysis of the potential effects of tidal restoration on adjacent infrastructure and existing marsh vegetation.
  - Development of a suite of restoration alternatives, with tidal restoration as the preferred alternative, providing constraints do not preclude this course of action.
  - Feasible goals for marsh restoration with quantifiable objectives that can be measured over time to determine whether goals are being met.
  - A detailed plan for marsh restoration, including, if necessary to achieve objectives, plans for excavation of new channels, addition of new culverts, setbacks, buffers, etc.
  - An operations schedule for the existing tide gates that will provide for twice daily tidal inundation of the SRRQ marshes.
  - A maintenance schedule for any mechanical devices or features, such as tide gates, specified in the plan.
  - A monitoring plan to determine optimum inundation levels for the marshes. This would include measurements of hydrology, sediment accretion, and changes in vegetation over time.
  - A schedule for annual monitoring reports, which shall be submitted to the Community Development Agency Department of Public Works, as well as all permitting agencies as required.
Master Response 11: Noise Standards and Methods

Several comments state that the noise analysis in the Draft EIR does not use appropriate methods or standards for the impact evaluation; several of these (comments 9-4, 9-15, 30-73, 30-76, 30-158, 35-7, 36-4, 36-6 in Section 7.3) state that the EIR should have used standards contained in the City of San Rafael Noise Ordinance. Individual responses to these comments are provided in Section 7.3; this Master Response provides a general response to this issue.

The Draft EIR uses the land use compatibility standards from the Countywide Plan Noise Element. These standards identify exterior noise environments which are appropriate for various types of land uses. For low density, single family residential uses, the normally acceptable noise level is less than 60 dB CNEL or Ldn; conditionally acceptable levels are 55-70 dB CNEL or Ldn, normally unacceptable levels are 70-75 dB CNEL or Ldn, and clearly unacceptable levels are above 75 dB CNEL or Ldn.

The City of San Rafael’s General Plan Noise Element contains a marginally less restrictive set of standards in its Exhibit 31. Within San Rafael, the normally acceptable noise levels for all residential uses is less than 60 dB Ldn, while the conditionally acceptable noise level range is 60 to 75 Ldn. Therefore application of the City of San Rafael’s Noise Element land use compatibility standards would have no net change on the noise impact analysis contained in the Draft EIR.

The City of San Rafael also has its own Noise Ordinance implemented in Section 8.13 of its municipal code. While noise ordinance standards may be used to assess noise impacts of development projects within the City of San Rafael, these standards are not applicable outside of the city and cannot be enforced upon an operator outside of the City. Consequently, the City of San Rafael Noise Ordinance standards were not applied in the analysis of noise impacts in the Draft EIR.

Master Response 12: Importance of the Resource

Numerous comments were received from reclamation districts, port authorities, and water agencies regarding the importance of SRRQ as a local source of high-quality aggregate materials for marine construction in the Bay and Delta (comment letters 8, 10, 11, 12, 13, 14, 15, 16, 20, 24, 28, 31). Many of these note the ability of SRRQ to ship materials by barge to locations inaccessible to haul trucks. Some note the ability of SRRQ to produce and deliver large quantities of material on short notice. Several state the importance of SRRQ as a source of material for revetment and repair of levees in the Sacramento-San Joaquin Delta, and for other coastal infrastructure projects. These letters generally do not address the environmental impact analysis, but rather are written in support of the projects and in the continued operation of SRRQ.

Other comments, including comments 30-97 and 32-8 through 32-12, state that SRRQ is not unique in its ability to supply aggregate materials for marine construction in the Bay and Delta, and suggest that an alternative should be considered that would include immediate cessation of mining at SRRQ; these comments contend that other quarries (including Canadian quarries) could supply materials currently produced by SRRQ. The response to comment 30-97 is repeated here:
According to the CEQA Guidelines §15126.6(a), alternatives must meet three criteria: they must be feasible, they must be capable of meeting at least some of the project objectives; and they must be capable of reducing or avoiding at least some of the project’s significant impacts. An alternative that would encompass shutting down the San Rafael Rock Quarry and relying instead on materials from other local quarries or from farther afield (such as Canada) appears not to meet these criteria for the following reasons: it is infeasible, as the Marin County Superior Court has affirmed the Quarry’s vested right to continue mining; while it may reduce certain site-specific impacts, it would likely create new or more severe impacts elsewhere, including impacts related to transportation and transportation-related air emissions, such as increased emissions of greenhouse gases, as discussed in Master Response 6.

For these reasons, such an alternative is not considered.

References


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Roxon, Dana, Assistant Division Manager, Environmental and Engineering Services, Marin Municipal Water District, personal communication (telephone) with Dan Sicular, ESA, September 8, 2008.


Schladow, S. Geoffrey (Professor of Water Resources and Environmental Engineering Director, Tahoe Environmental Research Center University of California, Davis), personal communication (e-mail) with Rachel Warner, Environmental Planner, Marin County Community Development Agency re: feasibility of aeration systems for the flooded Main Quarry Bowl at San Rafael Rock Quarry. September, 11, 2008.


7.3 Comments on the Draft EIR and Responses

This section contains all comment letters and responses to individual comments. Each comment letter is assigned a number code, from 1 through 49, and each comment is numbered in the margin of the comment letter. A complete list of comment letters is provided in Table 7.1-1 in Section 7.1, Introduction to the Comments and Responses. Responses to the comments follow each letter, and responses are referenced using the same numeric system. For example the first comment from the first letter, from the National Marine Fisheries Service, is designated 1-1, as is the response to it. Testimony from the Board of Supervisors’ Public Hearing on the Draft EIR is assigned the number “50” and follows the comment letters.

Several comments have prompted the County to revise the text of the Draft EIR. Revisions of the text of the Draft EIR are shown in this section as follows:

- Excerpts of the text of the Draft EIR are indented and italicized;
- Additions to the text of the Draft EIR are shown as underlined;
- Deletions of the text of the Draft EIR are shown as strikeout.

All changes to the text of the Draft EIR are also shown in Volume I of this document, which contains the complete text of the Draft EIR, as revised.
April 18, 2008
In response refer to:
T/SWR/2008/02290

Mr. Tim Haddad
Environmental Coordinator
Marin County Community Development Agency
301 Civic Center Drive, Room 308
San Rafael, CA 94903

Dear Mr. Haddad,

NOAA’s National Marine Fisheries Service (NMFS) has reviewed the Draft Combined Environmental Impact Report (DEIR) for the proposed San Rafael Rock Quarry (SRRQ) Amended Reclamation Plan (ARP) and Amended Surface Mining and Quarrying Permit. The SRRQ is located on Point San Pedro and fronts the San Pablo Bay portion of San Francisco Bay on both its southern and eastern sides. The ARP being examined at this time proposes to continue mining the SRRQ for 15-17 more years until the main quarry bowl reaches a maximum depth of 400 feet below sea level with an average depth of 350 feet below sea level. At the completion of mining, the face of the quarry would be set at an angle of approximately 75% with 30 foot wide benches found at approximately 90 foot intervals in depth. Following preparatory work, a channel approximately 75 feet wide and 12 feet deep would be excavated from the quarry to the east, allowing the quarry bowl to flood with water from San Pablo Bay. Preparatory work would include constructions of two jetties at the channel entrance extending approximately 200 feet into San Pablo Bay. The jetties are intended to reduce sedimentation in the channel from the area offshore of the quarry which varies in depth from 6 to 12 feet. A 600 slip marina is planned along with approximately 25 acres of marina commercial uses and other commercial and residential development. Potential development of a ferry terminal outside of the quarry bowl is briefly mentioned in the DEIR.

The alternatives analysis in the DEIR presents two alternatives as co-environmentally superior alternatives: the Mitigated Alternative and the Alternative Reclamation with Alternative Beneficial Use. The mitigated alternative calls for backfilling of the quarry bowl with dredged spoils from San Francisco Bay, construction debris and other clean fills to a depth of 30 feet. The development of a marina and associated commercial facilities is still planned as is a reduced amount of other commercial and residential development. This alternative fails to analyze the potential impact to beneficial reuse projects for dredged spoils, such as the nearby Hamilton Army Airfield Wetland Restoration, that may result from a competing destination for clean, dredged material. Diversion of material to the quarry bowl could significantly delay restoration projects which benefit the aquatic and aquatic dependent resources of San Francisco Bay to a project that is expected to have potential adverse impacts.
The DEIR also fails to analyze potential impacts from this alternative relating to pollution from marina and associated uses development (e.g. copper from boat hulls, polycyclic aromatic hydrocarbons from fueling the vessels) and the creation of habitat that may alter Essential Fish Habitat (EFH) in the project vicinity. The creation of a sheltered, deeper water habitat can be expected to provide ambush opportunities for predatory fish which utilize areas with shelter (e.g. pilings and jetties), altered light conditions (e.g. shadows from docks), and sudden changes of depth (e.g. the rapid change from the 12 foot deep channel to the 30 foot deep main quarry bowl) such as the nonnative striped bass. This may result in predation upon species managed under the EFH provisions of the Magnuson-Stevens Fishery Conservation and Management Act such as juvenile Chinook salmon, rockfish, starry flounder, English sole and northern anchovy both within the quarry bowl and in the vicinity of the jetties in San Pablo Bay. Several populations of Chinook salmon and steelhead trout that utilize this portion of San Pablo Bay during their smolt lifestages are listed for protection under the Endangered Species Act (ESA) and any take of these species is considered significant.

The other co-environmentally superior alternative presented in the DEIR, the Alternative Reclamation with Alternative Beneficial Use, is preferred by NMFS. This alternative does not allow for the opening of the main quarry bowl to San Pablo Bay and therefore avoids the vast majority of potential impacts to EFH and ESA listed species. Potential alternative uses for the main quarry bowl include a solar array energy generator, an outdoor amphitheater, or a freshwater reservoir managed by the Marin Municipal Water District (MMWD). This last potential use may provide a benefit to area aquatic resources by allowing for the MMWD to alter release schedules and volumes from other area reservoirs to the benefit of ESA listed steelhead trout or allow them to operate their proposed desalination facility only at times of the year which minimize impacts to aquatic resources. Potential degraded water quality conditions at depths in the reservoir will affect beneficial uses, such as cold water aquatic life, only if these uses are allowed (e.g. fish are stocked to allow for fishing). It is likely that fresh water from the reservoir would receive some additional treatment before entering the MMWD distribution system and would therefore not be impaired for its beneficial use as a drinking water source. If a ferry terminal is proposed, it can be considered separately at the appropriate time.

NMFS has several concerns with the current proposed plan related to the flooding of the quarry bowl to a maximum depth of 400 feet below sea level. The DEIR notes that the project may impact aquatic resources due to expected water quality impacts created by flooding the quarry bowl. Complete tidal exchange of surface water within the bowl is expected to take several weeks at points farthest from the inlet channel. This will allow pollutants from the surrounding land uses and Bay waters to concentrate. Expected pollutants could include copper from boat hulls, polycyclic aromatic hydrocarbons from fueling the vessels or from parking lot runoff, and other typical nonpoint source pollutants such as metals, nutrients, oils, and pesticides from the residential and commercial uses. Water quality below a depth of 30 feet is expected to become poor with low dissolved oxygen conditions. The DEIR predicts that these conditions will adversely affect the surface water quality as well. A likely impact missing from the DEIR analysis is the conversion of inorganic forms of mercury to bioavailable forms (methylmercury) due to the low oxygen conditions within the bowl. The San Pablo Bay is on the Clean Water Act section 303(d) list of impaired waterbodies because of excessive concentrations of mercury in Bay sediments. Mercury will enter the quarry bowl on sediments from San Pablo Bay. The
predicted low dissolved oxygen conditions promote its methylation, which allows it to enter the aquatic food web (typically it is taken up by algae), contributing to potential impacts to fish, piscivorous birds and humans through bioaccumulation of methylmercury.

Opening the bowl to San Pablo Bay will also alter EFH in the project area as noted earlier by creating habitat favorable to predatory fish species which utilize an ambush strategy. This may result in impacts to ESA listed salmonids as well. The DEIR already recognizes that an ESA consultation will likely be needed at the permitting stage, which is not expected for 12-14 years, due to potential impacts from dredging, pile driving and jetty construction. Given that the portion of the proposed project most likely to impact aquatic resources is more than a decade away, it is inappropriate to determine that impacts from opening the quarry bowl to San Pablo Bay, and related projects, are significant and unavoidable. Technologies which would promote deep water aeration or circulation, including solar powered pumps to power the system, can be reasonably expected to improve in the decade before detailed planning is expected to take place. The DEIR should call for a re-evaluation of alternatives in the future if this option is retained.

In conclusion, NMFS recommends that the lead agency reject the project as proposed due to the significant and unavoidable adverse impacts to aquatic species. The ARP should be modified to designate the Alternative Reclamation with Alternative Beneficial Use option as the preferred and planned reclamation strategy. If you have any questions regarding these comments or recommendations, please contact Joe Dillon of my staff at 707-575-6093 or Joseph.J.Dillon@noaa.gov. Thank you for requesting this review of the project.

Sincerely,

[Signature]

Steve Edmondson
Northern California Habitat Supervisor

Cc: Dick Butler, NMFS, Santa Rosa
Gary Stern, NMFS, Santa Rosa
Russ Strach, NMFS, Sacramento
Bob Hoffman, NMFS, Long Beach
Bryant Chesney, NMFS, Long Beach
Laura Hoberecht, NMFS, Santa Rosa
Vicki Frey, California Department of Fish and Game, Eureka
Jane Hicks, Army Corps of Engineers, San Francisco
Marla Lafer, San Francisco Bay Regional Water Quality Control Board, Oakland
Comment Letter 1: United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service

1-1 This is a statement reiterating the project description, focusing on flooding of the Main Quarry Bowl to create a harbor after cessation of mining, and post-reclamation development of the Main Quarry Bowl.

1-2 The issue of availability of dredge spoils, and of alternative mitigation measures to avoid anticipated water quality problems associated with flooding the Main Quarry Bowl, are discussed in Master Responses 4 and 7 in Section 7.2 of this document. Regarding impacts on water quality, see Section 4.5, Hydrology and Water Quality, Impacts R4.5-5, R4.5-6, and R4.5-10. Regarding impacts on Essential Fish Habitat, see Section 4.3, Biological Resources, Impact R4.3-7.

The commenter’s point regarding creation of ambush opportunities for predatory fish is not, however, discussed in the Draft EIR, and so is addressed here. Physical structures, such as a pilings and jetties, as well as sudden bathymetric changes, modify physical habitat and aquatic cover that may attract various species of fish to the proposed marina in the quarry bowl. A number of predatory fish species, such as striped bass, may be attracted to the quarry bowl to ambush smaller special-status fish species such as juvenile salmonids listed under the federal Endangered Species Act (ESA) and species managed under federal Essential Fish Habitat (EFH) provisions. The behavioral response and attraction of these predatory fish species to the proposed marina, or the potential risk of increased predation mortality, cannot be quantitatively assessed. However, while the attraction of predatory fish to the marina may change the localized distribution of these individuals within the project area, the project is not anticipated to result in an increase in the overall abundance of predatory fish inhabiting San Pablo Bay. Moreover, special-status fish species may also use these artificial structures as cover to evade capture, and may in turn utilize these areas to increase their own foraging success. As such, the incremental changes in predator attraction and food web dynamics are expected to be relatively minor and this impact is considered less than significant.

1-3 The commenter expresses their preference for the Alternative Reclamation with Alternative Beneficial Use Alternative, and points out additional benefits of this Alternative not considered in the Draft EIR. Please refer to Master Response 4, Alternatives, for further discussion and detail regarding this alternative.

1-4 To address the commenter’s point regarding the potential for mercury to enter the flooded Main Quarry Bowl and to methylate and bioaccumulate, Impact 4.5-6 in Section 4.5, Hydrology and Water Quality, and Impact R4.3-7 in Section 4.3, Biological Resources, are clarified as indicated below. Note that this merely adds additional information to
impacts already identified as significant in the EIR and does not alter the conclusions regarding level of significance of these impacts. Therefore, per CEQA Guidelines §15088.5, this does not trigger the requirement to recirculate the Draft EIR. See also Master Response 7 in Section 7.2 of this document for further discussion of feasible mitigation measures for water quality and biological impacts associated with this aspect of the Amended Reclamation Plan.

**Impact R4.5-6: Poor water quality conditions could occur in the deep water within the flooded Main Quarry Bowl due to long residence times and stratification at depth. The proposed project may result in degradation of water quality within the deep areas of the harbor basin (Significant).**

As discussed in Impact R4.5-5, above, the surface water (surface to about 30 feet depth) in the proposed harbor would adequately circulate and surface water degradation would not be expected to occur. This impact focuses on the water in the harbor at depth beyond 30 feet that would extend to a depth of 400 feet; the harbor would be more than 300 feet deeper than the adjacent waters of San Pablo Bay. Circulation and flushing is crucial for oxygenating water and flushing pollutants. The deep water in the basin, 30 to 400 feet deep, may have a flushing time on the order of months (Moffatt & Nichol, 2004; CHE, 2007a). The long flushing times could cause stagnation and reduced oxygen with depth, which would adversely impact aquatic species. Furthermore, vertical mixing of the low oxygen, stagnant water with water nearer to the surface could degrade shallower, higher quality water. In addition to deep stagnation and reduced dissolved oxygen in the water, the harbor basin would become stratified due to differences in temperature and salinity (density) between the shallow and deep water. There may be some vertical exchange over certain water depths, but this would likely be small compared to the horizontal exchange in the surface due to tides.

In addition, it is likely that mercury-laden sediments will be brought into the flooded basin with the tide, and deposited on the bottom where, in the low dissolved oxygen environment, they will be subject to methylation. Methylated mercury may enter the aquatic food web, contributing to potential impacts to fish, piscivorous birds, and humans through bioaccumulation of methylmercury. This aspect of this impact is also discussed in Section 4.3, Biological Resources.

The water quality in deep water would be impacted due to stagnation and stratification. The significance criteria states that the project would result in a significant impact if it degrades water quality. The low-oxygen, stagnant water that is likely to occupy the deeper portions of the proposed harbor would be considered degraded and the harbor would be considered an impaired water body that could not support the beneficial uses. In this case the primary beneficial uses are aquatic habitat, which depends on oxygenated water. The impact is therefore considered significant.
Impact R4.3-7: Poor water quality in the deep water within the flooded Main Quarry Bowl could occur due to long residence times and stratification at depth. The proposed project may result in degradation of water quality within the deep areas of the harbor basin. This condition could result in impacts to special-status aquatic species (Significant).

As discussed under Hydrology and Water Quality Impacts 4.5-4 and 4.5-5 of this Draft EIR, the flooded Main Quarry Bowl would be approximately 400 feet deep, making it the deepest body of water in San Francisco Bay and San Pablo Bay. Water enclosed in a deep, small embayment does not circulate at the same rates as waters in the shallower San Francisco and San Pablo Bays. Circulation is crucial process replenishing dissolved oxygen in the water, distributing nutrients, and flushing pollutants. Analyses have shown that the surface water of the proposed harbor to an approximate depth of 30 feet would adequately circulate and surface water degradation would not occur in this surface layer (Moffatt & Nichol, 2004; CHE, 2007 – Appendix I). However, the deep water in the basin, 300 to 400 feet deep, may have a flushing time on the order of months (Moffatt & Nichol, 2004; CHE, 2007). The long flushing times could cause stagnation and reduced oxygen with depth, which would adversely impact aquatic species. Furthermore, vertical mixing of the low oxygen, stagnant water with water nearer to the surface could degrade shallower, higher quality water. In addition to stagnation and reduced dissolved oxygen in the deep water, the harbor basin would likely become stratified due to differences in temperature and salinity (density) between the shallow and deep water, which would contribute to decreased mixing. There may be some vertical exchange over certain water depths, but this would likely be small compared to the horizontal exchange in the surface due to tides. The water quality in the deep water would be impacted due to stagnation, stratification, and a potential build-up of pollutants.

In addition, it is likely that mercury-laden sediments will be brought into the flooded basin with the tide, and deposited on the bottom where, in the low dissolved oxygen environment, they will be subject to methylation. Methylated mercury may enter the aquatic food web, for example by being taken up by algae, contributing to potential impacts to fish, piscivorous birds, and humans through bioaccumulation of methylmercury. This aspect of this impact is also discussed in Section 4.5, Hydrology and Water Quality.

Low dissolved oxygen concentration and high pollutant concentrations in the deep water layers of the harbor would likely have deleterious effects on aquatic life. However, aquatic organisms residing in the San Francisco/San Pablo Bay region are adapted to relatively shallow waters and are unlikely to establish permanent habitats in the extreme depths of the proposed harbor. Nevertheless, water quality-related impacts to aquatic life could potentially occur if organisms enter the deep portion of the harbor, either intentionally or inadvertently, or if hydrologic
conditions result in the release or upwelling of degraded water to the surface layers, or if methylmercury enters the aquatic food web. This impact is significant.

1-5 Regarding potential impacts to Essential Fish Habitat and special status aquatic species, see the response to comment 1-2.

1-6 Regarding potentially feasible measures to mitigate anticipated poor water quality in the deep water of the flooded Main Quarry Bowl, see Master Response 7 in Section 7.2.

1-7 This comment reiterates the commenter’s preference for the Alternative Reclamation with Alternative Beneficial Use Alternative. For further discussion of this alternative, see Master Response 4 in Section 7.2.
Rachel Warner
Environmental Planner
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, CA  94903

Subject:  San Rafael Rock Quarry ARP and AQP Draft EIR

Dear Ms. Warner:

Bay Area Air Quality Management District (District) staff reviewed your agency’s Draft Environmental Impact Report (DEIR) for the San Rafael Rock Quarry (Quarry) Amended Reclamation Plan and Amended Surface Mining and Quarrying Permit (Project). We understand that the Amended Reclamation Plan describes the Quarry’s existing and proposed reclamation activities. The Project’s activities are proposed to end in 2024. The Amended Surface Mining and Quarrying Permit address the proposed conditions and limitations to mining operations that differ from the Quarry’s current permits. If the Project is approved, the Quarry may need to revise its operating permits with the District to reflect the proposed changes to the Quarry’s operations and reclamation activities.

The DEIR states that impacts R4.2-1 and R4.2-2 would result in significant and unavoidable air quality impacts, even after mitigation. The mitigation measures identified for these impacts appear to be practices already being implemented by the project prior to circulation of this DEIR. Therefore, these measures should not be considered mitigation for the proposed Project. It would also appear that the proposed project does not offer any project specific mitigation measures to reduce the identified significant impacts. The DEIR states on page 4.3-34 that other mitigation measures were considered and found to be not feasible. The DEIR should have provided the analysis that was conducted to determine the infeasibility of the other mitigation measures. The District and the public did not have an opportunity to determine the validity of the infeasibility conclusion. In addition, contrary to the DEIR text, emission offset credits can be used to mitigate the Project’s mobile source emissions and should be considered feasible mitigation measures.

We recommend that the Final EIR consider additional mitigation measures to further reduce criteria and toxic air pollutant emissions from this facility. Such measures could include but are not limited to: maintaining properly tuned engines; minimizing the idling time of diesel powered equipment to two minutes; using alternative powered construction equipment (i.e., natural gas, biodiesel, electric); using add-on control devices for Quarry owned and independent operator owned on-road trucks and off-road equipment such as diesel oxidation catalysts or particulate filters; limiting the operating hours of heavy duty equipment; and requiring that the tug boat fleet be upgraded by 2008 as a condition of approval. The Final EIR should consider
an offsite mitigation program to achieve contemporaneous emission reductions from sources offsite that are not required to reduce their emissions due to existing regulations, with an emphasis on emission reductions occurring near the project site. The Final EIR should provide justification for a finding that any of these potential strategies or measures are deemed infeasible.

The DEIR states that implementation of mitigation measures R4.2-3a-c will reduce greenhouse gas (GHG) emissions to a less than significant level. This conclusion relies heavily on mitigation measure R4.2-3c, which states that the applicant will develop a Quarry specific GHG reduction plan to meet the County’s GHG goals within one year of project approval. This GHG reduction plan should be part of the EIR process. Deferring development of the GHG reduction plan and subsequent approval of the plan by Marin County Community Development Agency does not allow for public input and evaluation of the adequacy of the plan to mitigate this project’s significant GHG emission impacts.

We recommend that the Quarry GHG reduction plan be developed as part of the DEIR process on this project and also be required to prioritize implementation of all feasible GHG reduction strategies on-site prior to allowing mitigation offsite. If offsite mitigation is required, we encourage Marin County to require that the Quarry invest in local offsite mitigation projects that will result in co-benefits (i.e., particulate matter reduction) to local residents currently adversely impacted by Quarry operations. We recommend that the Quarry quantify and report their annual GHG emissions to ensure that the emission reductions anticipated with the GHG reduction plan are verified and certified by an independent entity. The California Climate Action Registry is one of several GHG reporting organizations that can verify and certify GHG emission reductions.

Mitigation Measure R4.2-1g states that the applicant shall fuel on-site diesel-powered mobile equipment in reclamation activities with a minimum B-80 biodiesel or use other equipment and/or fuel that achieve equal reductions in emissions. The EIR should provide an analysis of the potential nitrogen oxide (NOx) emission increase associated with this mitigation measure and include additional mitigation measures for this project to offset any NOx increase.

Mitigation measure R4.2-3a states that the Quarry currently uses B-20 biodiesel for on-site mobile equipment; this measure should not be considered mitigation for the proposed Project since it is already being implemented. In addition, R4.2-3a states that the carbon dioxide (CO₂) produced by burning biodiesel is considered biogenic and part of the natural carbon cycle. This mitigation measure needs to clarify that only approximately 20% of the CO₂ emissions of burning B-20 biodiesel is considered to be biogenic. The Final EIR should identify the feedstock (e.g., local vs. imported) for the biodiesel to accurately describe the net GHG impacts.

The calculations for Table 4.2-5, Existing Emissions of Criteria Air Pollutants from Quarry Operations, contain estimated emissions of sulfur dioxide (SO₂) from tug boats of 60,821 lb/day. The EIR should also calculate the emission reductions that would occur if the tug boats were required to use CARB low sulfur diesel fuel. A feasible mitigation measure would require all tug boats accessing this facility to use low sulfur diesel fuel.
The calculations for Table 4.2-9 in Appendix C, Air Quality Calculations, contain calculations for a 1200 horsepower generator that does not appear to have a permit from the District. The EIR should explain whether the generator is subject to ARB registration requirements or District permits; and whether it is subject to any CARB Air Toxic Control Measure (ATCM). If the engine is subject to District permits, the proposed increase in diesel usage of 11,800 gal/yr would be considered a modification to the existing District permit and the engine would be subject to District Regulation 2, Rules 1, 2, and 5. In addition, the drills that are powered by diesel engines may require District permits depending on the size of the engines and the magnitude of the emissions of the engines.

The Federal law reference on page 4.2-3 should contain a discussion of the New Source Performance Standards and state whether any equipment used for the Project is subject to these standards.

The Final EIR should include the following corrections:

- Table 4.2-1 needs to be updated with the current State and federal ambient air quality standards and existing attainment status for the Bay Area. Current information can be found at the District’s website, http://www.baaqmd.gov/pln/air_quality/ambient_air_quality.htm.

- The last paragraph on page 4.2-19 incorrectly references Figure 4.2-2 as illustrating cancer risk. Figure 4.2-2 illustrates cancer risk from past operations, not current operations.

- The last paragraph on page 4.2-48 state, "School children exposure assumptions were based on eight hours/day, five days/week, 180 days/year over 14 years." This is a non-standard assumption. The Office of Environmental Health Hazard Assessment’s (OEHHA) health risk assessment guidelines recommend using 9 years for children’s exposure. We recommend using care when adjusting exposure for sources with an operating schedule concurrent with the presence of receptors. The EIR should include cancer risk results for students.

- Figure 4.2-6’s title needs to be revised to read “Chronic Risk,” as illustrated in the map, instead of “Incremental Risk.”

If you have any questions regarding these comments, please contact Sigalle Michael, Environmental Planner, at (415) 749-4683.

Sincerely,

Jean Roggenkamp
Deputy Air Pollution Control Officer

JR:SM
cc: BAAQMD Director Harold C. Brown, Jr.
Supervisor Susan L. Adams
Comment Letter 2: Bay Area Air Quality Management District

2-1 This comment restates in broad outline the descriptions of the projects.

2-2 A list of current permits and likely revisions required for project approval is included in Table 3-1 in Chapter 3, Project Description. This table notes that BAAQMD permits may need to be revised to reflect proposed reclamation activities and/or proposed changes in quarry operations.

2-3 Regarding the identification of measures already being implemented by the applicant, the CEQA Guidelines require that an EIR distinguish between those mitigation measures being proposed as part of a project, and those being added in the EIR (CEQA Guidelines, §15126.4 (a)(1)(A)). Regarding the commenter’s contention that there is no basis given for the determination of feasibility of additional mitigation measures, please refer to the “Level of Significance after Mitigation” discussion at the conclusion of the referenced impacts. Several of the mitigation measures suggested by the commenter were already specified in the Draft EIR, including Mitigation Measure R4.2-1f (maintaining properly tuned engines), and Mitigation Measure R4.2-1g (use of alternative fuels in construction equipment). Mitigation Measure R4.2-1h already limits idling time to five minutes; the commenter’s suggestion of setting an idling time limit of two minutes is inconsistent with the standard established by the California Air Resources Board (CARB): CARB promulgated its in-use idling airborne toxic control measure, effective February 1, 2005, which limits diesel truck idling to 5 minutes. Add-on control devices for Quarry-owned trucks and off-road equipment is considered unnecessary, as the Quarry has already upgraded all mobile equipment to USEPA Tier 3 standards (Mitigation Measure R4.2-1b); the County lacks the authority to impose such requirements on vehicles other than those owned by the Quarry. While the EIR does not limit hours of operation of equipment, it does limit annual production and hours of the day during which noise-generating activities may occur, and therefore indirectly limits equipment operation (see Mitigation Measure P4.6-6b); furthermore, the applicant proposes to limit offsite commercial truck traffic to 250 vehicle trips per day. Since SRRQ’s plans to upgrade their tug boat fleet to USEPA Tier 2 standards prior to the end of 2008 is stated in the Draft EIR as a mitigation measure (Mitigation Measure R4.2-1b), it will become a condition of approval (see Draft Mitigation Monitoring Measure R4.2-1).

In response to the statement from the BAAQMD that the emissions offset program can be applied to mobile emission sources, a new mitigation measure is added, as shown below. The applicant has reviewed and agrees to this mitigation measure.

The applicant has also stated their willingness not to conduct reclamation grading activities simultaneously with mining operations. See Master Response 1 in Section 7.2 of this document; this provision is also added below as a mitigation measure.
Impact R4.2-1: The proposed Amended Reclamation Plan would result in an increase in daily emissions of criteria air pollutants as a result of reclamation activities being conducted simultaneously with mining activities, instead of at the end of quarrying activities, as contemplated in the 1982 Amended Reclamation Plan. This increase in daily emissions would exceed the Bay Area Air Quality Management District-established significance thresholds for reactive organic gases, nitrogen oxides, carbon monoxide, and particulate matter equal to or less than 10 microns (Significant).

The proposed amended reclamation plan would result in reclamation activities for Phases 1, 2, 3, and part of Phase 4 being conducted during the remaining operational life of the Quarry, instead of at the end of quarrying activities, as contemplated in ARP82. These reclamation activities would result in an increase in daily emissions rates of criteria pollutants, including ozone precursors and PM-10 in an air basin that is designated as non-attainment with respect to state and federal ozone standards and state PM-10 standards. Appendix N of the Marin County Environmental Impact Review Guidelines identifies any project that would cause or contribute substantially to existing or projected air quality violations to have a significant impact on air quality.

Emissions resulting from reclamation activities would include fugitive particulate emissions (including PM-10 and PM-2.5) from earthmoving and disturbance and truck travel on unpaved Quarry roads, as well as criteria pollutants from the exhaust of trucks and equipment used in earthmoving. Reclamation activities would be separated into four phases with portions of the fourth and final phase being conducted after the end of mining operations. As indicated in the Project Description, each reclamation stage would occur over an approximately 5 year period. Additionally, SRRQ proposes to limit disturbance of neighbors by conducting reclamation grading activities only during an 8-10 week period during the dry season of each year.

Daily pollutant emissions resulting from phases 1 to 3 of reclamation were calculated based on emission factors published by the USEPA, BAAQMD and the South Coast Air Quality Management District and data sheets for these calculations are presented in Appendix C of this document, and are considered new emissions not contemplated in ARP82, since that plan contemplated no reclamation activities during the operational life of the Quarry. Because a portion of the grading conducted under Phase 4 would occur after the cessation of mining, phase 4 reclamation activities are considered a change from ARP82 only to the extent that they differ from those proposed in ARP82. Consequently, Phase 4 emissions are addressed separately in the following impact statement.

The emissions from Phases 1 through 3 are presented in Table 4.2-10 and assume the cut and fill volumes presented in Table 3-3 and activity over an eight week period for each of five consecutive years. These emission estimates include reclamation...
activities not previously proposed under ARP82 including: mixing of pond fines with overburden material in Phase 1, construction of the berm in the NE Quadrant in Phase 1, construction of the surcharge berm in the NW Quadrant in Phase 2, and the stockpiling of topsoil in the NW Quadrant in all phases.

The increased daily emissions shown in Table 4.2-10 indicate that for reclamation Phases 1, 2 and 3, the increase in daily emissions of ROG, NOx, PM-10 and CO would all be greater than the significance standards established by the BAAQMD. Consequently, the proposed ARP would be considered to result in a significant air quality impact resulting from increases in daily emission rates as compared to ARP82.

**Mitigation Measures Proposed as Part of the Project**

**Mitigation Measure R4.2-1a:** The project applicant has recently initiated the use of biodiesel fuel in all quarry rolling stock. Biodiesel in the only alternative fuel for which a detailed emissions evaluation has been submitted to the United States Environmental Protection Agency (USEPA). The effectiveness of emission reduction resulting from the use of biodiesel is dependant upon the percent of biodiesel contained in the mixture (USEPA, 2002). The most common blend, and that currently used at SRRQ, is a 20 percent biodiesel and 80 percent conventional diesel (B-20). B-20 will reduce particulate and CO emission by approximately 12 percent, and reduce hydrocarbon emissions by approximately 20 percent. Use of biodiesel may increase or decrease NOx emissions (McCormick et al, 2006).

**Mitigation Measure R4.2-1b:** SRRQ has already upgraded SRRQ’s entire fleet of off-road diesel equipment to USEPA Tier 3 standards, ahead of regulatory requirements that at least 10 percent of the fleet be upgraded each year. SRRQ also plans to upgrade its tug boat fleet to Tier 2 standards prior to the end of 2008.

**Mitigation Measure R4.2-1c:** SRRQ already implements several measures to control dust. These will be continued under the project:

- All trucks leaving the Quarry shall be washed down, including the undercarriage, prior to entering Point San Pedro Road (except trucks transporting asphalt). The wash down and adjoining areas shall be paved to minimize tracking of dust and dirt. Point San Pedro Road will be swept up to two times per day, except on rain days, when no sweeping will occur, subject to the approval of the City of San Rafael;

- The Quarry shall maintain all required erosion control measures and stormwater management plans, and shall keep current and comply with all permits required by the Regional Water Quality Control Board;

- The Quarry shall maintain all dust abatement devices, and shall keep current and comply with all permits required by the BAAQMD.
Mitigation Measures Identified in This Report

Mitigation Measure R4.2-1d: The project sponsor shall be required to continue existing emission reduction practices, including use of alternative fuels, use of low-emission diesel equipment, and dust abatement measures.

Mitigation Measure R4.2-1e: The applicant shall implement additional dust abatement measures identified by BAAQMD as feasible dust control, during all reclamation grading activities:

- Cover all trucks hauling soil, sand, and other loose materials as a part of reclamation activities, or require such trucks to maintain at least two feet of freeboard between the top of the material and top of truck;
- Pave, apply water at a minimum three times daily in dry weather, or apply non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at the Quarry;
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at the Quarry;
- Hydroseed, apply non-toxic soil stabilizers, or water to inactive reclamation areas (previously graded areas inactive for ten days or more);
- Limit traffic speeds on unpaved roads to 15 miles per hour;
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways;
- Replant vegetation in disturbed areas as soon as the growing seasons dictates;
- Install wind breaks or plant trees/vegetative wind breaks at the windward sides of the reclamation areas until such time as the vegetation is established;
- Suspend reclamation-related excavation and grading activities when wind (as instantaneous gusts) exceeds 25 miles per hour; and
- Limit the area subject to reclamation-related excavation, grading and other construction activity at any one time.

Mitigation Measure R4.2-1f: The project applicant shall keep all off-road equipment well-tuned and regularly serviced to minimize exhaust emissions, and shall establish a regular and frequent check-up and service/maintenance program for all operating equipment at the Quarry.

Mitigation Measure R4.2-1g: To further reduce emissions from off-road diesel equipment, the applicant shall fuel on-site diesel-powered mobile equipment used in reclamation activities with a minimum 80 percent biodiesel blend (B-80) or use other equipment and/or fuel that achieves the same reduction in particulate (PM-10) and CO emissions.
Mitigation Measure R4.2-1h: Off-road diesel equipment operators shall be required to shut down their engines rather than idle for more than 5 minutes, unless such idling is necessary for proper operation of the vehicle.

Mitigation Measure R4.2-1i: The applicant will acquire BAAQMD off-site emission offset credits in sufficient quantity to reduce emissions from reclamation grading to levels below significance thresholds.

Mitigation Measure R4.2-1j: The applicant will limit on-site mining operations on days on which reclamation grading activities are performed, such that total emissions from the site are not increased above significance thresholds. To ensure the effectiveness of this measure, the Quarry will be required to maintain and report to the BAAQMD and the County Public Works Department a record of reclamation and operations activities, with an estimate of emissions from each. Since emissions related to reclamation grading were not quantified in ARP82, and since simultaneous reclamation and mining was not contemplated in ARP82, the baseline for combined emissions is the current level of emissions for mining operations only, as shown in Table 4.2-5. The limit for combined emissions from mining and reclamation will therefore be the current emissions levels from mining operations plus the BAAQMD’s threshold values for criteria pollutants, as shown in Table 4.2-10.1.

### TABLE 4.2-10.1
**ALLOWABLE EMISSIONS LEVELS FOR SIMULTANEOUS MINING AND RECLAMATION**
*(TABLE IS NEW IN THIS FINAL EIR)*

<table>
<thead>
<tr>
<th>Emission Source</th>
<th>CO</th>
<th>ROG</th>
<th>NOx</th>
<th>PM-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Existing Quarry Operational Emissions (from Table 4.2-5)</td>
<td>410</td>
<td>72</td>
<td>1,797</td>
<td>464.4</td>
</tr>
<tr>
<td>BAAQMD Significance Criteria for Increased Emissions</td>
<td>550</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Maximum Allowable Emissions from Combined Operations and Reclamation Activities</td>
<td>&lt;960</td>
<td>&lt;152</td>
<td>&lt;1,877</td>
<td>&lt;544.4</td>
</tr>
</tbody>
</table>

*SOURCE: Table 4.2-5, BAAQMD*

Mitigation Monitoring and Reporting

Draft Mitigation Monitoring Measure R4.2-1: The Marin County Public Works Department will be responsible for monitoring implementation of all the above mitigation measures, which will become conditions of approval of the project. Monitoring will occur during periodic inspections of the Quarry. The BAAQMD is the administrator of the emissions credit program, and will be responsible for ensuring compliance with the terms of participation in this program.
Level of Significance after Mitigation

Given current technologies, conversion of diesel equipment to USEPA Tier 3 standards, which SRRQ has already implemented for on-site mobile diesel equipment used in mining operations, would achieve a maximum NO\textsubscript{x} reduction of only about 50 percent. It is therefore unlikely that the Mitigation Measures 4.2-1b, d, f, and h identified above could achieve an 85-90 percent reduction in NO\textsubscript{x} emissions, the level necessary to reduce emissions from these sources to a level below the BAAQMD’s 80 pounds per day significance threshold. In order to reduce NO\textsubscript{x} emissions to below significance, it will be necessary for the Quarry to implement either Mitigation Measure R4.2-1i or j.

Use of B-20 biodiesel (Mitigation Measure R4.2-1a) would reduce emissions of ROG to less than significance thresholds of 80 pounds per day, reduce CO emissions, and marginally reduce equipment exhaust emissions of PM-10. Increasing the biodiesel blend to B-80 or use of other alternative fuels (Mitigation Measure R4.2-1g) would further reduce PM-10 emissions from mobile equipment: use of B-80 results in approximately 40 percent reduction in PM-10 and CO, and approximately 50 percent reduction in ROG emissions (McCormick et al, 2006); CO emissions would be reduced to less than significant. Use of higher biodiesel blends may, however, increase NO\textsubscript{x} emissions.

Conditions of the BAAQMD permit apply to stationary sources that would presumably not be involved in proposed reclamation processes. Therefore, no emissions reductions would be realized from implementation of these conditions relative to the calculated emissions resulting from the ARP.

Implementation of dust control measures (Mitigation Measures R4.2-1c and R4.2-1e) is expected to result in a decrease in fugitive dust emissions of 70%. Even with this reduction, daily PM-10 emissions during reclamation grading would exceed significance thresholds in each reclamation phase. In order to reduce PM-10 emissions to below significance, it will be necessary for the Quarry to implement either Mitigation Measure R4.2-1i or j.

Other mitigation measures were considered, including use of emission offset credits. These were found not to be feasible; however, the BAAQMD emissions banking program can be used only to offset stationary source emissions.

Therefore, even with the implementation of all feasible mitigation measures, PM-10 and NO\textsubscript{x} emissions will remain significant and should be considered an unavoidable consequence of project approval. The combination of Mitigation Measures R4.2-1a-h, with Mitigation Measures R4.2-1i and j, will reduce this impact to less than significant.
Impact R4.2-2: Phase 4 of the 2004 Amended Reclamation Plan would include cut and fill activities that were not included in 1982 Amended Reclamation Plan. These new reclamation activities would result in emissions of criteria pollutants that would exceed Bay Area Air Quality Management District significance thresholds (Significant).

Proposed Phase 4 reclamation includes several activities that were not contemplated in ARP82. These activities include the demolition of McNear’s Brickyard buildings, placement of fill to raise McNear’s Brickyard site, removal of the surcharge berm, and removal of the NE Quadrant berm and the pond fines stockpile. As shown in Table 3-3 in Chapter 3, Project Description, these activities would require the cut and fill of approximately 865,500 cubic yards of soil.

Emissions resulting from Phase 4 reclamation activities would include fugitive particulate emissions (including PM-10 and PM-2.5) from earthmoving and disturbance and truck travel on unpaved Quarry roads, as well as criteria pollutants from the exhaust of trucks and equipment used in earthmoving. As with the first three reclamation phases, Phase 4 reclamation would occur over an approximately five-year period (see Table 3-2 in Chapter 3, Project Description). SRRQ proposes to limit disturbance of neighbors by conducting reclamation grading activities only during an 8-10 week period during the dry season of each year.

Daily pollutant emissions resulting from Phase 4 reclamation not contemplated in ARP82 were calculated based on emission factors published by the USEPA, BAAQMD and the South Coast Air Quality Management District and data sheets for these calculations are presented in Appendix C of this document.

The increased daily emissions shown in Table 4.2-11 indicate that in Phase 4 reclamation, the increase in daily emissions of ROG, NOx, PM-10 and CO would all be greater than the significance standards established by the BAAQMD. Appendix N of the Marin County Environmental Impact Review Guidelines identifies any project that would cause or contribute substantially to existing or projected air quality violations as having a significant impact on air quality. Consequently, Phase 4 of the proposed ARP would be considered to result in a significant air quality impact resulting from increases is daily emission rates as compared to those calculated for this EIR for ARP82.

Mitigation Measures Proposed as Part of the Project

Mitigation Measure R4.2-2a: Mitigation measures R4.2-1a, b, and c apply to Phase 4 as well.

Mitigation Measures Identified in this Report

Mitigation Measure R4.2-2b: Implement Mitigation Measures R4.2-1d through R4.2-1h for Phase 4.
Mitigation Monitoring and Reporting

Draft Mitigation Monitoring Measure R4.2-2: The Marin County Public Works Department will be responsible for monitoring implementation of all the above mitigation measures. This will occur during periodic inspections of the Quarry.

Level of Significance after Mitigation

The increase in NOx emissions from the off-road equipment use and on-site truck travel would be 561 pounds per day (Table 4.2-11) from new Phase 4 reclamation activities. Given current technologies, converting or modifying diesel equipment could achieve a maximum NOx reduction of only about 50 percent. It is therefore unlikely that either Mitigation Measure R4.2-1i or R4.2-1j will be necessary to the mitigation measures identified above could achieve an 85-90 percent reduction in NOx emissions, the level necessary to reduce emissions from these sources to a level below the BAAQMD’s 80 pounds per day significance threshold.

The project applicant has already converted all rolling stock using the facility to B-20 biodiesel. Use of biodiesel would reduce emissions of ROG to less than significance thresholds of 80 pounds per day and marginally reduce equipment exhaust emissions of PM-10. Increasing the use of biodiesel to B-80 (Mitigation Measure R4.2-1g) would further reduce diesel particulates and CO emissions (by about 40%, compared to conventional diesel; McCormick et al, 2006), but not enough to reduce CO beneath the significance threshold.

Implementation of dust control measures (Mitigation Measures R4.2-1c and R4.2-1e) is expected to result in a decrease in fugitive dust emissions of about 70 percent, compared to emissions without dust control. Even with this reduction, PM-10 emissions would exceed significance thresholds in Phase 4 of reclamation. In order to reduce PM-10 emissions to below significance, it will be necessary for the Quarry to implement Mitigation Measures R4.2-1i or j for Phase 4 reclamation grading as well.

Other mitigation measures were considered, including use of emission offset credits. These were found not to be feasible, however: the BAAQMD emissions banking program can be used only to offset stationary source emissions.

Therefore, even with the implementation of all feasible mitigation measures, CO, PM-10, and NOx emissions will remain significant and should be considered an unavoidable consequence of project approval.

The application of Mitigation Measures R4.2-1a-h, with Mitigation Measures R4.2-1i and j, to Phase 4 reclamation grading will reduce this impact to less than significant.

The comment regarding reduction of greenhouse gas emissions from biodiesel blends is already considered in the Draft EIR in Mitigation Measure R4.2-3a; see, however, the response to the following comment.

2-5 NOx implications of biodiesel use are discussed in a report referenced in the Draft EIR (McCormick et al, 2006) from the National Renewable Energy Laboratory titled, “Effects of Biodiesel Blends on Vehicle Emissions.” The following excerpt is from the report’s executive summary:

Biodiesel is a fuel-blending component produced from vegetable oils, animal fats, or waste grease by reaction with methanol or ethanol to produce methyl or ethyl esters. Pure biodiesel contains approximately 10 weight percent oxygen. It is typically blended with petroleum diesel at levels up to 20% (B20). The presence of oxygen in the fuel leads to a reduction in emissions of hydrocarbons (HC) and toxic compounds, carbon monoxide (CO), and particulate matter (PM) when biodiesel blends are burned in diesel engines. These reductions are robust and have been observed in numerous engine and vehicle testing studies. Engine dynamometer studies reviewed in a 2002 report from EPA show a 2% increase in oxides of nitrogen (NOx) emissions for B20. This perceived small increase in NOx is leading some state regulatory agencies to consider banning the use of biodiesel. Therefore, the issue of NOx emissions is potentially a significant barrier to expansion of biodiesel markets.

The objective of this study was to determine if testing entire vehicles, vs. just the engines, on a heavy-duty chassis dynamometer provides a better, more realistic measurement of the impact of B20 on regulated pollutant emissions… We reviewed more recently published engine testing studies and found an average change in NOx for all recent B20 studies of -0.6%±2.0% (95% confidence intervals are used throughout this report). Restricting the average to recent studies of B20 with soy biodiesel yields an average NOx impact of 0.1%±2.7%. The EPA review also includes summary of a smaller vehicle testing dataset that shows no significant impact of biodiesel on NOx. We reviewed several recently published vehicle (chassis) testing studies and found an average change in NOx of 1.2%±2.9% for B20 from soy-derived biodiesel. In addition, we reviewed three portable emissions measurement system (PEMS) studies that do not find NOx to increase.

Eight heavy-duty diesel vehicles were tested, including three transit buses, two school buses, two Class 8 trucks, and one motor coach. Four met the 1998 heavy-duty emissions requirement of 4 g/bhp-h NOx and four met the 2004 limit of 2.5 g/bhp-h NOx+HC. Driving cycles that simulate both urban and freeway driving were employed. Each vehicle was tested on a petroleum-derived diesel fuel and on a 20 volume percent blend of that fuel with soy-derived biodiesel. On average B20 caused PM and CO emissions to be reduced by 16% to 17% and HC emissions to be reduced by 12% relative to petroleum diesel. Emissions of these three pollutants nearly always went down, the exception being a vehicle equipped with a diesel particle filter that showed very low emissions of PM, CO, and HC; and there was no significant change in emissions for blending of B20. The NOx impact of B20 varied with engine/vehicle technology and test cycle ranging from -5.8% to +6.2%. A preliminary examination of
real-time NOx emission data did not reveal any consistent reason for the wide range. On average NOx emissions did not change (0.6%±1.8%). If the results of this study are combined with the soy B20 chassis results from Tables 4 and 5 (recently published studies), the average change in NOx is 0.9%±1.5%, based on data for 15 vehicles.

Based on the studies reviewed and new data reported here, there does not appear to be a discrepancy between engine and chassis testing studies for the effect of B20 on NOx emissions. Individual engines may show NOx increasing or decreasing, but on average there appears to be no net effect, or at most a very small effect on the order of ±0.5%. The small apparent increase in NOx reported for engine-testing results in EPA’s 2002 review occurred because the dataset was not adequately representative of on-highway engines. In particular, nearly half of the NOx observations included in the review were for engines from a single manufacturer (DDC). Newer engine and chassis studies, which on average show no B20 effect on NOx, are not representative samples either. However, considering all of the data available, we conclude that B20 has no net impact on NOx.

(McCormick et al, 2006; emphasis added)

The same study also states that, “in most cases,” NOx emissions increase with use of B100. However, this study focuses primarily on the effects of B20, and does not come to a definitive conclusion regarding higher biodiesel blends.

With regards to feedstocks used for biodiesel, and their relative carbon footprint, CARB is currently performing lifecycle analyses of biodiesel and other so-called “low-carbon fuels” as part of the AB32 regulatory process. Preliminary results indicate that biodiesel derived from soy beans grown conventionally (i.e., with synthetic pesticides and fertilizers) in the Midwest and used in California has a total “well to wheel” greenhouse gas emission rate about one third that of petroleum diesel: GHG emissions associated with biodiesel are calculated to be 35.26 grams of CO2 equivalent per megajoule of energy content, versus 99.4 for California ultra-low sulfur diesel (CARB, 2008a, 2008b). Biodiesel derived from used vegetable oil can be expected to have substantially lower greenhouse gas emissions than soy-derived biodiesel, since about half of the GHG emissions associated with use of soy-derived biodiesel is from farming soy beans and extracting the oil from the beans (CARB, 2008b). This information has been added as a footnote to Mitigation Measure R4.2-3a in Section 4.2, Air Quality.

The San Francisco Bay Area Air Basin is in attainment for the state and federal ambient air quality standards for SO2 and has not experienced a violation of the state or federal ambient SO2 standards in the past 18 years. The BAAQMD CEQA Guidelines do not identify a significance threshold relative to emissions of SO2 or other pollutants for which the basin is in attainment. Barge (tug boat) emissions of SO2 are distributed throughout the Bay and Delta and do not represent a stationary source where SO2 concentrations would accumulate. Therefore SO2 emissions are not identified in the Draft EIR as a significant impact and mitigation of SO2 emissions is not required under CEQA.
2-7 The portable generator does not operate at the SRRQ facility, but is owned by the facility, and so was included in the emissions inventory. The portable generator has obtained (date April 1, 2006) the necessary air quality permits from the BAAQMD.

2-8 To account for changes to air quality standards and associated attainment status which occurred over the period between preparation of the Draft EIR and preparation of the Final EIR, Table 4.2-1 is amended as follows:

### TABLE 4.2-1

**STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging Time</th>
<th>(State) SAAQS(^a)</th>
<th>(Federal) NAAQS(^b)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standard</td>
<td>Attainment Status</td>
<td>Standard</td>
</tr>
<tr>
<td></td>
<td>0.09 ppm</td>
<td>N</td>
<td>0.08 ppm</td>
</tr>
<tr>
<td>Ozone</td>
<td>8 hour</td>
<td>0.07 ppm</td>
<td>0.075 ppm</td>
</tr>
<tr>
<td></td>
<td>1 hour</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>8 hour</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>1 hour</td>
<td>20 ppm</td>
<td>35 ppm</td>
</tr>
<tr>
<td></td>
<td>8 hour</td>
<td>9.0 ppm</td>
<td>9 ppm</td>
</tr>
<tr>
<td>Nitrogen Dioxide</td>
<td>1 hour</td>
<td>0.18 ppm</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>NA</td>
<td>0.053 ppm</td>
</tr>
<tr>
<td></td>
<td>1 hour</td>
<td>0.30 ppm</td>
<td>A</td>
</tr>
<tr>
<td>Sulfur Dioxide</td>
<td>1 hour</td>
<td>0.25 ppm</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>24 hour</td>
<td>0.04 ppm</td>
<td>0.14 ppm</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>NA</td>
<td>0.03 ppm</td>
</tr>
<tr>
<td>Particulate Matter (PM10)</td>
<td>24 hour</td>
<td>50 µg/m(^3)</td>
<td>150 µg/m(^3)</td>
</tr>
<tr>
<td></td>
<td>Annual(^c)</td>
<td>20 µg/m(^3)</td>
<td>NA 15 µg/m(^3)</td>
</tr>
<tr>
<td>Fine Particulate Matter (PM2.5)</td>
<td>24 hour</td>
<td>NA</td>
<td>35 µg/m(^3)</td>
</tr>
<tr>
<td></td>
<td>Annual(^d)</td>
<td>12 µg/m(^3)</td>
<td>15 µg/m(^3)</td>
</tr>
<tr>
<td>Sulfates</td>
<td>24 hour</td>
<td>25 µg/m(^3)</td>
<td>NA</td>
</tr>
<tr>
<td>Lead</td>
<td>30 day</td>
<td>1.5 µg/m(^3)</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Quarter</td>
<td>NA</td>
<td>1.5 µg/m(^3)</td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>1 hour</td>
<td>0.03 ppm</td>
<td>U</td>
</tr>
<tr>
<td>Visibility-Reducing Particles</td>
<td>8 hour</td>
<td>see note (^d)</td>
<td>A</td>
</tr>
</tbody>
</table>

NOTES: A = Attainment; N = Nonattainment; U = Unclassified; NA = Not Applicable; ppm = parts per million; µg/m\(^3\) = micrograms per cubic meter.

\(^a\) SAAQS = state ambient air quality standards (California). SAAQS for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 hour and 24 hour), nitrogen dioxide, particulate matter, and visibility-reducing particles are values that are not to be exceeded. All other state standards shown are values not to be equaled or exceeded.

\(^b\) NAAQS = national ambient air quality standards. NAAQS, other than ozone and particulates, and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the three-year average of the 4th highest daily concentration is 0.08 ppm or less. The 24-hour PM10 standard is attained when the three-year average of the 99th percentile of monitored concentrations is less than the standard. The 24-hour PM2.5 standard is attained when the three-year average of the 98th percentile is less than the standard.

\(^c\) State standard = annual geometric mean; national standard = annual arithmetic mean.

\(^d\) Statewide visibility-reducing particle standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

2-9  The figure labeled as 4-2-2 in the Draft EIR (appearing on page 4.2-20), is not the correct figure. Please see the correct figure in Section 4.2, Air Quality, in Volume I.

2-10  The Draft EIR incorrectly stated the exposure duration for school children at 14 years for 8 hours per day. The guidance value of 9 years for 10 hours per day was correctly used in the HRA. The text on pages 4.2-48 and 4.2-49 in Section 4.2, Air Quality, is corrected to reflect this value:

**Exposure Assumptions**

The exposure assumptions used to calculate health risks include exposure frequency, exposure time, exposure duration and averaging time. Each type of receptor considered in the HRA has its own unique set of exposure assumptions. For example, the HRA assumes a 70-year, 24-hour/day, 350 days/year exposure duration to calculate carcinogenic effects for residents. This exposure duration is equivalent to residents being present outdoors at their home seven days a week for 50 weeks/year (or about 96 percent of the time) with approximately 15 days spent away from home. Potential health impacts to an offsite worker will vary depending on the worker’s schedule and the operating hours of the facility. Offsite workers are assumed to work eight hours/day, five days/week, 49 weeks/year, over a 40-year schedule. School children exposure assumptions were based on eight ten hours/day, five days/week, 180 days/year over 14 nine years. School teacher exposure assumptions were based on eight ten hours/day, five days/week, 180 days/year over 40 years. Individual body weights and breathing rates were based on OEHHA guidance. Of note, no off-site workers were included in the analysis, since using exposure duration factors for residential receptors is more conservative than the factors used for off-site workers.

2-11  The title of the figure labeled as 4-2-6 in the Draft EIR (appearing on page 4.2-54), is in error. The correct title of the figure is **Figure 4.2-6: Incremental Chronic Risk: Toxic Air Contaminant Emissions of the Combined Projects**. Please see corrected figure in Section 4.2, Air Quality, in Volume I.
April 16, 2008

Tim Haddad, Environmental Coordinator
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, California 94903-4157

SUBJECT: Notice of Completion of Draft Environmental Impact Report for the San Rafael Rock Quarry Amended Quarry Permit and Amended Reclamation Plan; SCH #’s 2007082097 and 2005102122; BCDC Inquiry File No. MR.SR.7128.1

Dear Mr. Haddad:

Thank you for requesting the Commission’s comments on the draft Environmental Impact Report (EIR) for the San Rafael Rock Quarry Amended Quarry Permit and Amended Reclamation Plan, dated February, 2008 and received in our office on February 19, 2008. A portion of the proposed project must be authorized by a permit from the San Francisco Bay Conservation and Development Commission (“BCDC” or “Commission”). Although the Commission itself has not reviewed the draft EIR, the Commission’s staff has reviewed the draft EIR and is submitting its comments regarding the project. The staff comments are based on the McAteer-Petris Act, the Commission’s San Francisco Bay Plan (Bay Plan), the Commission’s federally-approved management program for the San Francisco Bay, and the federal Coastal Zone Management Act (CZMA). The Commission will rely partly on the EIR prepared by the lead agency when it considers the project.

Commission permits are required for construction, changes of use, dredging, and dredged material disposal within its area of jurisdiction. Permits are issued if the Commission finds the activities to be consistent with the McAteer-Petris Act and the findings and policies of the San Francisco Bay Plan. In addition to any needed permits under its state authority, federal actions, permits and grants that affect the Commission’s jurisdiction are subject to review by the Commission, pursuant to the federal Coastal Zone Management Act (CZMA), for their consistency with the Commission’s federally-approved management program for the Bay. It appears that some of the proposed project would occur within the Commission’s jurisdiction and would require Commission authorization.

On January 10, 2005, Will Travis, the Executive Director of the Commission transmitted a letter to Mr. Eric Stegler of the Marin County Department of Public Works, with copies sent to Supervisor Susan L. Adams, James Flageollet, Marin County Counsel, and Tim Haddad. The letter contained a list of issues that should be addressed by an environmental study for a marina to be developed as part of site reclamation. We feel that the EIR does not adequately respond to
many of the items addressed in the letter, although we understand that this document is intended to address the potential impacts of continued quarry operations and implementation of the reclamation plan, and that the specific details and impacts of any future development would be addressed by a future Master Plan EIR. Regardless, we feel that the proposed amended quarry permit and amended reclamation plan are not consistent with the Commission’s laws and policies as outlined below.

**Jurisdiction and Proposed Project.** The Commission’s jurisdiction includes all tidal areas of the Bay up to the line of mean high water and the inland edge of marsh vegetation (up to five feet above mean sea level) in marshlands, all areas formerly subject to tidal action that have been filled since September 17, 1965, the “shoreline band,” which extends 100 feet inland from and parallel to the Bay shoreline, and “certain waterways” as specified in Section 66610 of the McAteer-Petris Act up to the mean high water or the inland edge of marsh vegetation (up to five feet above mean sea level) in marshlands. The Commission has no shoreline band jurisdiction on certain waterways.

At the proposed project site, the Commission has Bay jurisdiction around the perimeter of the property up to the line of mean high water, and shoreline band jurisdiction 100 feet inland of mean high water line. Currently, the portion of the property within the Commission’s jurisdiction includes the docks on the east end of the property, and the 100-foot shoreline band. The portion of the proposed project that would be constructed within the Commission’s jurisdiction would include the channel and jetties that would form the entrance to the basin, and any other work within the 100-foot shoreline band. Although the quarry pit is not currently within the Commission’s Bay jurisdiction, if the project were constructed, the entrance channel and the marina basin would become Bay jurisdiction immediately upon inundation and any future work within the basin (such as constructing marina berthing facilities) would be considered Bay fill and require Commission authorization. Similarly, if the diked marshland in the northwest quadrant of the property were opened to tidal action, this area would be within the Commission’s Bay jurisdiction.

**Bay Plan Policies on Water Quality and Water Surface Area and Volume.** The amended quarry permit and amended reclamation plan would authorize mining the quarry to a depth of 400 feet (150 feet deeper than currently authorized), after which the quarry pit would be flooded with Bay water via an excavated channel. The EIR acknowledges that as a result of the flooding, “[p]oor water quality conditions could occur in the deep water within the flooded Main Quarry Bowl due to long residence time and stratification at depth. The proposed project may result in degradation of water quality within the deep areas of the harbor basin...The low-oxygen, stagnant water that is likely to occupy the deeper portions of the proposed harbor would be considered an impaired water body that could not support...the primary beneficial use...aquatic habitat.” This impact is considered Significant and Unavoidable, with no mitigation measures proposed. This impact is inconsistent with *San Francisco Bay Plan* Policies for water quality, which state in part that “Water quality in all parts of the Bay should be maintained at a level that will support and promote the beneficial uses of the Bay.” Similarly, the *San Francisco Bay Plan* Policies for Water Surface Area and Volume state in part that “[t]he surface area of the Bay and the total volume of water should be kept as large as possible in order to maximize active oxygen interchange, vigorous circulation, and effective tidal action...water circulation in the Bay should be maintained, and improved as much as possible.” Although the proposed marina
creation appears consistent with Water Surface Area and Volume policies because the surface area of the Bay would be increased, the anticipated lack of water circulation and resulting water quality impacts, which would in turn impact Bay fish and wildlife, are clearly inconsistent with the San Francisco Bay Plan policies. The approval of the amended quarry permit and reclamation plan would knowingly allow the creation of a deep, stagnant pool of water with very poor water quality.

Bay Plan Policies on Subtidal Areas and Bay Plan Policies on Tidal Marshes and Tidal Flats. The amended reclamation plan would allow the formation of a flooded basin several hundred feet deeper than the surrounding areas of San Pablo Bay. We are concerned that such a deep basin could create a sediment sink that would draw suspended sediment out of Bay waters that are vital for maintaining mudflat and subtidal habitats. As stated in the Findings on Tidal Marshes and Tidal Flats in the San Francisco Bay Plan, "sedimentation is an essential factor in the creation, maintenance and growth of tidal marsh and tidal flat habitat. However, scientists studying the Bay estimate that sedimentation will not be able to keep pace with accelerating sea level rise." The Tidal Marsh and Tidal Flat policies further state that "[a]ny proposed fill, diking, or dredging project should be thoroughly evaluated to determine the effect of the project on tidal marshes and tidal flats, and designed to minimize, and if feasible, avoid any harmful effects." Further, the San Francisco Bay Plan Policies on Subtidal Areas state that "[a]ny proposed filling or dredging project in a subtidal area should be thoroughly evaluated to determine the local and Bay-wide effects of the project on...tidal hydrology and sediment movement...and the Bay’s bathymetry." The draft EIR does not discuss the potential for the basin to act as a sediment sink and therefore, without further study, the proposed amended quarry permit and reclamation plan are inconsistent with San Francisco Bay Plan Policies on Subtidal Areas and San Francisco Bay Plan Policies on Tidal Marshes and Tidal Flats.

Bay Plan Policies on Priority Use Areas. As discussed in the EIR, a portion of the property along the eastern shoreline is located within a waterfront park, beach priority use area as designated by the San Francisco Bay Plan. Actions proposed for this area include the entrance channel for the proposed flooded basin. As stated in the EIR, any development proposed in the priority use area would have to be consistent with all applicable San Francisco Bay Plan policies. In particular, these non-tidal areas would need to be developed as a park for Bay-oriented recreation.

Thank you for your consideration of these issues. Please contact me at 415/352-3619 or erinb@bcdo.ca.gov if you have any questions.

Sincerely,

[Signature]

ERIN BOMKAMP
Coastal Analyst

EB/gg

cc: State Clearinghouse
The Honorable Susan L. Adams, Supervisor, First District
Vicki Frey, California Department of Fish and Game
January 10, 2005

Mr. Eric Stegler  
Marin County Department of Public Works  
Marin County Civic Center  
3501 Civic Center Drive  
San Rafael, California 94903

SUBJECT: BCDC Inquiry File No. MR.SR.7128.1

Dear Mr. Stegler:

I am responding to Supervisor Adams’s January 3, 2005 letter regarding the proposed reclamation plan for the San Rafael Rock Quarry. She asked that we provide the County with a list of issues that we believe should be addressed in an environmental study for a marina to be developed as part of reclaiming the site once quarrying activities are completed.

First, the site is not designated for any priority use in the San Francisco Bay Plan. Thus, the Commission has no legal authority over the land use that is to occur on the site. Under State law, the County must determine the appropriate land use for the property as part of its General Plan process. From a broad land use perspective, I would imagine that the County would be interested in how the proposed land use(s) might affect adjacent, regionally important land uses at local and state park properties to the north and the Marin Islands National Wildlife Refuge and State Ecological Reserve to the south.

Second, we understand that the property owner is considering opening parts of its quarry pond(s) to tidal action and constructing a marina in the newly created basin. While making the Bay larger as a result of flooding the basin certainly would help to achieve a variety of policy goals of the Commission, such action might raise issues that would have to be addressed in any environmental study of such action. A preliminary list of issues follows:

1. **Water Quality.** The potential for release of contaminants that may exist in the quarry pond(s) when they are opened to tidal action should be addressed. Further, the potential release of contaminants in any Bay bottom material that may need to be dredged to provide boating access to the tidal basin needs to be understood. Finally, the potential for release of pollution from the construction, maintenance and use of the marina itself (i.e., boat repair activities, fueling activities, liquid and solid wastes from vessels etc.) needs to be addressed.
2. Fish and Wildlife. The potential impacts to fish and wildlife resources as a result of the construction, maintenance and operation of the marina should be studied, including effects on any nearby endangered species; nesting, roosting and rafting birds; anadromous fish; and commercial fisheries.

3. Hydrodynamics. The potential impacts of the opening of the basin and construction and operation of the marina on currents, water circulation and sediment movement should be studied.

4. Dredging. The potential need for new and maintenance dredging to connect the basin to the Bay and to maintain the marina over time needs to be understood and the impacts addressed.

5. Miscellaneous Issues. The presence of fog should be studied to determine whether fog may affect the safety of the site for marina use. Construction, maintenance and use of the marina may affect noise, air quality and land transportation conditions in the vicinity. Navigation safety needs to be protected as commercial ships are passing through the ship channel between Point San Pedro and Point San Pablo. The need to provide public access, including the Bay Trail, along the shoreline consistent with the Commission's requirements should be addressed. Other typical marina-related issues, such as the possibility of small boat launching facilities, live-aboard boat usage, fishing piers, and marina-related commercial and industrial uses, such be considered.

This list is not intended to suggest that each of these issues will be present or serious regarding the development of a marina at the site, nor do we suggest that, if the issue is present or serious, that mitigation measures could not be developed to reduce the issue to a level of insignificance. Rather, we have tried to provide you with an outline of issues that might be raised by the potential of a marina being developed as a result of the quarry pond(s) being opened to tidal action.

I hope this discussion is useful to you. Please call me or Steve McAdam (415/352-3614) if you have any questions.

Very truly yours,

WILL TRAVIS
Executive Director

WT/SAM/mm

cc: The Honorable Susan L. Adams, Supervisor, First District
James Flageollet, Marin County Counsel
Timothy Haddad, Marin Community Development Agency
1-3-05

To: Mr. Will Travis, Executive Director
c/o BCDC
50 California Street, Suite 2600
San Francisco, California 94111

Dear Mr. Travis,

Thank you for taking the time to explain the position of BCDC related to the proposed reclamation plan for the San Rafael Rock Quarry. From our discussion today, it is my understanding that opening a channel to create a Marina fits with the BCDC policies of expanding the Bay. I also understand that the BCDC is not able to determine the feasibility of such a project until an actual proposal for the project is submitted and environmental issues are addressed.

As part of the reclamation plan update, it is likely that an Environmental Impact Study will be needed as part of the County process. I would ask that you provide Marin County with a list of issues that would need to be addressed in order to determine whether or not there are any fatal flaws with a marina option as an end use. Your assistance will help the County to determine which course to take as we move through the administrative and planning processes. It will also help us to determine what level of financial assurance will be needed in order to convert the mine into an end use that is achievable.

I ask that you send your response to Eric Steger in our Public Works Department, and cc a copy to me, James Flageollet, county counsel who is working on this project and Timothy Haddad, county planner for environmental assessments. I greatly appreciate your help with this.

Sincerely,

Susan L. Adams, Ph.D., RN

Cc: Eric Steger, Marin County DPW
James Flageollet, Marin County Counsel
Timothy Haddad, Marin Community Development Agency
Comment Letter 3: Bay Conservation and Development Commission

3-1 The commenter reviews Bay Conservation and Development Commission (BCDC) legal authority and jurisdiction over the project; BCDC jurisdiction is contemplated in Table 3-1 in Chapter 3, Project Description.

3-2 This comment is preamble introducing the following comments; see responses to those comments.

3-3 This comment clarifies BCDC jurisdiction over particular aspects of the projects.

3-4 Bay Plan polices are discussed in Section 4.6, Land Use and Planning; however, the Bay Plan polices regarding water quality and Bay surface areas are not referenced in the Draft EIR. The physical effects of the apparent inconsistency with these Bay Plan policies is described in Impact 4.5-6 in Section 4.5, Hydrology and Water Quality, and Impact R4.3-7 in Section 4.3, Biological Resources. See, however, Master Response 7 in Section 7.2 for more information on these impacts.

3-5 Impact R4.5-3 in Section 4.5, Hydrology and Water Quality, incorporates the results of a study by Coast and Harbor Engineering regarding water quality and sedimentation of the flooded Main Quarry Bowl (Appendix I in Volume III). For further analysis of this point, see Master Response 7, Flooding the Main Quarry Bowl, in Section 7.2. See also responses to comments 19-116 and 19-117.

3-6 As noted in the Draft EIR (page 4.6-22), appropriate uses and setbacks in the area designated “Waterfront Park, Beach” in the Bay Plan will be incorporated into the final Development Plan for the SRRQ site, which is required three years prior to the anticipated cessation of mining.

3-7 The County regrets the omission of the January 10, 2005 letter from BCDC Executive Director Will Travis in the scoping comments for the projects (appendices G1 and G2); this letter was received prior to the publication of the Notices of Preparation (NOPs) for the projects. The following addresses or indicates where in the EIR the specific comments contained in this letter are addressed:

First comment: Designation of the site within the San Francisco Bay Plan is discussed in Section 4.6, Land Use and Planning; see also comment 3-6 and the response to this comment, above; potential effects of the project on the Marin Islands National Wildlife Refuge are considered in Section 4.3, Biological Resources (Impact P4.3-15);

Second comment: Biological issues associated with opening the project site’s marshes to tidal action are considered in Section 4.3, Biological Resources and in Master Response 10 in Section 7.2 of this document.
Numbered comments:

1. Water Quality: Potential water quality impacts associated with opening the Main Quarry Bowl to the Bay are discussed in Section 4.5, Water Quality and Hydrology. See also Master Response 7 in Section 7.2 of this document;

2. Fish and Wildlife: The potential impacts of construction, maintenance, and operation of the marina on fish and wildlife resources is considered at a programmatic level of detail in Section 4.3, Biological Resources; see also Master Response 7 in Section 7.2 of this document;

3. Hydrodynamics: A hydrodynamic study of the plan to open the Main Quarry Bowl to the Bay is included as Appendix I, and referenced in the impact analysis in Section 4.5, Hydrology and Water Quality;

4. Dredging: The hydrodynamic study also discusses the likely need for maintenance dredging; see Appendix I and Impact R4.5-3 in Section 4.5, Hydrology and Water Quality;

5. Miscellaneous Issues: while some of these issues are discussed in the appropriate sections of Chapter 4, Environmental Setting, Impacts and Mitigation Measures, this discussion is at a programmatic level of detail; more in-depth study of these issues is contemplated to occur during consideration of the final Development Plan, due three years prior to the anticipated cessation of mining.

This comment also includes a reply to Mr. Travis from Supervisor Susan Adams.
March 17, 2008

Mr. Tim Haddad
County of Marin
Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, CA 94903-4157

Dear Mr. Haddad:

Subject: San Rafael Rock Quarry Amended Quarry Permit and Amended Reclamation Plan, SCH #s 2007082097 & 2005102122

The Department of Fish and Game (DFG) has reviewed the documents provided for the subject project, and we have the following comments.

For any activity that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of a river or stream, or use material from a streambed, DFG may require a Streambed Alteration Agreement (SAA), pursuant to Section 1600 et seq. of the Fish and Game Code, with the applicant. Issuance of SAAs is subject to the California Environmental Quality Act (CEQA). DFG, as a responsible agency under CEQA, will consider the CEQA document for the project. The CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for completion of the agreement. To obtain information about the SAA notification process, please access our website at http://www.dfg.ca.gov/habcon/1600/; or to request a notification package, contact the Streambed Alteration Program at (707) 944-5520.

If you have any questions, please contact Mr. Jeremy Sarrow, Environmental Scientist, at (707) 944-5573 or Mr. Greg Martinelli, Water Conservation Supervisor, at (707) 944-5570.

Sincerely,

Cindy Catrambone
Regional Manager
Bay Delta Region

cc: State Clearinghouse
Comment Letter 4: California Department of Fish and Game, Bay Delta Region

4-1 This comment is advisory and states that implementation of the AQP and ARP may require a Streambed Alteration Agreement (SAA). The Draft EIR provides an adequate accounting of potential impacts on stream and riparian resources as well as wetlands and other aquatic habitat potentially under the jurisdiction of California Department of Fish and Game (CDFG). Future post-reclamation development under the ARP will require additional environmental review and, at that time, analysis of impacts on riparian and stream resources under the potential jurisdiction of CDFG will be conducted at a project-level of detail.
April 30, 2008

Tim Haddad
Environmental Coordinator
Marin County Community Development Agency
301 Civic Center Drive, Room 308
San Rafael, CA 94903

Dear Mr. Haddad:

The California Department of Fish and Game (Department) has reviewed the Draft Combined Environmental Impact Report (DEIR) for the proposed San Rafael Rock Quarry Amended Reclamation Plan (ARP) and Amended Surface Mining and Quarrying Permit. The San Rafael Rock Quarry (SRRQ) is located at 1000 Pt San Pedro Rd., San Rafael, California. The SRRQ sits adjacent to San Pablo Bay on Point San Pedro. The ARP being evaluated in this DEIR was submitted to the County of Marin in 2004, but has not yet been approved. The ARP proposes to continue mining the SRRQ for 15 to 17 more years until the main quarry bowl (bowl) depth is an average -350 feet and a maximum -400 feet Mean Lower Low Water (MLLW). Once rock mining is complete, SRRQ would excavate a new channel from the site to San Pablo Bay allowing the quarry bowl to flood with bay water. A deep-water harbor and marina with 400 slips would be developed inside the flooded bowl. The new channel to San Pablo Bay would be dredged to -12 feet MLLW and two jetties would be constructed at the mouth of the channel to protect it from sedimentation.

As trustee for the State’s fish and wildlife resources, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. In this capacity, the Department administers the California Endangered Species Act, the Native Plant Protection Act, and other provisions of the California Fish and Game Code that afford protection to the State’s fish and wildlife trust resources. Pursuant to our jurisdiction the Department has the following concerns, comments, and recommendations regarding the project. The Department comments are focused on the potential impacts to marine resources and habitats.

1. The DEIR concludes that flooding the -400 foot MLLW bowl by excavating a channel to San Pablo Bay would create a significant and unavoidable adverse impact to marine biological resources. Tidal circulation and water quality modeling (ADCIRC Model), performed by Coast and Harbor Engineering (CHE), concluded that long flushing times in deep bowls greater than 30-feet could cause stagnation and reduced oxygen with depth which would create adverse conditions for aquatic life. Furthermore, vertical mixing of poor quality deep water with the surface water could degrade higher quality water in the shallower depths. Due to potential for poor water quality, the proposed
project could adversely affect species listed under the California Endangered Species Act (CESA), such as Sacramento winter-run and spring-run Chinook salmon, Delta smelt, and Longfin smelt, a candidate for listing under the CESA. Other species of special concern include the Green sturgeon and Sacramento fall-run Chinook salmon, whose population is at an all-time low. Pacific herring, an important commercial fish species and forage fish for salmon, are known to spawn in the vicinity of the San Rafael Quarry. In addition, the status of the spawning population of Pacific herring in San Francisco Bay continues to be a concern for the Department. Many marine species, including juvenile Dungeness crab, utilize San Francisco Bay as a nursery environment.

2. The CHE modeling determined that the proposed channel and jetties would have a less than significant effect on circulation and water quality conditions in San Francisco Bay. However, some areas near the shoreline downstream of the proposed jetties could experience a reduction in current speeds, though the reductions in velocity were small enough to be considered insignificant.

3. The DEIR determined that various mitigation measures were not feasible for the proposed project because they would significantly alter the project as a whole and modify the overall project schedule. However, the Alternatives Analysis in the DEIR describes two alternatives that would avoid or minimize the marine resource impacts from flooding the quarry bowl with San Pablo Bay waters. The Department prefers the following two alternatives to the proposed project.

   - The “Alternative Reclamation with Alternative Beneficial End Use” would not open a channel to San Pablo Bay; instead the quarry bowl would be utilized as a freshwater reservoir. This alternative would avoid the marine resource impacts altogether. In addition, Marin Municipal Water District could utilize the reservoir as a source of fresh water, which would aid in reducing drinking water shortage problems.

   - The “Mitigated Alternative” would backfill the quarry bowl with dredge material and other sources of soil until the bowl is at a depth of -30 feet (msl). Once the bowl has reached the proper depth and capped with clean material, a channel would be excavated to San Pablo Bay allowing the shallow bowl to flood. A marina would then be developed in the flooded bowl. This alternative would prevent the poor water quality issues associated with a 400’ deep hole and minimize marine resource impacts.

In conclusion, the Department recommends that the ARP be modified to include one or both of the above alternatives. The Final Environmental Impact Report should reflect these changes and associated mitigation in order to prevent significant environmental impacts to marine resources.
Tim Haddad
Page 3 of 3
April 30, 2008

The Department appreciates the opportunity to review and comment on the DEIR. As always, Department personnel are available to discuss our concerns, comments, and recommendations in greater detail. To arrange for a discussion please contact Ms. Vicki Frey, Environmental Scientist, Department of Fish and Game, 619 2nd St., Eureka, CA, 95501, (707) 445-7830.

Sincerely,

Marija Vojkovich
Regional Manager
Marine Region

cc: Ms. Vicki Frey
Department of Fish and Game
Eureka, CA

Mr. Jeremy Sarrow
Department of Fish and Game
Yountville, CA

Ms. Laura Hoberecht
NOAA Fisheries Service
777 Sonoma Avenue, Room 325
Santa Rosa, CA 95404-4731

Ms. Jane Hicks
Chief, Regulatory Branch
Army Corp of Engineers
1455 Market Street
San Francisco, CA 94103-1398

Erin Bomkamp
San Francisco Bay Conservation and Development Commission
50 California Street, Suite 2600
San Francisco, CA 94111

Marla Lafer
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612
Comment Letter 5: California Department of Fish and Game, Marine Region

5-1 This comment is preamble, and reviews the description of the projects.

5-2 Impacts of the proposal to flood the Main Quarry Bowl are discussed in Section 4.3, Biological Resources; see Impact R4.3-7; see also Master Response 7 in Section 7.2 of this document.

5-3 This comment reviews but does not question the conclusion reached in the Draft EIR regarding less-than-significant effects on circulation and water quality conditions in San Francisco Bay associated with flooding the Main Quarry Bowl.

5-4 This comment notes CDFG’s preference for two of the Alternatives analyzed in the Draft EIR. See more information on alternatives in Master Response 4 in Section 7.2 of this document.

5-5 This comment notes the ability of the Alternative Reclamation with Alternative Beneficial End Use Alternative to avoid impacts on marine resources. Please see Master Response 4 in Section 7.2 of this document.

5-6 This comment notes the apparent ability of the Mitigated Alternative to avoid water quality impacts and associated impacts on marine resources. Please see Master Response 4 in Section 7.2 of this document.

5-7 This comment reiterates CDFG’s preference for these two alternatives. Please see Master Response 4 in Section 7.2 of this document.
April 15, 2008

Tim Haddad
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, CA 94903-4157

Subject: San Rafael Rock Quarry Amended Quarry Permit and Amended Reclamation Plan
SCH#: 2005102122

Dear Tim Haddad:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on April 14, 2008, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immedately. Please refer to the project’s ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

“A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation.”

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Terry Roberts
Director, State Clearinghouse

Enclosures
cc: Resources Agency
Comment Letter 6

Document Details Report
State Clearinghouse Data Base

SCH# 2005102122
Project Title San Rafael Rock Quarry Amended Quarry Permit and Amended Reclamation Plan
Lead Agency Marin County

Type EIR Draft EIR
Description The Draft EIR is a combined Draft EIR for two closely related project applications for the San Rafael Rock Quarry; an Amended Reclamation Plan and an Amended Surface Mining and Quarry Permit. The project sponsors propose to amend the quarry permit to facilitate continued quarrying operations within certain areas of the site, including blasting, excavating from the Main Quarry Bowl, and they propose to amend the existing Reclamation Plan approved for the quarry pursuant to the Surface Mining and Reclamation Act of 1975 (SMARA) (Amended Reclamation Plan ARP#2 approved by the County in 1982).

Lead Agency Contact
Name Tim Hadad
Agency Marin County Community Development Agency
Phone (415) 499-5269
Fax
email
Address 3501 Civic Center Drive, Room 308
City San Rafael
State CA
Zip 94903-4157

Project Location
County Marin
City San Rafael
Region
Cross Streets Point San Pedro Road
Parcel No. 184-010-09, 15, 16, 51, 52
Township Range
Section
Base

Proximity to:
Highways
Airports
Railways
Waterways San Francisco Bay
Schools
Land Use RMPC (Residential/Commercial Multiple Planned.

Project Issues Aesthetic/Visual; Air Quality; Archaeologic-Historic; Biological Resources; Landuse; Noise;
Toxic/Hazardous

Reviewing Agencies Resources Agency; Department of Conservation; Department of Fish and Game, Region 3; Office of Historic Preservation; Department of Parks and Recreation; San Francisco Bay Conservation and Development Commission; Department of Water Resources; Caltrans, District 4; Air Resources Board, Major Industrial Projects; Integrated Waste Management Board; Regional Water Quality Control Board, Region 2; Department of Toxic Substances Control; Native American Heritage Commission

Date Received 02/14/2008  Start of Review 02/14/2008  End of Review 04/14/2008

Note: Blanks in data fields result from insufficient information provided by lead agency.
March 17, 2008

Mr. Tim Haddad  
County of Marin  
Community Development Agency  
3501 Civic Center Drive, Room 308  
San Rafael, CA 94903-4157  

Dear Mr. Haddad:

Subject: San Rafael Rock Quarry Amended Quarry Permit and Amended Reclamation Plan, SCH #s 2007082097 & 2005402422

The Department of Fish and Game (DFG) has reviewed the documents provided for the subject project, and we have the following comments.

For any activity that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of a river or stream, or use material from a streambed, DFG may require a Streambed Alteration Agreement (SAA), pursuant to Section 1600 et seq. of the Fish and Game Code, with the applicant. Issuance of SAAs is subject to the California Environmental Quality Act (CEQA). DFG, as a responsible agency under CEQA, will consider the CEQA document for the project. The CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for completion of the agreement. To obtain information about the SAA notification process, please access our website at http://www.dfg.ca.gov/habcon/1600/; or to request a notification package, contact the Streambed Alteration Program at (707) 944-5520.

If you have any questions, please contact Mr. Jeremy Sarrow, Environmental Scientist, at (707) 944-5573 or Mr. Greg Martinelli, Water Conservation Supervisor, at (707) 944-5570.

Sincerely,

Charles Amor  
Regional Manager  
Bay Delta Region  

cc: State Clearinghouse

Conserving California's Wildlife Since 1870
March 17, 2008

Mr. Tim Haddad  
County of Marin  
Community Development Agency  
3501 Civic Center Drive, Room 308  
San Rafael, CA  94903-4157

Dear Mr. Haddad:

Subject: San Rafael Rock Quarry Amended Quarry Permit and Amended Reclamation Plan, SCH #s-2007082099 & 2005102122

The Department of Fish and Game (DFG) has reviewed the documents provided for the subject project, and we have the following comments.

For any activity that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of a river or stream, or use material from a streambed, DFG may require a Streambed Alteration Agreement (SAA), pursuant to Section 1600 et seq. of the Fish and Game Code, with the applicant. Issuance of SAAs is subject to the California Environmental Quality Act (CEQA). DFG, as a responsible agency under CEQA, will consider the CEQA document for the project. The CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for completion of the agreement. To obtain information about the SAA notification process, please access our website at http://www.dfg.ca.gov/habcon/1600/; or to request a notification package, contact the Streambed Alteration Program at (707) 944-5520.

If you have any questions, please contact Mr. Jeremy Sarrow, Environmental Scientist, at (707) 944-5573 or Mr. Greg Martinelli, Water Conservation Supervisor, at (707) 944-5570.

Sincerely,

Charles Armor  
Regional Manager  
Bay Delta Region

cc: State Clearinghouse
April 22, 2008

Tim Haddad
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, CA 94903-4157

Subject: San Rafael Rock Quarry Amended Quarry Permit and Amended Reclamation Plan
SCH#: 2005102122

Dear Tim Haddad:

The enclosed comment(s) on your Draft EIR was (were) received by the State Clearinghouse after the end of the state review period, which closed on April 14, 2008. We are forwarding these comments to you because they provide information or raise issues that should be addressed in your final environmental document.

The California Environmental Quality Act does not require Lead Agencies to respond to late comments. However, we encourage you to incorporate these additional comments into your final environmental document and to consider them prior to taking final action on the proposed project.

Please contact the State Clearinghouse at (916) 445-0613 if you have any questions concerning the environmental review process. If you have a question regarding the above-named project, please refer to the ten-digit State Clearinghouse number (2005102122) when contacting this office.

Sincerely,

Terry Roberts
Senior Planner, State Clearinghouse

Enclosures
cc: Resources Agency
April 16, 2008

Tim Haddad, Environmental Coordinator
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, California 94903-4157

SUBJECT: Notice of Completion of Draft Environmental Impact Report for the San
Rafael Rock Quarry Amended Quarry Permit and Amended Reclamation Plan;
SCH #s 2007082007 and 2005102122; BCDC Inquiry File No. MR.SR.7128.1

Dear Mr. Haddad:

Thank you for requesting the Commission’s comments on the draft Environmental Impact
Report (EIR) for the San Rafael Rock Quarry Amended Quarry Permit and Amended
Reclamation Plan, dated February, 2008 and received in our office on February 19, 2008. A
portion of the proposed project must be authorized by a permit from the San Francisco Bay
Conservation and Development Commission (“BCDC” or “Commission”). Although the
Commission itself has not reviewed the draft EIR, the Commission’s staff has reviewed the draft
EIR and is submitting its comments regarding the project. The staff comments are based on the
McAtee-Petris Act, the Commission’s San Francisco Bay Plan (Bay Plan), the Commission’s
federally-approved management program for the San Francisco Bay, and the federal Coastal
Zone Management Act (CZMA). The Commission will rely partly on the EIR prepared by the
lead agency when it considers the project.

Commission permits are required for construction, changes of use, dredging, and dredged
material disposal within its area of jurisdiction. Permits are issued if the Commission finds the
activities to be consistent with the McAtee-Petris Act and the findings and policies of the San
Francisco Bay Plan. In addition to any needed permits under its state authority, federal actions,
permits and grants that affect the Commission’s jurisdiction are subject to review by the
Commission, pursuant to the federal Coastal Zone Management Act (CZMA), for their
consistency with the Commission’s federally-approved management program for the Bay. It
appears that some of the proposed project would occur within the Commission’s jurisdiction
and would require Commission authorization.

On January 10, 2005, Will Travis, the Executive Director of the Commission transmitted a
letter to Mr. Eric Stegler of the Marin County Department of Public Works, with copies sent to
Supervisor Susan L. Adams, James Flageolet, Marin County Counsel, and Tim Haddad. The
letter contained a list of issues that should be addressed by an environmental study for a marina
to be developed as part of site reclamation. We feel that the EIR does not adequately respond to
many of the items addressed in the letter, although we understand that this document is intended to address the potential impacts of continued quarry operations and implementation of the reclamation plan, and that the specific details and impacts of any future development would be addressed by a future Master Plan EIR. Regardless, we feel that the proposed amended quarry permit and amended reclamation plan are not consistent with the Commission’s laws and policies as outlined below.

**Jurisdiction and Proposed Project.** The Commission’s jurisdiction includes all tidal areas of the Bay up to the line of mean high water and the inland edge of marsh vegetation (up to five feet above mean sea level) in marshlands, all areas formerly subject to tidal action that have been filled since September 17, 1965, the “shoreline band,” which extends 100 feet inland from and parallel to the Bay shoreline, and “certain waterways” as specified in Section 66610 of the McAteer-Petris Act up to the mean high water or the inland edge of marsh vegetation (up to five feet above mean sea level) in marshlands. The Commission has no shoreline band jurisdiction on certain waterways.

At the proposed project site, the Commission has Bay jurisdiction around the perimeter of the property up to the line of mean high water, and shoreline band jurisdiction 100 feet inland of mean high water line. Currently, the portion of the property within the Commission’s jurisdiction includes the docks on the east end of the property, and the 100-foot shoreline band. The portion of the proposed project that would be constructed within the Commission’s jurisdiction would include the channel and jetties that would form the entrance to the basin, and any other work within the 100-foot shoreline band. Although the quarry pit is not currently within the Commission’s Bay jurisdiction, if the project were constructed, the entrance channel and the marina basin would become Bay jurisdiction immediately upon inundation and any future work within the basin (such as constructing marina berthing facilities) would be considered Bay fill and require Commission authorization. Similarly, if the diked marshland in the northwest quadrant of the property were opened to tidal action, this area would be within the Commission’s Bay jurisdiction.

**Bay Plan Policies on Water Quality and Water Surface Area and Volume.** The amended quarry permit and amended reclamation plan would authorize mining the quarry to a depth of 400 feet (150 feet deeper than currently authorized), after which the quarry pit would be flooded with Bay water via an excavated channel. The EIR acknowledges that as a result of the flooding “[p]oor water quality conditions could occur in the deep water within the flooded Main Quarry Bowl due to long residence time and stratification at depth. The proposed project may result in degradation of water quality within the deep areas of the harbor basin...The low-oxygen, stagnant water that is likely to occupy the deeper portions of the proposed harbor would be considered an impaired water body that could not support...the primary beneficial use...aquatic habitat.” This impact is considered Significant and Unavoidable, with no mitigation measures proposed. This impact is inconsistent with *San Francisco Bay Plan* Policies for water quality, which state in part that “Water quality in all parts of the Bay should be maintained at a level that will support and promote the beneficial uses of the Bay.” Similarly, the *San Francisco Bay Plan* Policies for Water Surface Area and Volume state in part that “[t]he surface area of the Bay and the total volume of water should be kept as large as possible in order to maximize active oxygen interchange, vigorous circulation, and effective tidal action...water circulation in the Bay should be maintained, and improved as much as possible.” Although the proposed marina
creation appears consistent with Water Surface Area and Volume policies because the surface area of the Bay would be increased, the anticipated lack of water circulation and resulting water quality impacts, which would in turn impact Bay fish and wildlife, are clearly inconsistent with the San Francisco Bay Plan policies. The approval of the amended quarry permit and reclamation plan would knowingly allow the creation of a deep, stagnant pool of water with very poor water quality.

Bay Plan Policies on Subtidal Areas and Bay Plan Policies on Tidal Marshes and Tidal Flats. The amended reclamation plan would allow the formation of a flooded basin several hundred feet deeper than the surrounding areas of San Pablo Bay. We are concerned that such a deep basin could create a sediment sink that would draw suspended sediment out of Bay waters that are vital for maintaining mudflat and subtidal habitats. As stated in the Findings on Tidal Marshes and Tidal Flats in the San Francisco Bay Plan, “[s]edimentation is an essential factor in the creation, maintenance and growth of tidal marsh and tidal flat habitat. However, scientists studying the Bay estimate that sedimentation will not be able to keep pace with accelerating sea level rise.” The Tidal Marsh and Tidal Flat policies further state that “[a]ny proposed fill, diking, or dredging project should be thoroughly evaluated to determine the effect of the project on tidal marshes and tidal flats, and designed to minimize, and if feasible, avoid any harmful effects.” Further, the San Francisco Bay Plan Policies on Subtidal Areas state that “[a]ny proposed filling or dredging project in a subtidal area should be thoroughly evaluated to determine the local and Bay-wide effects of the project on...tidal hydrology and sediment movement...and the Bay’s bathymetry.” The draft EIR does not discuss the potential for the basin to act as a sediment sink and therefore, without further study, the proposed amended quarry permit and reclamation plan are inconsistent with San Francisco Bay Plan Policies on Subtidal Areas and San Francisco Bay Plan Policies on Tidal Marshes and Tidal Flats.

Bay Plan Policies on Priority Use Areas. As discussed in the EIR, a portion of the property along the eastern shoreline is located within a waterfront park, beach priority use area as designated by the San Francisco Bay Plan. Actions proposed for this area include the entrance channel for the proposed flooded basin. As stated in the EIR, any development proposed in the priority use area would have to be consistent with all applicable San Francisco Bay Plan policies. In particular, these non-tidal areas would need to be developed as a park for Bay-oriented recreation.

Thank you for your consideration of these issues. Please contact me at 415/352-3619 or erinb@bcdc.ca.gov if you have any questions.

Sincerely,

ERIN BOMKAMP
Coastal Analyst

EB/gg

cc: State Clearinghouse
The Honorable Susan L. Adams, Supervisor, First District
Vicki Frey, California Department of Fish and Game
Comment Letter 6: Governor’s Office of Planning and Research, State Clearinghouse

6-1 This letter includes as attachments comment letters from several State agencies that were also sent directly to Marin County. This letter acknowledges the County’s compliance with State Clearinghouse review requirements for draft environmental documents.

6-2 This letter from the California Department of Fish and Game is a duplicate of comment letter 4.

6-3 This letter from the State Clearinghouse is attached to another comment letter received by the Clearinghouse after close of comment.

6-4 This letter from the BCDC is a duplicate of comment letter 3.
April 10, 2008

Tim Haddad
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, CA 94903-6269

Re: San Rafael Rock Quarry Amended Reclamation Plan and Amended Surface Mining and Quarrying Permit Combined Draft Environmental Impact Report

Dear Mr. Haddad:

On behalf of the San Francisco Bay Trail Project, I am writing to submit comments on the above-referenced Draft Environmental Impact Report (DEIR). The Bay Trail Project is a nonprofit organization administered by the Association of Bay Area Governments (ABAG) that plans, promotes and advocates for the implementation of a continuous 500-mile bicycling and hiking path around San Francisco Bay. When complete, the trail will pass through 47 cities, all nine Bay Area counties, and cross seven toll bridges. To date, slightly more than half the length of the Bay Trail alignment has been developed.

The goal of the Bay Trail Project is to place the trail as close to the shoreline as possible. In areas where a shoreline alignment is not currently feasible due to a conflicting land use—such as the current mining operations at the San Rafael Rock Quarry—an on-street, inland alignment consisting of bike lanes and sidewalks is substituted until such time as a shoreline alignment becomes available. As referenced in the DEIR, the Bay Trail has a “planned” alignment around the perimeter of the rock quarry site. An existing and well-used segment of trail exists immediately adjacent to the site at China Camp State Park, however, in this particular location, neither the shoreline alignment nor the substitute on-street alignment of the Bay Trail on Point San Pedro Road are complete.

The quarry operators are now requesting a significant extension to the timeline for mining operations which will necessarily result in further delaying the implementation of shoreline public access as required by BCDC, and the continuation of heavy trucking operations on Point San Pedro Road. In order to mitigate the safety impacts to recreational users of the Bay Trail along Point San Pedro Road that will result from continued heavy truck traffic, the
quarry operators should be required to provide bike lanes, striping, and appropriate signage along this roadway.

As stated in the many comments received from the community, quarry operations impact the quality of life in the surrounding neighborhoods. There are many families with children in these neighborhoods, and many attend San Pedro Elementary or Glenwood Elementary, both accessed via Point San Pedro Road. The addition of bike lanes (and sidewalks where necessary) will not only assist the recreational cyclists traveling to and from China Camp State Park on the Bay Trail, but will also alleviate some of the safety hazards encountered by area children wishing to ride or walk to school.

As noted in the DEIR, The City of San Rafael General Plan 2020 identifies Point San Pedro as a road where Class II on-street bicycle lanes are planned. The Final EIR should include as a mitigation measure a requirement for the quarry operators to begin work with the Marin County and City of San Rafael Departments of Public Works to immediately plan and construct bike lanes and sidewalk improvements between the quarry and U.S. Hwy 101. We at the Bay Trail recognize that certain roadway sections nearer to Hwy 101 lack the existing right-of-way to implement standard-width bike lanes without significant disruption to properties fronting the roadway. In these areas, the quarry operators should work with the City of San Rafael to find appropriate treatments to improve cyclist and pedestrian safety.

The Bay Trail Project appreciates the opportunity to comment on this NOP and looks forward to working with you on this project. Please do not hesitate to call me at (510) 464-7909 if you have any questions regarding the above comments or the Bay Trail.

Sincerely,

Maureen Gaffney
Bay Trail Planner

Cc: Farhad Mansourian, County of Marin Public Works Department
    Andy Preston, City of San Rafael Public Works Department
    Erin Bomkamp, SF Bay Conservation and Development Commission
Point San Pedro Road
City of San Rafael/County of Marin

Loch Lomond Marina
Pickleweed Park

To Downtown San Rafael
A FEW FACTS ABOUT
THE SAN FRANCISCO BAY TRAIL

- When complete, the Bay Trail will be a **continuous 500-mile corridor** that will encircle San Francisco and San Pablo bays, connecting people to each other and to the water. It will link the shorelines of all nine Bay Area counties and pass through 47 cities. To date, over 288 miles have been developed.

- The Bay Trail provides free and easily accessible **recreational opportunities** for outdoor enthusiasts, including hikers, joggers, bicyclists, skaters, and wheelchair users. It also offers a setting for wildlife viewing and environmental education, and it increases public respect and appreciation for the Bay.

- The Bay Trail also has important **transportation benefits**: it provides a commute alternative for cyclists, and connects to numerous public transportation facilities, including ferry terminals, light-rail lines, bus stops, and Caltrain, Amtrak, and BART stations. Also, the Bay Trail will eventually cross the major bridges in the region.

- The Bay Trail **provides access** to commercial, industrial and residential neighborhoods; points of historic, natural and cultural interest; recreational areas like beaches, marinas and fishing piers; and over 130 parks totaling 57,000 acres of open space. It passes through highly urbanized areas such as downtown San Francisco as well as remote natural areas such as the San Francisco Bay National Wildlife Refuge. Depending on the location of its segments, the Bay Trail consists of paved multi-use paths, dirt trails, bike lanes, sidewalks or signed bike routes.

- As much as possible, the Bay Trail overlaps with, and connects to, other trails and local bike routes. The Bay Trail should not be confused with the Bay Area Ridge Trail, a separate **regional trail network** that travels inland, mostly along the Bay Area's mountain ridges.

- Senate Bill 100, authored by then-state Senator Bill Lockyer and passed into law in 1987 with the endorsement of the entire Bay Area legislative delegation, introduced the concept of a "**ring around the bay.**" SB 100 directed the Association of Bay Area Governments (ABAG) to develop an alignment for the Bay Trail as well as funding and implementation plans. This plan for the Bay Trail was adopted by ABAG in 1989.

- Implementation of the Bay Trail is coordinated by the Bay Trail Project, a **nonprofit organization** created by ABAG and housed at its offices in Oakland. To carry out its mission, the Bay Trail Project provides funds for trail construction and maintenance, ensures consistency with the adopted Bay Trail Plan, provides technical assistance, enlists public participation in trail-related activities, and publicizes the Bay Trail and its benefits to the region.

To learn more about the Bay Trail or to order maps, visit the Bay Trail Project's web site at www.baytrail.org, call us at 510/464.7900 or e-mail us at BayTrail@abag.ca.gov. (April 2007)
Comment Letter 7: San Francisco Bay Trail Project

7-1 This comment describes the San Francisco Bay Trail Project, and its current status in the vicinity of the project site. The San Francisco Bay Trail Project, and Relevant Bay Trail Plan policies, are discussed in Section 4.6, Land Use and Planning.

7-2 Because the existing physical conditions in the vicinity of the Quarry at the time of issuance of the two Notices of Preparation constitute the baseline for the environmental analysis (see the discussion of baseline in section 3.3 of Chapter 3, Project Description), there is no impact associated with delaying completion of the Bay Trail through the project site; therefore, there is no nexus for requiring the suggested mitigation measure. This will not, however, prevent Marin County and the City of San Rafael from completing the planned improvements to Point San Pedro Road. It is expected that detailed planning and environmental review of post-reclamation development of the project site as part of consideration of the Final Development Plan (due 3 years prior to the anticipated cessation of mining operations) will consider issues related to the Bay Trail. Conflicts with surrounding land uses are identified as a significant impact (see Impact R4.6-3 in Section 4.6, Land Use and Planning).
April 11, 2008

Tim Haddad
Environmental Coordinator
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, CA 94903-4157

Re:  San Rafael Quarry
     EIR

Dear Sir:

The San RafaelRock Quarry is a critical source of material for maintenance and improvement of flood control facilities and emergency response. It is the only available quarry where material can be directly loaded onto barges for placement by marine equipment. It is one of a diminishing number of sources for quarry stone material and is especially important for the Bay-Delta area. The quarry has been in operation for at least fifty (50) years and is strategically located.

Expansive development throughout northern California is resulting in greater constraint on quarry operations. Care must be taken not to allow such development to preclude reasonable access to the limited natural resources necessary to sustain our infrastructure. Limitations on haul routes, increased traffic congestion and air pollution controls are increasingly constraining the supply of materials for levee work in the Delta. Much of the Delta is served only by county roads designed for limited traffic and some of the islands can only be accessed by ferries or boats which typically cannot operate during periods of high water or high wind.

The San Rafael Rock Quarry and delivery of material by barge are particularly critical to these areas. In addition, high volume applications which are required in emergency operations can only be accomplished with marine-based equipment supplied by large barges. For the Bay-Delta area this availability is greatly dependent upon the San Rafael Rock Quarry.

During major flood events, there is an overall shortage of quarry stone materials and marine equipment which are critical to the public’s safety.
Tim Haddad  
Environmental Coordinator  
Marin County Community Development Agency  

April 11, 2008

Preservation of the limited sources of material and availability of the specialized equipment needed for flood protection is dependent upon a regulatory climate that allows for economically attractive continuing operations.

Loss of the San Rafael Rock Quarry as a source of material in the Bay-Delta area will greatly jeopardize the ability to maintain the flood control facilities which protect our agricultural lands, residential communities, commercial and industrial facilities, highways, railroads, water conveyance facilities, electrical transmission lines, natural gas and fuel pipelines, recreational facilities, fish and wildlife and the environment.

We urge your careful consideration of the far-reaching impacts associated with your actions.

Yours very truly,

DANTE JOHN NOMELLINI  
Manager and Co-Counsel

DJN:ju  
cc: San Rafael Rock Quarry
Comment Letter 8: Central Delta Water Agency

8-1 This comment discusses the importance of the San Rafael Rock Quarry in providing essential construction materials for maintenance and improvement of flood control facilities in the Sacramento-San Joaquin Delta. See Master Response 12.
April 11, 2008

Tim Haddad, Environmental Coordinator
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, CA 94903

RE: San Rafael Rock Quarry Amended Reclamation Plan and Amended Surface Mining and Quarrying Permit – Combined Draft Environmental Impact Report

Dear Members of the Board of Supervisors:

The City of San Rafael appreciates the opportunity to review and comment on the Draft EIR prepared for the San Rafael Rock Quarry. We will limit our comments to issues of direct impact on the City.

The City is most concerned with the inherent conflict in the Reclamation Plan process which proposes final grading and site restoration for a future reuse scenario that has received no land use entitlements, has not been subject to a community planning process or even a thorough traffic analysis in the Draft EIR. The proposed reuse of the quarry site is estimated to generate 924 vehicular trips during the morning peak commute hour and 2,316 trips during the evening peak hour. By comparison, the recently approved redevelopment of the Loch Lomond Marina site will generate one fifth of the morning traffic levels and one tenth as much evening traffic as the proposed redevelopment of the quarry site. This level of traffic would overwhelm the level of service along Point San Pedro Road, Third Street and all intersections leading to the Highway 101 ramps, all of which are very close to capacity based on the City’s level of service standards. The traffic analysis contained in the Draft EIR does not even attempt to analyze the impact of this additional traffic on City streets or the highway. Even though we recognize that the County entitlement process now underway is not intended to determine or authorize the reuse potential of the site, the City wishes to go on record as encouraging consideration of a much more realistic reuse scenario that either significantly reduces anticipated traffic generation or seriously considers mandating alternate routes to the site such as North San Pedro Road. Adoption of the proposed reclamation plan would send a very inaccurate message to the property owners that such a site reuse plan has the potential of receiving entitlements in the future.

Obviously, the most important health-related issues affecting nearby residents relate to diesel emissions and crystalline silica from blasting and dust generation. We encourage the County to update the toxicological analyses contained in the Draft EIR based on input from both the Point San Pedro Road Coalition and the quarry operator so that this issue can be most effectively understood and debated by the public. We also encourage the imposition of
mitigation measures to reduce dust and noise, such as enclosing existing crushing and loading equipment and paving on-site haul roads.

The noise analysis in the Draft EIR contains thresholds of significance based on County standards. Since the most proximate residents are within the City of San Rafael, we request that the noise analysis also be based on the City’s noise ordinance and General Plan policies to determine if quarry operations meet these criteria as well.

The City is supportive of imposition of mitigation measures that include the delay in mining of South Hill, that do not require the installation of the 70-foot tall noise berm in the NE Quadrant, and that initiate restoration of wetlands early in the reclamation process. In addition, while a barge-only alternative is considered, the City would encourage consideration of operating requirements that would increase barge transport of materials and decrease truck access as a means of addressing the unresolved cumulative impact of diesel emissions affecting residents along Point San Pedro Road.

Although not specifically addressed in the Draft EIR, the City will be interested in the County’s requirements imposed on the quarry operator to assure that adequate funding is set aside and frequently updated to assure the ability to implement the approved reclamation plan.

Finally, although also not addressed in the Draft EIR, the City wishes to improve the level of on-going maintenance of Pt. San Pedro Road which is severely impacted by quarry truck traffic. Although an agreement exists between the quarry operator and the County to provide asphalt for repaving of both the City and County portions of the roadway, there have been no actions taken to date which provide the City with such material to resurface our roadway. We request that the Board direct your Public Works Director to set up an equitable and convenient system to implement this mitigation provision to improve this joint-use thoroughfare.

In addition to these general comments, please find additional comments that refer to specifics in the Draft EIR which are attached. We appreciate the challenges facing the Board in balancing the state requirements for continued operation of this important mineral resource while protecting to a greater degree the health and property rights of those who reside near the quarry.

Sincerely,

[Signature]
Albert J. Boro
Mayor

cc: City Council
    Planning Commission
    City Manager
    Public Works Director
    Community Development Director
City of San Rafael Supplemental Comments on February 2008 Draft Environmental Impact Report for the San Rafael Rock Quarry Amended Reclamation Plan and Amended Surface Mining and Quarrying Permit

1. Traffic Analysis
   a. The purpose of the traffic analysis in the Draft EIR is unclear since it addresses existing conditions and post-reclamation vehicle trip generation, but does not assess the impacts of the post-reclamation traffic.
   b. The existing levels of service indicated in Table 4.10-2 are inconsistent with recent data used by the City of San Rafael, including that contained in the Loch Lomond Marina Village Final EIR and the Third and Union Intersection Improvement Supplemental EIR.
   c. The City's General Plan requires both intersection level traffic analysis as well as arterial analysis to determine the impacts of future development on a series of intersections, such as those leading to the Highway 101 ramps from Pt. San Pedro Road.
   d. On December 3, 2007 the City Council approved physical modifications to the Third and Union intersection and modified the General Plan to change the acceptable Level of Service at this intersection to LOS E, a maximum of 70 seconds of delay within the peak hours (Resolution 12402). These physical and policy changes should be reflected in Chapter 4.10 of the DEIR.

2. Project Description
   The reuse scenario for the quarry is alternatively described as including 350 and 412 housing units. For example, pages 4.10-8 and 4.9-7 indicate 350 housing units, while Table 4.10-3 and the Appendix C Calculation of Greenhouse Gas Emissions from Post-Reclamation Electrical Use indicates 412 housing units. Please clarify.

3. Noise Analysis
   Since affected surrounding land uses to the quarry are within both unincorporated and incorporated areas, the thresholds of significance used in the noise analysis should include both County ordinances as well as the City’s Noise Ordinance and General Plan Noise Element policies.
Comment Letter 9: City of San Rafael

9-1 As the commenter acknowledges, approval of the Amended Reclamation Plan would not entitle the Quarry to redevelop the site following reclamation; such entitlements would be granted after consideration of the Final Development Plan, due to be submitted by the Quarry 3 years prior to the anticipated cessation of mining. Note, however, that the Draft EIR finds that the preliminary plan for post-reclamation development of the site is generally consistent with Countywide Plan Policy PA-3.2 (see Section 4.6, Table 4.6-1, in Volume 1 of this Final EIR).¹ The Draft EIR includes consideration of the Alternative Reclamation with Alternative Beneficial End Use alternative. This alternative describes a much less intensive end-use for the site. See Master Response 4 in Section 7.2 of this document for further discussion of this alternative.

9-2 See Master Response 5 in Section 7.2 of this document for further analysis and discussion of project-related health risks.

9-3 Many measures to reduce noise and dust are included in Section 4.7, Noise, and Section 4.2, Air Quality. Enclosure of some operations is considered in the Reduced Alternative to the ARP, in Chapter 6, Alternatives; see further discussion of this point in Master Response 4 in Section 7.2 of this document.

9-4 Please refer to Master Response 11 in Section 7.2 of this document.

9-5 These measures are considered as part of the Mitigated Alternative to the ARP. See Chapter 6, Alternatives and Master Response 4 in Section 7.2 of this document.

9-6 As the applicant proposes no increase in truck traffic above baseline, there is no nexus for imposition of a stricter limitation on truck traffic (CEQA Guidelines §15126.4 (a)(4)). Mitigation Measure P4.6-6b in Section 4.6, Land Use and Planning, would limit Quarry operations to the levels of intensity extant in 1982, at the time that the Quarry became a legal nonconforming use, thus further limiting project emissions. Other measures to reduce diesel emissions are identified in Section 4.2, Air Quality. Additional limitation of truck traffic is considered under the Reduced Alternative to the AQP; see further discussion of this in Master Response 4 in Section 7.2.

9-7 Under the Surface Mining and Reclamation Act (SMARA), San Rafael Rock Quarry must, as an operator of a surface mine in California, provide to the State and the lead agency financial assurances that sufficient funds are available to accomplish reclamation (Public Resources Code §2770).

9-8 Impact C4.10-3 in Section 4-10, Transportation and Traffic, finds the cumulative effect of the projects on roadway surfaces in the vicinity of the project site to be less than significant.

¹ The final determination of Countywide Plan policy consistency must be made by the County Board of Supervisors.
9-9 Potential health risks of the projects are examined in Section 4-2, Air Quality. Land use compatibility issues are examined in Section 4-6, Land Use and Planning.

9-10 The combined EIR examines the effects of post-reclamation development of the project site only at a programmatic level. More detailed analysis will be required prior to the granting of entitlements that would allow more traffic. This is expected to occur in the context of consideration of the Final Development Plan, due to be submitted by the Quarry 3 years prior to the anticipated cessation of mining. It is assumed that the County will require post-reclamation development of the site to be consistent with Countywide Plan Policy PA-3.2.

9-11 The comment incorrectly characterizes the existing levels of service (LOS) presented in Table 4.10-2 in Section 4.10, Transportation and Traffic, as inconsistent with that contained in cited City documents. The LOS and delay in Table 4.10-2 are an exact match of the LOS and delay presented in Table 3.4-2 of the Final EIR for The Village at Loch Lomond Marina project. [Consultation with City Planning staff revealed that evaluation of proposed intersection improvements at Third and Union was contained in an Addendum, not a Supplemental EIR, to the General Plan 2020 Final EIR. The Addendum did not present LOS conditions that differ from those in the Draft EIR.]

9-12 As the applicant proposes no increase in truck traffic above baseline (on either a daily or a.m. peak-period basis), there would be no project-generated increase to traffic volumes on roads (or at intersections) in the project area above baseline. The intersection levels of service under project conditions would be the same as shown in Table 4.10-2, on page 4.10-5, and the project impact would be a less-than-significant effect on near-term and cumulative traffic conditions.

9-13 Text on page 4.10-3 in Section 4.10 has been modified (and expanded) as follows, to reflect the current San Rafael General Plan Traffic Level of Service Standards for intersections:

**Level of Service Analysis Methodologies**

The operation of a local roadway network is commonly measured and described using a grading system called Level of Service (LOS). The LOS grading system qualitatively characterizes traffic conditions associated with varying levels of vehicle traffic, ranging from LOS A (indicating free-flow traffic conditions with little or no delay experienced by motorists) to LOS F (indicating congested conditions where traffic flows exceed design capacity and result in long delays). This LOS grading system applies to both roadway segments and intersections. Marin County and the City of San Rafael have established LOS D as the generally acceptable service level standard at most intersections throughout their jurisdictions. The City of San Rafael’s LOS D standard applies citywide, except at downtown the following locations, where the standard is LOS E, and at the intersection of Mission Avenue / Irwin Street, where the standard is LOS F:
• Downtown intersections (except at the intersection of Mission Avenue / Irwin Street, where the standard is LOS F), and the intersections of Irwin Street and Grand Avenue between Second Street and Mission Avenue, Third Street / Union Streets (maximum 70 seconds of delay during peak hours), Andersen Drive / West Francisco Boulevard, Andersen Drive / Bellam Boulevard, Manuel T. Freitas Parkway / Civic Center – Redwood Highway, Merrydale Road / Civic Center Drive, and Merrydale Road / Las Gallinas Avenue.

9-14 The figure of 350 single-family residential housing units is taken from ARP04 as the number proposed by the applicant. As explained in footnote a of Table 4.10-3, the figure of 412 units is derived by multiplying the maximum allowable density from the Marin Countywide Plan Community Development Element (4 units per acre) by the area (102.9 acres) proposed by the applicant for this land use. Please refer to the response to comment 9-10, above, regarding future analysis of post-reclamation development.

9-15 Please refer to Master Response 11 in Section 7.2 of this document.
April 11, 2008

Tim Haddad, Environmental Coordinator  
Marin County Community Development Agency  
3501 Civic Center Drive, Room 308  
San Rafael, California 94903-4157

Dear Mr. Haddad:

SUBJECT: San Rafael Rock Quarry (Quarry) Draft Environmental Impact Report (DEIR)

It has been brought to the attention of the Delta Protection Commission (Commission) that the Marin County Board of Supervisors (County) is conducting a public hearing on the subject project document on April 14, 2008. Although the quarry is physically located outside of the Primary Zone of the Legal Delta, it provides material support for activities conducted in the Primary and Secondary Zones. Therefore, Commission staff urges your recognition of the Delta Protection Act (Act) and the policies of the Commission’s Land Use and Resource Management Plan for the Primary Zone of the Delta (Management Plan) in the review of this project pursuant to the requirements of the California Environmental Quality Act (CEQA).

The Act was enacted in 1992 in recognition of the increasing threats to the resources of the Primary Zone of the Delta from urban and suburban encroachment having the potential to impact agriculture, wildlife habitat, and recreation. Pursuant to the Act, the Management Plan was completed and adopted by the Commission in 1995.

The Management Plan sets out findings, policies, and recommendations resulting from background studies in the areas of environment, utilities and infrastructure, land use, agriculture, water, recreation and access, levees, and marine patrol/boater education/safety programs. As mandated by the Act, the policies of the Management Plan are incorporated in the General Plans of local entities having jurisdiction within the Primary Zone, including Contra Costa County.

Therefore, it is recommended that the County’s review and analysis of the proposed project should take into consider relevance to the policies of the Management Plan including, but not limited to, levees, utilities and infrastructure, and water.

Thank you for the opportunity to comment on this matter of importance to the Delta. If you need additional information from the Commission, please contact me at (916) 776-2292 or at lindadpe@citlink.net.

Sincerely,

Linda Fiacco  
Executive Director
Comment Letter 10: Delta Protection Commission

10-1 As noted by the commenter, the project site is located outside of the Delta Primary Zone. It therefore is not subject to the polices of the Commission’s Land Use and Resource Management Plan.
Comment Letter 11

Gerald M. (Jerry) Serventi
Director of Engineering

April 14, 2008

Mr. Tim Haddad
Environmental Coordinator
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, California 94903-4157

Dear Mr. Haddad:

RE: San Rafael Rock Quarry Amended Reclamation Plan and Amended Surface Mining and Quarrying Permit
Combined Environmental Impact Report
SCH#’s 20051022122 (Amended Reclamation Plan)
2007082097 (Amended Quarrying Permit)

I am the Director of Engineering for the Port of Oakland. I am writing in support of the San Rafael Rock Quarry (SRRQ) Amended Quarrying Permit. The SRRQ is a privately-owned enterprise and typically I do not offer letters of support for such; however, it has been recognized that the SRRQ is a unique resource of public importance by reason of its capacity to provide rock of all sizes, which can be delivered by water as well as truck.

Over the years the Port of Oakland has come to rely on the rock from this quarry for two reasons: 1) the engineering quality of the rock; and 2) the ability to access the rock by barge. Much of the work that is done at the Port of Oakland and the other ports and harbors in San Francisco Bay and its tributaries rely on the rock from SRRQ. That ability to deliver rock by barge is critical for the timing and economics of these projects. The moving of rock directly from the quarry to the project sites by barge is probably the most environmentally friendly method that we have found to date. This delivery method keeps trucks off of the regions’ highways, our roads locally, and the project sites as material is brought to the site. It reduces project site congestion as the materials do not have to be re-handled on site to get them to their final location. This delivery method also reduces air emission impacts related to delivery of material for projects starting at the quarry to and ending with placement of material. This benefits the region and the local areas.

As the Port and other agencies look to the future, we all see growth and the need to protect the environment and tight economic times. This means we have to look for ways to accomplish our projects in the most economic and environmentally friendly way. In the current environment, the use of barged material goes along way in that regard.

Sincerely,

Gerald M. Serventi
Director of Engineering

Cc: Aimi Dutra Krause, San Rafael Rock Quarry

530 Water Street ■ Jack London Square ■ P.O. Box 2064 ■ Oakland, California 94604-2064
Telephone: (510) 627-1100 ■ Facsimile: (510) 627-1826 ■ Web Page: www.portoakland.com
Comment Letter 11: Port of Oakland

11-1 Please refer to Master Response 12 for a discussion of several of the points brought up in this comment.
April 14, 2008

Tim Haddad  
Environmental Coordinator  
Marin County Community Development Agency  
3501 Civic Center Drive  
San Rafael, CA 94903

Draft EIR – San Rafael Rock Quarry

Dear Mr. Haddad:

The operation of the San Rafael Rock Quarry is currently under view in the context of the preparation of the EIR by the County of Marin. The Port of Redwood City would like to offer the following comments regarding the draft EIR for this operation:

The Port of Redwood City is involved with coastwise and intra-SF Bay shipment of construction aggregate material by ship and barge. The shipment of these materials has been growing and is projected to continue to increase. This is primarily due to the lack of available resources of these materials in Northern California to meet the needs of the construction industry and the benefits in moving these materials by marine transportation in contrast with over-the-road trucking.

The San Rafael Rock Quarry (SRRQ) is a unique regional asset in terms of supplying these crucial construction materials and having the ability to move them by water. SRRQ provides hard rock material that is necessary not only for the maintenance and emergency repairs to the Delta levee system, but also for projects in South SF Bay such as shoreline erosion protection and flood control projects. This material is of a quality and size that is almost impossible to be sourced anywhere in the region. It has the added benefit of being available by barge which takes trucks off of the region’s highway system.

We urge that the environmental review for the SRRQ be concluded as expeditiously as possible and that the County of Marin consider the regional importance of this quarry in its review of any reasonable conditions on its operations.

Sincerely,  
Michael J. Giari  
Executive Director
Comment Letter 12: Port of Redwood City

12-1 Please refer to Master Response 12.

12-2 This comment addresses the merits of the project, not the environmental analysis.
April 14, 2008

Mr. Tim Haddad  
Environmental Coordinator  
Marin County Community Development Agency  
3501 Civic Center Drive, Room 308  
San Rafael, Ca 94903-4157

Dear Mr. Haddad:

The Port of Stockton appreciates the opportunity to provide its comments on the San Rafael Rock Quarry operation in Marin County. The protection of land from flooding and the protection of levees from failure are of the utmost concern to the Port of Stockton and many other Delta landowners. A levee failure would result in the loss of an effective and efficient method of goods movement between the Bay and the Central Valley. In addition to the loss of an efficient shipping channel, an even greater risk is present in the potential loss to property and life resulting from levee failure without an immediate and effective response. Another devastating result of Delta levee vulnerability would be the loss of the water supply for millions of Californians that the Delta provides.

The key location and access to the delta make the San Rafael Rock Quarry an invaluable asset to Californians. It is the only quarry with waterside bargeing capabilities which allows for materials to be transported immediate to most areas of the Delta during an emergency, especially to areas not accessible by trucks. In recent years, barges have played an increasingly critical role in delivering materials during emergency situations. To highlight the importance of the San Rafael Quarry, it recently produced and immediately barged 800,000 tons of rock to stabilize and repair levee failures in the Delta region in 2006 alone. Further, the quarry has provided emergency work for other regional disasters including the 2004 breach of the Jones Tract levee in the Delta.

The continued operation of the San Rafael Rock Quarry without limitation is critical for the continued protection of regional property and life, and the protection of a significant and important water supply of the State. Therefore, the Port of Stockton urges Marin County to limit restrictions on the operation of the San Rafael Rock Quarry.

Sincerely,

Richard Aschieris  
Port Director
Comment Letter 13: Port of Stockton

13-1 Please refer to Master Response 12.
April 11, 2008

Tim Haddad
Environmental Coordinator
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, CA 94903-4157

Re: San Rafael Rock Quarry

Dear Mr. Haddad,

It has come to our attention that the Marin County Board of Supervisors will be conducting a public hearing to review comments regarding the County’s draft EIR relating to the San Rafael Rock Quarry (SRRQ).

Reclamation District 2027 is deeply dependent on the access and resources of SRRQ to maintain the integrity of our levees. The delta levee system protects homes, businesses, human life and the future economic stability in these communities. The Delta levees also protect the state’s water conveyance system that is vital to the state and global economy.

SRRQ is a unique resource that provides rock materials to carry out preventative and emergency maintenance on the delta levee system. Not only does the SRRQ provide the primary source of materials needed, it is also the only source of marine-based activities and the only quarry in Northern California with direct loading access to barges. Marine based equipment is often the only way to access levee repair sites.

The delta levee system, home and business owners, members of the surrounding communities are dependent on the use of rock bank protection and the loss of the SRRQ will make it extremely difficult to maintain the delta levee system in an efficient and cost effective manner.

In conclusion we would like to convey the importance of keeping SRRQ an active mining operation. Prohibiting SRRQ from conducting business would detrimentally affect millions of people, including those who are in opposition of keeping SRRQ an active business.

Sincerely,

RECLAMATION DISTRICT NO. 2027

[Signature]

James A. Barrett, Jr.
Trustee

cc: San Rafael Rock Quarry
    Tony Marnell
    Greg Wells
    Clint Womack
Comment Letter 14: Reclamation District No. 2027

14-1 Please refer to Master Response 12.
Tim Haddad  
Environmental Coordinator  
Marin County Community Development Agency  
3501 Civic Center Drive, Room 308  
San Rafael, CA 94903-4157  

Re: San Rafael Rock Quarry  

April 14, 2008  

Dear Mr. Haddad,  

It has come to our attention that the Marin County Board of Supervisors will be conducting a public hearing to review comments regarding the County’s draft EIR relating to the San Rafael Rock Quarry.  

Reclamation District No 800, Byron Tract is 8500 acres of both urban and agricultural land use and was formed in 1909. We have been using San Rafael Rock Quarry for decades to help us shore up our levees.  

San Rafael Rock Quarry is a unique resource that provides rock materials to carry out emergency and maintenance on the delta levee system. Not only does the San Rafael Rock Quarry provide the primary source of materials needed, it is also the only source of marine-based activities and the only quarry in Northern California with direct loading access to barges. Marine based equipment is often the only way to access our levee repair sites. It is imperative that we not lose the opportunity to use marine base equipment.  

In conclusion we would like to convey the importance of keeping San Rafael Rock Quarry an active mining operation.  

Jeffrey D. Conway  

District Manager  
Reclamation District No. 800, Byron Tract
Comment Letter 15: Reclamation District No. 800, Byron Tract

15-1 Please refer to Master Response 12.
UNION ISLAND RECLAMATION DISTRICT NO. 1
311 East Main Street, Suite 504
Stockton, CA 95202
(209) 943-5551

April 11, 2008

BOARD OF TRUSTEES
Bruno Marchini, Chairman
Chip Salmon, Trustee
Paul Marchini, Trustee

Attn: Tim Haddad, Environmental Coordinator

Re: San Rafael Rock Quarry

Dear Mr. Haddad:

Please be advised that I am the Secretary of and Attorney for Union Island Reclamation District No. 1 (RD 1), a public reclamation district, organized and existing pursuant to the Reclamation District Act, set forth in the California Water Code, commencing with section 50,000.

RD 1 is located in the Sacramento-San Joaquin Delta, in San Joaquin County. Reclamation Districts in the San Joaquin Delta, including RD 1, rely on quarry materials to maintain the strength and integrity of the levees within the Delta. These levees are an important part of the State’s ability to move water through the Delta, south to Southern California.

The San Rafael Rock Quarry has long been a major supplier of materials in support of the Delta levees by providing unique access and ability to the Districts for obtaining and placing rock on and about their levees. It is in a unique position to provide all sizes of rock to Reclamation Districts by both water and by truck for maintenance purposes as well as in times of emergency.

RD 1 would like to express its support for the continued operation of the San Rafael Rock Quarry without excess limitations on its ability to timely deliver aggregate to meet the public requests for emergency and preventative applications.

Thank you in advance for your consideration of our position. If you should have any questions, please feel free to call me.

Yours very truly,

AL WARREN HOSLETT
District Secretary

cc: San Rafael Rock Quarry, Inc.
Comment Letter 16: Union Island Reclamation District No. 1

16-1 Please refer to Master Response 12.
Comments on the DEIR for the SRRQ

1. Health risk was evaluated only in terms of lung cancer risk. What are the risks associated with other pulmonary or medical conditions? E.g. asthma, chronic bronchitis, upper respiratory infections, sinusitis, etc.

2. The individual toxins were evaluated for health risks, however, the combined or synergistic impacts were not addressed. Modeling is not the same as evaluating whether or not there are differences in certain categories of health problems (e.g. respiratory disease) based on community health surveys and comparisons to the general population of Marin residents.

3. The alternatives to the “dead” harbor have not been fully analyzed in terms of environmental impacts. For example, if the pit is filled, what type of fill, how deep, for what end use? It is apparent that the harbor idea as proposed does not seem viable. Which alternative would have the least impact? Shouldn’t there be a best alternative identified before allowing the reclamation plan to be approved?

4. Re: blasting: Measures are taken from the ground, however, the perception of shaking is different from ground vs. higher stories in houses. How is this accounted for? How does this reflect in the proposed mitigation?

5. How big were the trucks that were removing materials prior to 1982?

6. Re: noise: 24 hour averages were addressed, however, intermittent peak noise levels that exceed 60 dbs can be disturbing but may not be reflected within a 24 hour value.

7. Pg. 4.3-27 states that most disturbances were already contemplated and approved in the 1982 ARP. However, have there been any changes or modifications to CEQA since then that would alter this? Also, is there more known now about diesel, silica, noise effects, wildlife, etc. than in 1982 and would that alter approval today?

Comment Letter From: Supervisor Susan Adams
Comment Letter 17: Marin County Supervisor Susan Adams

17-1 The Health Risk Assessment (HRA) methodology used for the Draft EIR estimates health risk for numerous types of cancer, not just lung cancer, and also for a broad range of acute and chronic non-cancer effects. In Section 4.2, Air Quality, Impact C4.2-9 discusses cancer risk, Impact C4.2-10 discusses chronic health impacts, and Impact C4.2-11 discusses acute health impacts. The HARP model, which is used to calculate cancer, chronic, and acute health risks, is based on cancer potency factors and relative exposure levels (RELs) established by OEHHA; see OEHHA, 2008, Appendix H, and OEHHA, 2003.

With respect to cancer, the HRA examines multipathway exposure for potentially contracting cancer, including inhalation, dermal exposure and ingestion. The risk is based on an inhalation dose, a dermal dose and an oral dose and the cancer risk is determined by summing the multipathway cancer risk for that substance. The cancer risk from each of the individual substances is summed to give the total multipathway cancer risk for the entire facility at a given receptor location.

Cancer risks from different substances are treated additively in the HARP model, because, as OEHHA states in their Guidelines, many carcinogens act through the common mechanism of DNA damage. Although the summing assumption does not take into account the limited information on substance interactions, the overall uncertainties in cancer potency factors and the variability of response within the human population are far greater than the uncertainty from the assumption of additivity. In addition, the cancers are life threatening serious diseases so it is not unreasonable to consider total additive risk. Therefore OEHHA considers the additive risk approach to be a reasonable assumption.

With respect to noncarcinogenic risks, the HARP model evaluates the health effects on a number of target organs from acute and chronic exposure, including the respiratory system, the eyes, reproductive system, development system, hematologic system, the nervous system, the cardiovascular system, the immune system, the nervous system, and the skin. The effects of various pollutants on the given target organ systems are based on epidemiological studies and the reference exposure levels that were determined from these studies. The effects on particular target organ systems from exposure by specific pollutants are then added to determine a health outcome for that target organ system. Thus, the HRA considers health effects on other pulmonary and medical conditions.

17-2 Synergistic effects of exposure to multiple toxins are addressed in response to comment 17-1. The HARP model does this by adding the health effects that specific toxic substances can have on particular pathways of exposure (i.e., inhalation, dermal exposure, ingestion, mother’s milk, etc.) to come up with a total risk of all substances that are involved in that pathway. In addition, for non-carcinogens, HARP relies on epidemiological data concerning observed health effects of combined effects of specific toxic substances on certain target organs (e.g., respiratory system, eyes, cardiovascular...
system, nervous system, immune system, kidney, etc.) by adding the effect that specific pollutants have on that target organ to determine a total health outcome. Thus, the HARP risk assessment model uses a conservative approach in examining the combined effects of multiple toxic substances on receptors and on particular target organs.

The health outcomes analyzed in this study were based on information gained in epidemiological studies of the general public, and an epidemiological study to determine different rates of disease and mortality for the areas around the Quarry is beyond the scope of an EIR.

17-3 For further analysis of the alternatives evaluated in the Draft EIR, see Master Response 4 in Section 7.2 of this document. CEQA does not require identification of the “best” alternative. CEQA does require identification of the “environmentally superior alternative.” For the Amended Reclamation Plan, the Draft EIR identifies the Mitigated Alternative and the Alternative Reclamation with Alternative Beneficial End Use as coequal in this regard. For the Amended Surface Mining and Quarrying Permit, the Draft EIR identifies the Reduced Project Alternative as environmentally superior. For further discussion of the effects of flooding the Main Quarry Bowl, see Master Response 7 in Section 7.2 of this document.

17-4 For further discussion of effects of blasting, please refer to Master Response 8 in Section 7.2 of this document.

17-5 The 80,000 pound gross vehicle weight limit has been in effect in California for many years. Since 1982, however, the weight of heavy duty trucks themselves (the tare weight of the vehicle) has decreased, allowing for greater payloads.

17-6 Maximum instantaneous noise levels were also monitored and are reported in Section 4.7, Noise and Vibration. See pages 4.7-11 through 4.7-17, including Table 4.7-4 (column marked “Lmax”) and Figure 4.7-2.

17-7 The County completed a checklist-style Initial Study and adopted a Mitigated Negative Declaration prior to approval of the 1982 Amended Reclamation Plan. Statutory requirements, legal decisions, and standards of practice since that time have resulted in much more comprehensive and in-depth environmental review. Nevertheless, the Quarry’s existing 1982 Amended Reclamation Plan and 1974 Surface Mining and Quarrying Permit are valid entitlements granted by the County, and so are properly considered part of the baseline conditions for this combined EIR. See the discussion of baseline on pages 3-17 and 3-18 in Chapter 3, Project Description. Effects of silica, diesel, and noise on people, and various effects on wildlife, are fully evaluated in this EIR, according to current standards of practice and legal requirements of CEQA. The decision to approve the projects remains with the Board of Supervisors, and is not a function of the CEQA document.
April 14, 2008

Tim Haddad, Environmental Coordinator
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, CA 94903

Re: Draft EIR, San Rafael Rock Quarry Amended Quarry Permit and Amended Reclamation Plan

Dear Mr. Haddad:

Thank you for the opportunity to comment on the above-referenced draft Environmental Impact Report (EIR). The San Rafael Rock Quarry proposes to amend its Quarry Permit and Reclamation Plan to cover existing and proposed changes to the quarry operation and eventual reclamation of the site. The draft EIR describes the current quarry operation (consistent with the 1982 quarry permit) as part of the existing conditions. Thus, the draft EIR does not consider these permitted uses as part of the project that is subject to environmental review. The Department of Parks and Open Space (POS) staff is primarily concerned with the project's impacts to McNear's Beach County Park (McNear's Beach), which is adjacent to the quarry.

Alternative Reclamation Plan

The amended reclamation plan describes the Quarry's plans to prepare the site for future non-quarry uses. The reclamation plan would allow for reuse of the site mainly for residential and harbor related purposes. The draft EIR considers two alternatives to the proposed Reclamation Plan: the Mitigated Alternative and the Alternative Reclamation with Alternative Beneficial End Uses proposal. The Mitigated Alternative includes all the mitigation measures identified in the draft EIR for the Reclamation Plan, including filling in the main quarry bowl to raise its depths from 400 feet below mean sea level to an elevation of approximately 30 to 40 feet below mean sea level. The applicant would likely use barges to transport sediment necessary to partially fill the bowl. Both the proposed Amended Reclamation Plan and the Mitigated Alternative include a tidal connection for the main quarry bowl with construction of new jetties.

The Alternative Reclamation with Alternative Beneficial End Uses proposal avoids most impacts to McNear's Beach. This option would not include tidal connection for the main quarry bowl, and thus would not result in additional barge trips to fill the quarry. Thus, this alternative would not result in additional aesthetic, air quality, shoreline, or hazardous material effects to McNear's Beach. In addition, this alternative proposes to use the quarry's northeast quadrant as open space, incorporating it into McNear's Beach. Therefore, this alternative would have the least impact to the park and the most benefit to recreational uses.

Amended Quarrying Permit

The draft EIR also evaluates the impacts from the proposed amended quarrying permit. This permit would increase the quarry's production, hours of operation, and total life span. Although not specifically described in the EIR, it may increase the amount of barge activity at the quarry.
As proposed, the amended quarrying permit would result in significant adverse impacts on McNear’s Beach. Specifically, the proposed project would increase aesthetic, air pollution, noise, water quality, and hazardous materials impacts to the park. Of particular concern is that the project’s increase in damage to park facilities from dust and blasting, requiring extensive maintenance, repair, and replacement of equipment and facilities. The proposed quarry operation schedule would allow the facility to operate from 7:00 a.m. to 10:00 p.m. seven days a week (as compared to the current operations that occur during daylight hours Monday through Friday).

In addition to the issues evaluated in the draft EIR, the document neglected to consider the projects to increase barge use at the quarry. The proposed project would likely significantly increase production levels above the 1982 levels. However, the proposed plan limits quarry-related truck traffic to 250 trips per day, which is less than currently permitted. Although not described in the EIR, it seems obvious that the increased quarry production and reduced truck traffic will result in an increase in barge activities.

The draft EIR describes several alternatives to the proposed project, including the status quo, Mitigated, Reduced, and Barge-Only options. The Mitigated Alternative will reduce impacts to McNear’s Beach by minimizing noise, aesthetics, traffic, and air pollution. In addition, the Reduced Alternative would include these benefits and would further reduce the impacts by constructing enclosures for crushing, sorting, and barge loading operations, paving all roads, and reducing ground motion from blasting. In addition, the Mitigated and Reduced alternative would avoid impacts to evening park users and events by limiting the daily operation time of the quarry to 7:00 a.m. to 5:00 p.m. The draft EIR also evaluated a barge only alternative to the proposed project. Although this alternative would reduce traffic impacts on park users, it could result in significant increase in dust, noise, air pollution, hazardous spill, and visual impacts on McNear’s Beach.

Aesthetics

The draft EIR concludes that the proposed amendments to the quarrying permit will not have a significant visual impact on McNear’s Beach. However, this conclusion does not consider increased barge activity on the aesthetics of the park. As described above, the proposed amended quarry permit would likely result in a significant increase in barge activities, which will be visible from the park. In addition, the mitigation for the proposed reclamation plan that requires filling in the main quarry bowl before opening it to the bay may also significantly increase barge activity in the area. The increase in barges could change the character of the park to be more of an industrial harbor in appearance. This impact would likely be more significant if the quarry implements the barge-only alternative.

In addition, the proposed project includes night lighting necessary to support increased quarry operation times, including lighting of the barge loading area, which is visible from the park. McNear’s Beach is open to 8:00 p.m. during the summer and even later for special events, and the proposed night lighting may be visible. The draft EIR did not evaluate the effect from the proposed lighting on the aesthetics of McNear’s Beach. Although the draft EIR does not address these aesthetic issues, mitigation measure P4.6-6a and b limits the quarry production to 1982 levels and the operation to daylight hours, which would avoid the aesthetic effects on McNear’s Beach.
Hydrology and Water Quality

The draft EIR does not adequately evaluate hydrological and water quality impacts to McNear’s Beach from the amended reclamation plan. In evaluating the hydrologic impacts, the EIR did not consider impacts on shoreline erosion and sand supply from the conversion of the main quarry bowl into a harbor and the construction of rock jetties at the harbor entrance. This component of the reclamation plan could modify the shoreline at McNear’s Beach, which would affect beach use and fishing activities. In addition, the draft EIR evaluated water quality impacts within the main quarry bowl harbor because of poor water circulation within 400-foot deep bowl. However, the draft EIR did not consider whether these impacts would affect other areas outside of the harbor. Since McNear’s Beach is adjacent to the quarry and supports swimming and recreational fishing, the water quality impacts from the proposed harbor may affect recreational uses of the park. Mitigation measure R4.5-6 requires pre-filling main quarry bowl to an elevation of approximately 30 to 40 feet below mean sea level and could reduce potential water quality and shoreline impacts on McNear’s Beach. However, the proposed jetties could still have an adverse effect on the park’s shoreline.

Land Use and Planning

In evaluating the land use and planning impacts from the amended reclamation plan, the draft EIR did not consider the plan’s consistency with the trails element of the Countywide Plan, San Francisco Bay Trail Plan, and the requirements of the San Francisco Bay Conservation and Development Commission. These plans and regulations identify a shoreline trail on the quarry property. In order to be consistent with these requirements, the amended reclamation plan should include this trail. In addition, the draft EIR identifies potential land-use conflicts between the amended reclamation plan and the adjacent park. Specifically, the construction of the berm in the northeast quadrant may have visual and noise impacts on the park. Mitigation measure R4.6-3c, which limits grading activities in the northeast quadrant to 7:00 a.m. to 5:00 p.m. Monday through Friday, is necessary to minimize impacts to McNear’s Beach.

The draft EIR also identifies potential land-use conflicts between the amended quarry permit and the adjacent park. The proposed increase in quarry operations beyond 1982 levels will affect adjacent land uses including recreational use of McNear’s Beach. The Mitigation Measure P4.6-6b, which limits product to 1982 levels, operations to weekday daylight hours, and blasting to two times per week, is necessary to minimize impacts on the adjacent recreational land use.

The proposed amendments to the quarry permit would allow the quarry to operate for approximately 30 years longer than that estimated in the 1982 permit. Even with the mitigations described in the draft EIR, the quarry will continue to have conflicts with adjacent recreational uses and parks operations. The fact that the permit will allow the quarry to operate for 30 years beyond the 1982 permit, means that even the operation of the quarry at previously permitted levels will result in impacts beyond the baseline. The existing operations of the quarry have significant impacts on the park. Specifically, dust from the quarry and ground shaking from the blasting are damaging park facilities, which require substantial repair and maintenance on roads, picnic areas, parking areas, and pool facilities. Because of the extended life of the quarry, the EIR should include mitigation for impacts to the park.
Other Impacts

The proposed amendments to the quarrying permit may have significant adverse impacts on the air quality of McNear’s Beach. Specifically, the air quality impacts from proposed increased quarry operations will adversely affect the health of park users and staff. In addition, the increased dust from the quarry may affect park equipment and facilities and increase park maintenance requirements.

Additionally, the draft EIR did not adequately analyze the impacts from increased barge activities from the Amended Quarry Permit and the proposed mitigation for the Amended Reclamation Plan (the transport of material to fill in the main quarry bowl). These increased barge activity may affect air quality of the park related to emissions from the diesel engines and dust from the quarry material on the barges. In addition, the increased barge activities may result in noise impacts on recreational uses at McNear’s Beach. Finally, the increased number of barges may increase the risk of a fuel spill in the bay. A small fuel spill adjacent to McNear’s Beach could adversely affect water oriented recreation, recreational fishing, and biological resources of the park.

Thank you again for the opportunity to comment. If you have any questions about this letter, please call me at (415) 499-3745 or email me at jraives@co.marin.ca.us.

Sincerely,

James Raives
Senior Open Space Planner
Comment Letter 18: Marin County Department of Parks and Recreation

18-1 This comment is preamble and does not require response.

18-2 This comment describes the alternatives to the Amended Reclamation Plan presented in the Draft EIR. For further analysis of these alternatives, see Master Response 4 in Section 7.2 of this document.

18-3 This comment is consistent with the analysis of the Alternative Reclamation with Alternative Beneficial End Use Alternative presented in the Draft EIR. See also Master Response 4 in Section 7.2 of this document.

18-4 Effects of a potential increase in levels of production on McNear’s Beach County Park and other surrounding land uses are evaluated in the Draft EIR. Aesthetic impacts on McNear’s Beach County Park are considered in Impact P4.1-10 and found to be less than significant. Air Quality impacts are discussed in Impact P4.2-6 and P4.2-7, both impacts are found to be less than significant with mitigation. Because recreational users of the park are not exposed to toxic air emissions of the Quarry for extended periods, their incremental cancer risk and chronic health risk fall below significance thresholds. The Draft EIR does not identify water quality impacts of Quarry operations, and the commenter does not offer new information to suggest that any such impacts would be considered significant. Noise impacts are found to be less than significant with mitigation (Impact P4.7-5 and Impact C4.7-8). A significant and unavoidable impact associated with land use incompatibility is identified in Impact 4.6-7 in Section 4.6, Land Use and Planning. See also Master Response 9 in Section 7.2 of this document.

18-5 The possibility of increased barge traffic associated with future Quarry operations is discussed most thoroughly in Impact P4.2-6 in Section 4.2, Air Quality. Mitigation Measure P4.6-6b in Section 4.6, Land Use and Planning, which would limit operations to 1982 levels would also reduce the likelihood of more frequent barge shipments.

18-6 This comment reviews the alternatives to the AQP presented in Chapter 6 of the Draft EIR. Potential impacts of the Barge Only Alternative are identified and compared with those of the AQP project as proposed in that chapter. See Master Response 4, Alternatives, in Section 7.2 of the current document for further discussion and analysis.

18-7 Impact P4.1-10 in Section 4.1, Aesthetics, states in part, “…the proposed AQP could result in increased production and increased use of barges for shipping material, which could be considered by some to be an adverse aesthetic impact; however, Mitigation Measure 4.6-6b in Section 4.6, Land Use and Planning, would limit production to 1982 levels; no increase in barge traffic is therefore expected.” The analysis of aesthetic impacts of alternatives to the AQP states, in part, “the Barge Only Alternative has the potential to exacerbate the nighttime light and glare impact, and also to cause an impact,
likely less than significant, related to increased barge traffic and barge loading operations.” The basis of the conclusion of less-than-significant is that barge traffic and barge loading are already part of the baseline conditions; an incremental increase would likely not be noticeable to recreational users of McNear’s Beach County Park.

Regarding secondary effects of backfilling the Main Quarry Bowl prior to flooding it, such effects are contemplated in Mitigation Measure 4.5-6 in Section 4.5, Hydrology and Water Quality. See also Master Response 7 in Section 7.2 of this document.

18-8 To address this comment, the text of Impact P4.1-9 is amended as appears below. No additional mitigation, other than Mitigation measure P4.1-9, is required to reduce this impact to less than significant.

**Impact P4.1-9: Proposed nighttime operations would introduce new sources of light and glare (Significant).**

Under the existing Surface Mining and Quarrying Permit and Amended Reclamation Plan, there are no permit restrictions on Quarry hours of operations, nor a record of hours of operations in 1982. ARP82 states, however, that noise generating operations (presumably including barge loading, quarrying activities, and operation of the crushing plant) are generally limited to daylight hours on weekdays, except in case of emergencies. Proposed hours of operation for barge loading, quarrying activities other than blasting, and operation of the crushing plant include nighttime and weekends (see Table 3-9 in the Project Description). These activities would be visible from public vantage points, including the Bay and some vantage points across the Bay, from public roadways, from McNear’s Beach County Park, and from nearby residences. Visible activities that would cause nighttime light and glare would include mining operations on South Hill, operation of the crushing plant, and barge loading operations. Some of these activities, including operation of trucks and mobile equipment, would produce light sources that could not be shielded effectively. Therefore, the proposal would have a significant negative aesthetic effect on existing nighttime visual resources.

18-9 Potential hydrologic impacts of modifying the shoreline associated with planned development of the Main Quarry Bowl as a harbor are evaluated in Appendix I, Coastal Analysis Technical Report, and in Impact R4.5-7 in Section 4.5, Hydrology and Water Quality. See also the responses to comments 19-116 and 19-117.

18-10 Please refer to Impact R4.5-7 in Section 4.5, Hydrology and Water Quality.

18-11 Regarding the planned Bay Trail at the site, please refer to the response to comment 7-2.

18-12 This comment reviews and concurs with mitigation measures contained in Section 4.6, Land Use and Planning, in the Draft EIR necessary to reduce land use compatibility impacts.
Impact C4.6-7 acknowledges the significant unavoidable impact of continued quarry operations, concurrent with phased reclamation activities, on surrounding land uses, including recreational land uses.

The Health Risk Assessment examined the health risks for recreational users of McNear’s Beach County Park, and, as described in the Draft EIR, the effects were found to be less than significant. In response to this comment, the Health Risk Assessment was modified to examine health risks for employees working at McNear’s Beach County Park. The results also indicate less than significant effects vis-a-vis cancer risk, chronic effects, and acute effects, as shown in Table 18-14.1

**TABLE 18-14.1**

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Incremental Cancer Risk (additional cases per million exposed individuals significance threshold is 10)</th>
<th>Chronic Health Risk (Hazard Index Rating; significance threshold is &gt;1)</th>
<th>Acute Health Risk (Hazard Index Rating; significance threshold is &gt;1)</th>
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<td>Proposed Projects</td>
<td>7.28</td>
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<td>Proposed Projects; AQP limited to 1982 production levels</td>
<td>6.12</td>
<td>0.27</td>
<td>0.79</td>
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<td>0.79</td>
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<tr>
<td>Proposed Projects @ 1982 production levels and w/ Biodiesel-80</td>
<td>4.40</td>
<td>0.27</td>
<td>0.79</td>
</tr>
</tbody>
</table>

Increased dust emissions from quarry operations is considered a significant impact. Mitigation Measures P4.2-6a, b, and c would reduce this impact to less than significant.

As stated in the response to comment 18-5, the Draft EIR analyzes the potential for significant impacts of possible increases in barge traffic and loading associated with potential increases in production. Also as previously stated in the response to comment 18-7, secondary effects of backfilling the Main Quarry Bowl prior to flooding it are contemplated in Mitigation Measure 4.5-6 in Section 4.5, Hydrology and Water Quality.
Date: April 14, 2008
File: 1.698.04

Mr. Timothy Haddad
Environmental Coordinator
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, CA 94903

RE: COMMENTS ON DRAFT ENVIRONMENTAL IMPACT REPORT
FOR THE AMENDED RECLAMATION PLAN OF 2004 and SURFACE MINING PERMIT AND OPERATING CONDITIONS

Dear Tim:

On behalf of San Rafael Rock Quarry, Dutra Materials and The Dutra Group (Dutra), this document will provide comments on the Draft Environmental Impact Report (DEIR) analyzing (1) the proposal for review of operating conditions under Surface Mining and Quarrying Permit No. 72-03 (AQP); and (2) the Amended Reclamation Plan of 2004 (ARP04) for the San Rafael Rock Quarry (SRRQ or the Quarry).

I. INTRODUCTION

A. Operating Conditions

Dutra’s proposal for review of ongoing operating conditions was made pursuant to Judge Sutro’s July 15, 2004 Order in Point San Pedro Road Coalition v. San Rafael Rock Quarry, Inc., No. CV 014602 (Marin County Superior Court), on stipulation with the County of Marin (County), which authorized the Quarry to consent to a process of administrative review for adoption of “economically viable” conditions for mining activities without waiver of the Quarry’s vested mining rights. The Order provided for proceedings directly before the Board of Supervisors pursuant to the California Environmental Quality Act (CEQA).

In accordance with Judge Sutro’s Order, the Quarry consented to administrative review of economically viable operating conditions for mining activities without waiving its vested mining rights under Marin County Surface Mining Permit #72-03. The Court Orders also made findings concerning mining operations as they existed in 1982, when the Quarry became a legal non-conforming use. Interim operating conditions were established by Judge Sutro’s Orders.
On October 27, 2004, Dutra submitted its proposal for permanent operating conditions under Surface Mining and Quarry Permit 72-03, pursuant to Judge Sutro’s July 15 Order. The proposal was deemed by the County to be complete on January 14, 2005.

B. **Amended Reclamation Plan**

In his April 12, 2004 Statement of Decision and April 19, 2004 Order, Judge Sutro directed the Quarry to update ARP82 in accordance with SMARA, and directed the County, as Lead Agency under SMARA, to review and act upon the updated plan. Judge Sutro observed that County agencies provide a more appropriate forum for primary review than can be provided by the Court.

On October 12, 2004, Dutra submitted ARP04 for review and approval, noting that proceedings on ARP04 must be separate from those concerning permanent operating conditions under the Quarry’s mining permit. The proposal was deemed by the County to be complete on January 14, 2005.

Consistent with the Court’s Order, ARP04 was prepared using ARP82 as a baseline, with appropriate reference where there was no change, clarification or, in two instances, an amendment to ARP82: (1) the final depth of the Main Quarry Bowl, and (2) the duration of mining operations. The amendments incorporated in ARP04 reflect an increase in average depth of the Main Quarry Bowl to -350’ MSL and a projected duration of mining activities of 15-17 years from the date of approval of ARP04. The proposed amendments and clarifications are consistent with mining activities remaining to be performed under ARP82, current geotechnical studies, resource needs and market conditions.

These amendments and clarifications in ARP04 are also consistent with the Court’s Order and with SMARA, neither of which place limits on depth of surface quarry pits or on their duration, but both of which require amendments to an existing or amended reclamation plan to reflect changed conditions. In his Statement of Decision and Order noted above, Judge Sutro found that SRRQ’s predecessor in interest had manifested an intent to mine the Main Quarry Bowl “without respect to duration or depth” in 1982, and his July 15, 2004 Order acknowledged SRRQ’s vested mining rights and a process of administrative review for adoption of “economically viable” conditions for mining activities.

C. **Significant Local and Regional Resource**

As recognized by the DEIR, the Quarry has operated at this site for more than a century. It has been designated by the California State Department of Conservation, Division of Mines and Geology as a deposit site for regionally significant mineral resources for the North Bay Area, and classified under a Mineral Resources Zone, Class 2 designation (MRZ-2A), the highest
category for known mineral resource deposits. Most of the material produced at the Quarry is used for public works and private development projects within the County of Marin.  

D. General and Specific DEIR Comments

This letter provides comments and objections to the DEIR in accordance with the Notice of Completion of the DEIR. The letter includes, as attachments, additional comments submitted on behalf of Dutra by:

- Farella Braun + Martel LLP (FBM) (legal issues) – Attachment 1
- ENVIRON Corporation (ENVIRON) (air quality) – Attachment 2
- LSA Associates (LSA) (biological resources) – Attachment 3
- Moffat & Nichol (M&N) (harbor feasibility/hydrology) – Attachment 4
- WRA Environmental (WRA) (water quality/species) – Attachment 5
- ENGEO Inc. (ENGEO) (geology, soils and seismicity) – Attachment 6
- Rosen Goldberg Der & Lewitz, Inc. (RGDL) (noise) – Attachment 7

Each of these attached comment letters is incorporated herein by this reference. For convenience, the comments are otherwise organized by section in support of Dutra’s objections to the DEIR.

II. GENERAL COMMENTS/OVERALL ISSUES

Since originally submitting its proposed ARP04 on October 12, 2004, and its proposal for operating conditions under the AQP on October 27, 2004, SRRQ has worked diligently to provide the information needed to fulfill the requirements of CEQA and SMARA for approval of the proposals for each of these projects.

During that time, Dutra has also voluntarily implemented many mitigation measures to reduce noise, dust and vehicle emissions while still meeting public and private needs for this unique and important resource. The DEIR appropriately acknowledges that these measures reduce many impacts to less than significant, and that the absence of this resource would increase greenhouse gas emissions and other environmental impacts.

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1 SMARA Section 2711(a) expressly recognizes that “extraction of minerals is essential to the continued economic well-being of the state and to the needs of the society, and that the reclamation of mined lands is necessary to prevent or minimize adverse effects on the environment and to protect the public health and safety.” Marin Countywide Plan Section 5 acknowledges that SMARA’s “purpose is to ensure that necessary mineral and construction commodities are located reasonably close to their markets and that the reclamation of mined lands prevents adverse effects on the environment.”
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While Dutra agrees with many of the findings of the DEIR, has already implemented many of the proposed mitigation measures and is willing to consider other measures, we offer the following comments to correct aspects of the analysis, findings and recommendations that Dutra and its consultants believe to be flawed. These include the five “unavoidable significant impacts” identified in the DEIR that are neither significant nor unavoidable. Specifically, and as demonstrated in the following pages:

- Air quality impacts from combined emissions from future Phase 1-3 reclamation activities and ongoing mining operations, which the DEIR acknowledges to be less than significant individually, can be avoided by reducing the intensity of one or both of these activities when they would coincide, and by reducing the intensity of Phase 4 reclamation activities after cessation of mining;

- Air emissions from “cut and fill” reclamation activities over the baseline can similarly be avoided and, as such, would not constitute an adverse change from baseline inasmuch as all of this grading was contemplated under the Amended Reclamation Plan of 1982 (ARP82);

- Air impacts from diesel emissions, which the DEIR correctly notes have dramatically declined during the past 20 years, are less than significant when properly analyzed without including past emissions, the erroneous assumption that mining operations will increase by 20 percent, and after correcting other flaws in the analysis;

- Potential impacts to water quality from potential stratification, after the Main Quarry Bowl is flooded for reclamation, can be avoided, if required, by oxygenation, aeration and/or mixing of the water at depth; and

- Impacts acknowledged by the DEIR to be individually less than significant are not, as a matter of law, significant and unavoidable incompatible land uses in combination, nor do neighbors’ complaints make them so, especially where SMARA specifically requires the County to protect the Quarry from incompatible land uses.

As to the third bullet point noted above, the use of past emissions in Health Risk Assessment (HRA) for CEQA review is contrary to BAAQMD CEQA Guidance (BAAQMD 1999). It is also contrary to the practice of ESA, the County’s consultant, in other projects. ESA recently completed a Draft and Final EIR for the Chevron Energy and Hydrogen Renewal Project at the Chevron Refinery in Richmond, California in which two HRAs were conducted for
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separate phases of the project (one of the HRAs was conducted by the BAAQMD).² In neither of the HRAs presented by ESA in that project, including the one conducted by the BAAQMD, were past risks evaluated. If past impacts were used in CEQA review of cumulative impacts for projects involving ongoing industrial operations, very few environmental improvements would be approved, as most would have a history of air quality impacts that are significant, and past emissions are by definition unavoidable.

Since the DEIR combines the proposal for operating conditions under the Mining Permit and the proposal for an amended reclamation plan, which are required by law to be separate, the DEIR is confusing at best, and is inconsistent with the requirements of CEQA. Further confusion, incorrect assumptions and flawed analyses are presented by the DEIR, including:

- Inconsistent and incorrect application of the baseline in determining whether an adverse change has occurred (a prerequisite to finding any significant impact under CEQA);
- Assumptions about proposed mining operations and reclamation activities that are incorrect and inconsistent with Dutra’s proposals;
- Flawed analysis of cumulative impacts and alternatives; and
- Incorrect significant impact findings based on health risk calculations that erroneously include past emissions, including those occurring in years when nearby homes had not even been built.

For the reasons stated below, Dutra objects to these and other flaws in the analysis, findings and mitigation measures presented by the DEIR, and provides the following additional comments for the County’s consideration.

A. Combining of the EIRs

The County acknowledges in the DEIR, at 1-5, that CEQA requires that an EIR prepared for a reclamation plan must focus solely on the impact of reclamation activities, not mining activities. *El Dorado County Taxpayers for Quality Growth v. County of El Dorado*, 122 Cal.App.4th 1591, 1598 (2004); *City of Ukiah v. County of Mendocino*, 196 Cal.App.3d 47, 54 n. 4 (1987). This is required since the reclamation activities are reviewed under different standards than operating conditions and require a different approval process by the Lead Agency under
SMARA. The County’s decision to produce a Joint EIR for both the review of the mining operations and the amended reclamation plan runs counter to this requirement.

As described further in Attachment 1 (FBM at 3-5), while the DEIR separately analyzes some portions of the projects, it fails to provide a separate cumulative impacts analysis for each project and thus commits a clear legal error. By combining the analysis of cumulative impacts the DEIR concludes that AQP will result in cumulative impacts in areas where there is zero individual impact from the project. This is a legal impossibility that must be remedied in the FEIR. See Santa Monica Chamber of Commerce v. City of Santa Monica, 101 Cal.App.4th 786, 799 (2002) (“Just as zero when added to any other sum results in no change to the final amount, so, too, when no environmental impacts cognizable under CEQA are added to the alleged environmental impacts of past projects, there is no cumulative increased impact.”); Sierra Club v. West Side Irrig. Dist., 128 Cal.App.4th 690 (2005) (holding that a project must make some contribution to the impact in order to be characterized as a cumulative impact). The EIR for each project must include a discussion of the cumulative impacts that each project will cause when considering the impact of other projects including the applicant’s other project.

There are other instances where the DEIR fails to separately analyze the impacts from each project, as identified below as they appear in the individual sections of the DEIR.

**B. Appropriate Baseline**

As discussed in Attachment 1 (FBM at 5-6, 10-11), under CEQA, in order for a project to have a significant impact on the environment, the Lead Agency must conclude that there will be “an adverse change in any of the physical conditions within the area affected by the project” and that the change will be caused either directly or indirectly by the project. CEQA Guidelines §15382; § 15358; Eureka Citizens for Responsible Government v. City of Eureka, 147 Cal.App.4th 357, 377 (2007). In order to determine whether there is an “adverse change” in the physical conditions “caused by the project” it is essential for the County to clearly define what the baseline is and how the project is proposing a change from those baseline conditions. See, e.g., Fairview Neighbors v. County of Ventura, 70 Cal. App. 4th 238, 243 (1999).

The DEIR fails in several cases to undertake this crucial step when it makes findings that the projects together will result in “significant impacts” (albeit in some instances the DEIR admits that the impacts will be “less than significant” with mitigation). The specific instances where this error occurs are identified below, and the problem is particularly acute in certain areas.

In a number of instances in the Land Use section, the DEIR concludes that there will be significant impacts without identifying how changed conditions proposed under either the AQP
or ARP04 will cause those impacts. Changes in the physical environment in the areas surrounding the projects are not changes which are “caused by the project.” FBM at 14-16.

Similarly, in the Noise and Vibrations section the DEIR fails to identify how the project will adversely change the intensity of blasting. Finally, although it appears undisputed that 1982 SRRQ operations were not limited to daylight hours, the DEIR consistently attempts to find an impact compared to only daylight hours without identifying the extent to which the current and proposed operating conditions differ from the 1982 baseline. FBM at 16-17.

A section-by-section response on these and other issues is provided below and in the attached comment letters.

III. CHAPTER 1 - INTRODUCTION

No comment, except as noted above.

IV. CHAPTER 2 - SUMMARY

- Page 2-7: The discussion of ARP04 on pages 2-2 to 2-4 contains a list of the changes/revisions between ARP82 and ARP04, but the same is not done for the AQP on 2-7. It is crucial that the EIR make clear what adverse changes, if any, would result from each separate project relative to the baseline.

- Page 2-7: As Dutra has previously advised the County, the reference to a limitation of weekday hours for maintenance activities is incorrect and should be deleted. There is no such limitation in the July 15, 2004 Court Order establishing interim operating conditions, and Dutra has proposed to adopt those conditions permanently.

- Page 2-14: As discussed in greater detail below, the “Reduced Alternative” is not supported by the findings or recommendations contained elsewhere in the DEIR, and is not reasonable or, in many respects, feasible.

V. CHAPTER 3 - PROJECT DESCRIPTION

- Page 3-1: In the second paragraph the DEIR explains that “for the sake of convenience and clarity” environmental reviews of the two projects were combined into one EIR. This should be deleted. The explanation should state that the projects will be analyzed and approved separately.
Page 3-15: The DEIR notes the Marin County Superior Court’s finding that SRRQ’s predecessor-in-interest had manifested an intent to continue mining to the extent that doing so was profitable without respect to depth or duration of the mine pit. The DEIR should adopt this finding and explain that it means that as found by the Court Dutra has a vested right to mine without limit on depth or duration. FBM at 1-3.

Page 3-25: The Amended Reclamation Plan objectives should also include the objective that the Plan results in “an economically viable re-use of the property.” While not expressly stated by Dutra this is an implicit objective under CEQA and should be included here for the sake of clarity. *Association of Irritated Residents v. County of Madera*, 107 Cal.App.4th 1383, 1399 (2003) (finding that “economic feasibility is implicit in the project objective.”).

Page 3-77: As stated elsewhere in the DEIR and on this page, SRRQ operations were formerly “generally limited to daylight hours” which means that, at times, operations continued into the evening hours. ARP82 included requirements that nighttime lighting be shielded, and witnesses at the 2003 trial in Marin County Superior Court testified to nighttime operations. Thus, the statement in the table that there will be a change in the amount of lighting required when compared to the baseline is incorrect. FBM at 5-6.

VI. CHAPTER 4 – ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

A. Aesthetics (Section 4.1)

1. Amended Reclamation Plan

Page 4.1-15 - Mitigation Measures R4.1-1a and 1b: The Quarry will make its best efforts to preserve the historic structures identified as being preserved by ARP82. It should be noted that the Signal House was not a structure identified to be preserved in ARP82 and thus its removal would not be an adverse change according to CEQA. In addition, the DEIR should recognize that relocating structures to preserve their historical significance is a viable mitigation.

2. Amended Surface Mining and Quarrying Permit

Page 4.1-25 - Impact P4.1-9: The Quarry has shielded all lights to minimize glare visible from public vantage points. This was provided in
ARP82 and clearly supports the conclusion that night operations were proposed to continue at the time ARP82 was approved. The night lights are not “new” and should be identified as a part of the baseline condition. FBM at 5-6. Hence, the Quarry need not restrict night operations in order to avoid an adverse change from baseline, and thus, this mitigation measure is unnecessary.

B. Air Quality (Section 4.2)

As discussed in Attachment 1 (FBM) and Attachment 2 (ENVIRON), the incorporation of the risk from emissions from past Quarry operations is inappropriate under CEQA. Events that have occurred in the past are assumed to be part of the existing environmental conditions and are not part of the determination of whether there is a significant adverse change relative to the baseline identified in the DEIR. In fact, the DEIR correctly acknowledges that air emissions from Quarry operations have been reduced compared to baseline historical operations. Past risk is not part of the proposed projects and should not be included in calculations to determine whether the proposed projects will have individually or cumulatively significant impacts under CEQA. FBM at 8-14; ENVIRON at 2-7.

Not only is the use of past emission data inappropriate as a matter of law and science, the nearest homes (those with the highest estimated cancer risks) were not even constructed in the period of higher emissions in the 1980s, making exposure and risk calculations spurious at these locations. It is only by erroneously including these diesel emissions of the past that the health risk calculation produces a number above the level of significance. ENVIRON at 1-7.

In addition to the faulty use of past emissions, the methodologies used in the DEIR to calculate past risk are contrary to current guidance on risk assessment. These problems include the use of future worst case assumptions about the duration of residence and the amount of time that an individual is physically present at their home, rather than actual past exposure data, and an assumed breathing rate that is contrary to CARB, OEHHA and BAAQMD guidance, which individually and in combination add to the overestimation of risks. ENVIRON at 4-5.

The DEIR also incorrectly concludes that the increase in daily emissions for NOx, CO, and PM-10 from ARP04 would be significant and unavoidable. These emissions are not unavoidable since the impacts can be mitigated by either staggering the activities or conducting them over a more extended period of time. ENVIRON at 2-7. For Phases 1-3, which are proposed to be conducted while quarrying activities are still ongoing, the intensity of mining operations can be reduced while reclamation activities are conducted so that the total emissions are below the significance threshold. For Phase 4, the intensity of the reclamation activities can be reduced so that emissions are below the thresholds for CO, NOx and PM10. ENVIRON at 5-7.
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The DEIR correctly concludes that crystalline silica poses no health risk or significant environmental impact. Crystalline silica is a common, naturally occurring component of soil and windblown dust in ambient air. Estimated concentrations in the area of the Quarry are 1.7 µg/m³, well below the national average ambient levels of 3 µg/m³ and OEHHA’s Recommended Exposure Limit (REL), even using the analytic method employed in the DEIR, which would overestimate the fraction of crystalline silica existing in the rock from the Quarry. ENVIRON at 7-10. In sum, the additional data and analysis provided by ENVIRON supports the conclusion in the DEIR that the Quarry is not a source of elevated levels of crystalline silica, and that ambient levels of crystalline silica in the area of the Quarry pose no significant impact or health risk.

Finally, as the DEIR acknowledges, restrictions on Quarry operations could increase, rather than decrease, environmental impacts. The majority of material produced by San Rafael Rock Quarry is used locally. If Quarry operations were curtailed, aggregate would be sourced and transported from quarries at remote locations, including Canada. The increased greenhouse gas (GHG) emissions required to transport materials from these sources would total approximately 4,528 metric tons of CO₂ per year. When transportation of aggregate to the Delta locations for levee projects is considered, an additional 2,353 metric tons of CO₂ per year would result, for an overall increase in GHG emissions approaching 7,000 metric tons of CO₂ per year. ENVIRON at 10-13. This increase would run counter to the GHG emission reductions goals recognized by Marin County and the State of California.

1. Amended Reclamation Plan

a. General Comments

The EIR should note that SMARA requires reclamation of the site when mining is completed, including grading, soil stabilization, revegetation, and other activities relating to land shaping and second use development -- and inevitably, associated dust and heavy equipment emissions. See Cal. Pub. Res. Code §§ 2770, et. seq.; 14 Cal. Code of Regs. §§ 3700 et seq.

The EIR should also note that a phased approach to reclamation was suggested by the County.

CEQA requires that the EIR identify how the project will differ from the baseline conditions. The Air Quality analysis currently lacks a discussion of how the emissions from phased reclamation (and any health impacts from those emissions) would compare to the emissions if the reclamation occurred all at once, as is the case in the baseline ARP82. Similarly, the Health Risk Assessment
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does not contain any discussion of how the impacts from the proposed projects would differ from the impacts that would have been realized if 1982 conditions had continued.

b. Specific Comments by Page

- **Page 4.2-30 - Mitigation Measure R4.2-1a:** The Quarry has voluntarily converted its rolling stock to biodiesel and will continue to use biodiesel as long as it is available and technically feasible.

- **Page 4.2-30 - Mitigation Measure R4.2-1b:** The Quarry initiated upgrades to its off road equipment in 2007. Included in the process, the Quarry replaced eight lower rated haul trucks with three Tier 3 trucks and, to meet more demanding mining needs, three heavy duty Tier 2 rock trucks were acquired. The latter trucks were and remain the most Tier compliant in their class. As additional trucks are needed, they will be Tier 3 compliant if available.

The Quarry encountered some difficulty with the suitability and availability of other upgraded off road equipment. It has, however, eliminated seven pieces of older equipment which will be upgraded when put back in service. Of that which remains, the program of upgrading this equipment to Tier 3 status, and upgrading the company-owned tug to Tier 2 status, will continue on an expedited basis and will be completed before year end.

- **Page 4.2-31 - Mitigation Measure R4.2-1c:** The Quarry has voluntarily implemented the dust control mitigation measures suggested.

- **Page 4.2-32 - Mitigation Measure R4.2-1d:** The Quarry will continue to use alternative fuel as long as it is available.

- **Page 4.2-32 - Mitigation Measure R4.2-1e:** The Quarry has voluntarily implemented the dust control mitigation measures suggested.
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- **Page 4.2-33 - Mitigation Measure R4.2-1f:** The Quarry has voluntarily implemented the regularly serviced, well tuned mitigation measures suggested.

- **Page 4.2-33 - Mitigation Measure R4-2.1g:** At this time the technology to burn B-80 does not exist. The Quarry expects to upgrade to B-80 when the product is feasible and available.

- **Page 4.2-33 - Mitigation Measure R4-2.1h:** The Quarry has implemented the engine 5 minute idle limit mitigation measure suggested.

- **Page 4.2-35 - Mitigation Measure R4.2-2a:** See Response to R4.2-1b, above.

- **Page 4.2-35 - Mitigation Measure R4.2-2b:** The Quarry has voluntarily implemented the dust control mitigation measures suggested.

- **Page 4.2-36 - Impact R4.2-3 and Table 4.2-12:** The analysis of greenhouse gas (GHG) emissions should analyze how the proposed project results in an adverse change (if any) from the baseline.

- **Page 4.2-37 - Mitigation Measures R4.2-3a through R4.2-3c:** The Quarry has voluntarily implemented the mitigations suggested. The GHG reduction plan will be submitted based on projected reclamation activities. See note on biodiesel use above for R4.2-1a.

2. **Amended Surface Mining and Quarrying Permit**

   a. **Specific Comments by Page**

   - **Page 4.2-40 - Fourth Paragraph:** In the discussion of Impact P4.2-6 the DEIR assumes a 20% increase in production levels above the baseline. This is an arbitrary and incorrect assumption and should be deleted. The analysis of criteria air pollutants should be recalculated with the assumption that operations will continue
unchanged, subject to the operating conditions in place and proposed by Dutra to continue. FBM at 8-9; ENVIRON at 1-5.

- **Pages 4.2-40 and 41 - Mitigation Measures P4.2-6a and R4.2-6b**: The Quarry has voluntarily implemented the mitigation measures suggested. See Response to R4.2-1b, above.

- **Page 4.2-41 - Mitigation Measure P4.2-6c**: The project proposes no increase in production levels and the assumed 20% overages are unfounded based on historical annual production records including years in which emergency demands were serviced. For the reasons stated above, this mitigation measure is unnecessary as it is based on this incorrect assumption. It should be deleted. FBM at 8-9; ENVIRON at 1-5.

- **Page 4.2-42 - Mitigation Measures P4.2-7a through P4.2-7c**: The Quarry has voluntarily implemented the mitigation measures suggested. The Quarry plans to continue to use biodiesel to the extent it is feasible and available.

- **Page 4.2-41 - Impact P4.2-7**: The DEIR assumes a 20% increase in production levels above the baseline. This is an arbitrary and incorrect assumption and should be deleted. The analysis of GHG emissions should be recalculated with the assumption that operations will continue unchanged, subject to the operating conditions in place and proposed by Dutra to continue. FBM at 8-9; ENVIRON at 1-5.

- **Page 4.2-42 - Mitigation Measure P4.2-7d**: See Response to P4.2-6c, above.

- **Page 4.2-42 - Mitigation Measure P4.2-7e**: When properly analyzed and considering existing mitigation measures, GHG emissions are reduced below this threshold. ENVIRON at 2-7.
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- **Page 4.2-43 - Health Risk Assessment:** The Health Risk Assessment should include separate analyses of AQP and ARP04. The current discussion does not separately identify the adverse changes, if any, posed by each project. In addition the discussion uses flawed assumptions and analyses, and therefore fails to fulfill the requirements of CEQA. FBM at 10-14; ENVIRON at 2-5.

3. **Cumulative Impacts**

   a. **Specific Comments by Page**

   - **Page 4.2-46:** In the second to last paragraph the DEIR discusses the emissions from barge operations. Along with making an incorrect assumption regarding the increase production levels (FBM at 8-9), this analysis fails to include a discussion of the likely improvements that will occur in tug-boat emissions over time. As with diesel truck technology, increased regulatory pressure and improved technology will reduce emissions from tug-boats as time goes by. *See, e.g.* EPA Diesel Boat and Ships (March 14, 2008) available at: [http://epa.gov/otaq/marine.htm](http://epa.gov/otaq/marine.htm) ("In March 2008, EPA finalized a three part program that will dramatically reduce emissions from marine diesel engines below 30 liters per cylinder displacement. These include marine propulsion engines used on vessels from recreational and small fishing boats to towboats, tugboats and Great Lake freighters, and marine auxiliary engines ranging from small generator sets to large generator sets on ocean-going vessels. The rule will cut PM emission from these engines by as much as 90 percent and NOx emissions by as much as 80 percent when fully implemented."). CARB also has a proposed rulemaking that may increase the fleet turnover to clean engines for marine vessels. *See* ["http://www.arb.ca.gov/ports/marinevess/harboarcraft.htm"]("http://www.arb.ca.gov/ports/marinevess/harboarcraft.htm")

- **Page 4.2-50 - Table 4.2-15:** The table should be modified to include what the emissions would have been under the baseline conditions so the reader understands what change, if any, would result.
C. **Biological Resources (Section 4.3)**

1. Amended Reclamation Plan

   a. General Comments

   While the DEIR recognizes the impacts of the two projects on the current biological resources, specific areas need to be clarified as noted in the letter from LSA Associates included as Attachment 3 (LSA). These areas include issues with the naming conventions used for various species and the proper identification of habitats and species that could possibly be present at the site. In order to properly identify and protect any sensitive species which may exist on the site further surveys should be conducted prior to the commencement of reclamation activities. Attachment 3 (LSA).

   Mitigation measures for Section 4.3 are acceptable to the Quarry with the exception of the discussion on 4.3-7 and the mitigations listed under 4.3-18 which are discussed elsewhere herein.

   b. Specific Comments by Page

   - **Page 4.3-35 – Mitigation Measure R4.3-5a:** The marshes will be preserved but may not be returned to full tidal flow and thus the reference to “tidal exchange” should be...
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changed to “tidal control” to dampen inflow. Attachment 5 (WRA at 1-2).

- **Page 4.3-40 - Impact R4.3-7:** This impact refers to the potential poor water quality in the Main Quarry Bowl after flooding. The impact is noted as “significant and unavoidable” seemingly due to the EIR preparer’s unwillingness to recognize that deep water aeration or mixing of water is feasible and has been demonstrated at other projects. See Attachment 4 (M&N at 7-8); Attachment 5 (WRA at 2-3). M&N at 7-8; WRA at 2-3. The FEIR should identify whether this mitigation is feasible and the impact is avoidable and less than significant after mitigation.

2. **Amended Surface Mining and Quarrying Permit**

   a. **General Comments**

      The DEIR fails to explain what adverse changes, if any, are posed relative to the baseline AQP conditions that would support the finding of significant impacts.

   b. **Specific Comments by Page**

      - **Pages 4.3-49 and 50 - Impact P4.3-13:** The adverse changes, if any, between the 1982 baseline conditions and the proposed project must be identified in this Section.

      - **Pages 4.3-51 to 53 - Impact P4.3-15:** The adverse changes, if any, between the 1982 baseline conditions and the proposed project must be identified in this Section.

      - **Page 4.3-55 - Impact P4.3-17:** As the Court found, the baseline conditions under AQP did not include any limits on duration of mining. Impact P4.3-17 must identify the adverse change, if any, from baseline conditions as defined by the Court.
3. Cumulative Impacts

a. General Comments

Impact C4.3-18 suggests returning the marsh to tidal action. The FEIR needs to address the impact of salt water tidal flows on the fresh water brackish marsh that currently exists. Returning the marsh to full tidal flows would jeopardize the ecology of the marsh and cause flooding of Point San Pedro Road. Tidal inflow to the marsh should, instead, continue to be subject to existing controls. WRA at 1-2. Further, recognition of the methods of vector control should be addressed as an additional impact of this proposed mitigation.

b. Specific Comments by Page

- **Page 4.3-56 - Impact R4.3-18:** The DEIR should recognize that the existing marsh in the NW Quadrant is primarily a freshwater marsh fed by intermittent winter runoff from a limited watershed. The Quarry is willing to complete a marsh restoration plan, but the plan should not include a return to tidal inundation. WRA at 1-2.

- **Page 4.3-57 &58 - Mitigation Measure C4.3-18b:** The conclusion that tidal restoration is the only feasible means to improve habitat quality in the marshes is incorrect. An analysis of the wetlands using the California Rapid Assessment Method (CRAM) found that the West Wetland has an assessment score of 73.7% and has characteristics of a well-functioning non-tidal seasonal salt marsh. WRA at 1-2. It is the two smaller wetlands to the northeast of the access road that are impaired, and the impairment is due to such factors as stormwater runoff, invasive plant species, trash, and damage from vector control vehicles. WRA at 2. Thus, there are potential ways to improve the marsh habitats without requiring full tidal exchange, and they should be considered when the significant constraints to full tidal restoration are taken into account. The mitigation measure should be revised in the manner detailed in the WRA letter and report. WRA at 1-2 and Attachment.
D. **Geology, Soils, and Seismicity (Section 4.4)**

The geotechnical concerns raised by Seidelman in Appendix K of the DEIR are thoroughly addressed in the letter from ENGEIO. See Attachment 6 (ENGEIO).

The methods used by ENGEIO to predict the impacts from seismic activity on the post-mining second-use slope stability were thoroughly reviewed by the State Office of Mine Reclamation (OMR) and are in keeping with the appropriate standard of care for residential and commercial projects, as explained in Reference 2 of ENGEIO’s original analysis. ENGEIO at 3-5. A deformation analysis was also conducted by ENGEIO which showed only negligible slope deformation and further studies can be conducted at a time closer to development if assessment methodologies have improved. ENGEIO at 4. Finally, mitigation of any risk associated with development of fill areas will be thoroughly analyzed at the time of second use development. ENGEIO at 4.

The Mitigation measures for Section 4.4 are acceptable and some (R4.4-2a) have been implemented in on-going operations.

E. **Hydrology and Water Quality (Section 4.5)**

The Mitigation Measures for Section 4.5 are acceptable to the Quarry with the exception of those that apply to the discussion of potential poor water quality (R4.5-6).

The technical memorandum prepared by Coast & Harbor Engineering (CHE) raises some questions about particular assumptions or conclusions made in the feasibility study prepared by Moffat & Nichol. Attachment 4 (M&N) provides responses to all the questions raised by CHE on this topic.

In particular, based upon the evidence of sand transport in the area, the assumptions made in the feasibility study regarding the installation of jetties, the sedimentation of the entrance channel, and the appropriate design of the channel remain accurate. It is not expected that the sand transport processes would be significant enough to substantially invalidate the project as proposed. M&N at 1-6. We agree that more comprehensive wind data would need to be used to conduct a wind wave analysis, the current discussion should be used for navigation and boating feasibility and not for a full wave analysis. We further agree that Best Management Practices (BMPs) will need to be used by the landside property owners as well as the marina users in order to help maintain good water quality in the marina. In sum, the questions raised in the DEIR do not change the ultimate conclusions about feasibility but rather simply highlight areas that would be fully modeled prior to flooding of the bowl.
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- **Page 4.4-18 - Mitigation Measure R4.4-2b:** This refers to a mitigation measure, R4.5-1, which is not found in the DEIR. Please clarify.

- **Page 4.5-15 - Impact R4.5-6:** As noted above, the deep water in the quarry bowl can be aerated or mixed, if required, to avoid the impacts assumed in the DEIR. M&N at 7-8; WRA at 2-3. Further, the alternative to use the quarry as a fresh water storage reservoir is unrealistic due to the lack of a suitable water source to fill the basin and the fact that the depth of the Quarry bowl would be such that the same water quality issues would be present as are discussed in the DEIR for the saltwater option.

**F. Land Use and Planning (Section 4.6)**

1. **General Comments**

   - **Page 4.6-3:** First full paragraph should note that the condominiums are a part of the Heritage Drive development not the Marin Bay Park which contains only single family dwellings.

   - **Page 4.6-5:** As noted elsewhere, ARP04 and AQP04 are not subject to the 2007 Marin Countywide Plan since both applications were deemed complete in January 2005 and subject to the 1994 Countywide Plan.

   - **Page 4.6-20:** Under the paragraph describing OMR, it should be noted that SMARA was not only created to ensure reclamation but, just as importantly, to require the Lead Agency to protect mineral resources within its jurisdiction by creating and maintaining adequate buffers between the mineral resource and from adjacent potentially incompatible development. The DEIR cannot fail to provide a complete assessment of SMARA’s intent in this regard.

2. **Amended Reclamation Plan**

   a. **General Comments**

      None
b. Specific Comments by Page

- **Page 4.6-26 - Mitigation Measure R4.6-3a:** The Quarry has installed broadband backup alarms as the Mitigation measure suggests. See Attachment 7 (RGDL).

- **Page 4.6-27 - Mitigation Measure R4.6-3b:** It should be further noted that the Quarry proposed the berm as mitigation consistent with the intent of ARP82. ARP82 proposed a berm to separate the nearest adjacent housing (at that time San Marino Drive) and the Quarry. The proposed berm in the NW Quadrant is consistent with this intent based on the residences that have been constructed since 1982. The temporary noise impacts during construction will be off-set by longer term visual relief and noise reduction for the adjacent neighbors. FBM 15, 19-20.

- **Page 4.6-27 - Mitigation Measure R4.6-3d:** The Quarry currently notifies the County and the City and posts notice of blasting activity on its website. That same provision of notice will be applied to the anticipated reclamation grading when it occurs. However the FEIR should define what it means by requiring that these postings must meet the “public at large” criteria. The term “public at large” is vague and not appropriate unless more accurately defined.

- **Page 4.6-29 - Mitigation Measures R4.6-5a and R4.6-5b:** The mitigation measure is one that was proposed by the Quarry. However it should not be inferred, as the DEIR implies, that maximum reclamation activities will be allowed to coincide with maximum mining activities. The impacts can be avoided. FBM at 3-8; ENVIRON 2-7.

3. Amended Surface Mining and Quarrying Permit

- **Page 4.6-30 - Mitigation Measure R4.6-6a:** Dutra made the proposal to limit trucks to 250 per day based on the Court’s findings as to 1982 operations, and this was adopted in the Court-ordered interim operating conditions. The proposal for continued operations would not change this operating condition. As noted in the DEIR, this is a reduction in trips from the 1982 truck traffic.
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- **Page 4.6-30 - Mitigation Measure R4.6-6b:** As noted earlier the proposed project does not increase production levels by 20%. FBM at 8-9; ENVIRON at 1-2. ARP82 provided for light shielding, indicating that night operations were proposed to continue at that time. They should therefore be considered part of the baseline. Blasting frequency will be an “average” of two times per week, unchanged from the 1982 frequency identified in the 1982 report of Charles Salter Associates referenced in the DEIR. Blasting has averaged less than twice per week, not three times per week as suggested in the DEIR. FBM at 5-6, 8-11, 16-17. Furthermore, using the word “approximate” is unnecessary, vague and potentially confusing.

4. **Cumulative Impacts**

- **Page 4.6-31 - Impact C4.6-7:** The DEIR needs to clarify that conducting reclamation activities concurrent with mining was a request that the County made of the Quarry in 2004. The DEIR erroneously combines the analysis of the two projects and incorrectly assumes that the level of each activity would occur at peak levels concurrently. This ignores the potential of reducing the intensity of or phasing the two activities to ensure the minimum of overlap, ignores the fact that reclamation activities are only scheduled to last for 8 to 10 weeks each year, and that they will occur in different locations year to year, thereby reducing impacts to below a level of significance. The DEIR should recognize these options for implementation of future reclamation and mining activities. ENVIRON at 1-7; FBM at 5-11.

- Also, the levels of activity at the Quarry do not exceed those anticipated when the existing land uses were put in place. For example, page 7 of the Mitigated Negative Declaration that was prepared for the Marin Bay Park subdivision specifically identifies noise impacts from the Quarry and suggests mitigation measures to be implemented by the developers to avoid incompatible land uses. The noise levels predicted in that document are higher than those measured and reported in the DEIR.

- **Page 4.6-31 - Impact C4.6-7:** The discussion of Impact C4.6-7 fails to separately discuss the impacts from each project and to
explain the difference from the baseline which results in the significant impact finding. The EIR must make separate cumulative impact findings for each project. For a more detailed discussion of the problems with this analysis see FBM at 3-5.

G. **Noise and Vibration (Section 4.7)**

1. **General Comments**

   In Attachment 7, Rosen Goldberg Der & Lewitz, Inc. (RGDL) provides additional information on the various mitigation measures that the Quarry has implemented to reduce noise impacts since the measurements taken for the DEIR were taken. These measures include installation of a thick rubber lining applied to the metal surfaces that rocks normally hit as they are directed onto and off of the barge loading conveyor belt. Before and after noise measurements have found that the rubber lining reduced these elements of the barge loading noise. RGDL at 1-2. Additionally, the other primary source of noise that was identified by the Initial Study, back-up beepers, has been improved through the installation of broadband back-up alarms which emit a less noticeable warning sound. RGDL at 1-2.

   The benefits of these measures have not been reflected in the noise measurements prepared for the DEIR and their installation should thus be noted as it is anticipated that they will reduce noise even further.

   - **Pages 4.7-21 and 22:** The references to the “The Benchmarks for Allowable Noise Exposure from Stationary Sources” should be struck as they are referencing a standard which the DEIR has already noted is not applicable here.

   - **Page 4.7-15:** According to Table 4.7-1 the “normally acceptable maximum Ldn is 70 for churches NOT 60 dBA, Ldn as the DEIR states. Thus, for monitoring site ST-1 the results should be “normally” and not “conditionally” acceptable.

   - **Page 4.7-16:** The same problem occurs for ST-3, the table shows 70 dba-Ldn as normally acceptable NOT 60 dBA and 67-75 as conditionally acceptable. While under either conclusion the noise at this site falls within the normally acceptable category, the error should still be corrected.
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- **Page 4.7-17:** The levels for ST-7 are 59.6 dBA, Leq, not 60 dBA, Leq.

- **Page 4.7-18:** The range of "recommended vibration limits" is .5-20. The DEIR notes that one blast had a .49 in/sec measurement. First, this is below .5, and second, even then it is in a range of up to 20 and it would be at the bottom extreme of the recommended range, thus the emphasis put on this blast is inappropriate and should be removed. Furthermore, there is no adverse change in blasting, and neighbors’ complaints do not provide a basis to find a significant impact. FBM at 15-17.

2. **Amended Reclamation Plan**

a. **Specific Comments by Page Number**

- **Page 4.7-23 - Impact R4.7-1:** Impacts from construction and removal of the temporary berm should not be found to pose an unavoidable significant impact. FBM at 15.

- **Page 4.7-23 - Mitigation Measure R4.7-1a:** Broadband backup alarms have already been installed. RGDL at 1-2.

- **Page 4.7-24 - Mitigation Measure R4.7-1b:** As noted above, the Quarry has suggested these mitigations as a part of the application.

3. **Amended Surface Mining and Quarrying Permit**

a. **Specific Comments by Page Number**

- **Page 4.7-28:** Impacts from blasting must include an objective standard against which the impacts can be measured. There is no evidence that there is an adverse change posed by the project to constitute a significant impact, and thus, a finding of significance is inappropriate. FBM at 16-17.

- **Page 4.7-28:** In the bottom of the first full paragraph the DEIR contains a reference to Land Use Impact 4.6-1 which discusses agricultural land impacts. This does not appear to
contain the discussion that is supposed to be referenced. Please clarify.

- **Page 4.7-28-31 - Impact P4.7-7:** The DEIR must show that there has been an adverse change from baseline conditions in order to conclude there is a significant impact. FBM at 5-6, 9-11, 16-17. No such change can be shown here. The Quarry does not propose any changes to blasting which would increase the level of vibrations.

- **Page 4.7-30 - Mitigation Measure P4.7-7a:** As noted in the report by REVEY Associates (Appendix J to the DEIR), the vibrations likely to result from blasting do not exceed allowable thresholds. The City and County have approved residential development in Marin Bay Park and on Heritage Drive, as contemplated in 1982, and were required by SMARA to maintain a buffer to protect the Quarry from incompatible land uses. FBM at 7-8, 14-16.

- **Page 4.7-30 and 4.7-31 - Mitigation Measure P4.7-7b:** These mitigations have been voluntarily implemented by the Quarry.

- **Page 4.7-31:** As noted above for page 4.7-28, the reference to Impact 4.6-1 is incorrect.

- **Page 4.7-31:** As there is no adverse change in the proposed operating conditions with respect to blasting, it is inappropriate to conclude that blasting supports a finding of significant impact or incompatible land use. FBM at 5-6, 9-11, 16-17.

4. **Cumulative Impacts**
   
a. **General Comments**

- **Page 4.7-31:** There is no change in the baseline conditions for AQP. It is therefore inappropriate to find cumulative impacts in this section or to import this finding to the Land Use section. FBM at 5-6, 9-11, 16-17.
H. Hazards and Hazardous Materials (Section 4.8)

1. General Comments

The mitigations identified by the DEIR in section 4.8, with the exception of P4.8-3b are acceptable to the Quarry.

2. Amended Surface Mining and Quarrying Permit

   • Page 4.8-11 - Mitigation Measure P4.8-3b: The Quarry currently maintains a Hazardous Material Business Plan which addresses the issue of blasting. A separate blasting plan is unnecessary and could be confusing and conflict with the Hazardous Material Business Plan.

I. Public Services, Utilities, and Energy (Section 4.9)

1. Specific Comments by Page

   • Page 4.9-4 - Third Paragraph: The DEIR should note on Page 4.9-4 that the Quarry has a new Caretaker's residence, septic tank and leachfield. These were constructed with all the required permits from the County and completed in 2007. This brings the total number of septic systems on the site to three.

J. Transportation and Traffic (Section 4.10)

1. Amended Surface Mining and Quarrying Permit

   • Page 4.10-9: As noted elsewhere, The DEIR fails to recognize that the consideration of "cumulative mining and reclamation" does not automatically mean that all mining and reclamation activities will be concurrent. Additionally it should be recognized in the DEIR that all of the work anticipated with Mining and Reclamation anticipated in ARP04 is required under ARP82 and its associated Quarrying permit. This is not a new impact, is therefore not an adverse change, nor does it create a potentially significant impact. FBM at 5-7, 9-11, 14-16.
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K. Population and Housing (Section 4.11)  
No Comments.

L. Cultural Resources (Section 4.12)  
1. General Comments  
   - The mitigation measures for pre-historic and paleontological resources are acceptable. However, the mitigation measures for historic structures have not used ARP82 baseline correctly. For example there was no expectation in ARP82 that the Signal House would be preserved - in fact it is in an area that was designated for mining in ARP82.
   
   - Page 4.12-1 - Setting: This section fails to recognize the structures listed were not scheduled for preservation in ARP82.

VII. GROWTH-INDUCING EFFECTS  
No Comments.

VIII. CUMULATIVE IMPACTS  
The DEIR fails to include a separate analysis of cumulative impacts for each project. This needs to be corrected here and throughout the DEIR. FBM at 3-5, 10-11.  

   - Page 5-7: The section on the Haystack Landing Asphalt and Recycling Facility takes potential impacts from the Haystack DEIR out of context with no frame of reference for the reader to understand. For instance, the Haystack plan allows transfer of aggregate by water thereby eliminating potential future truck traffic in Marin and Sonoma Counties.

IX. ALTERNATIVES TO THE PROJECT  
A. Alternatives Generally  
   CEQA requires that the Lead Agency consider a reasonable range of potentially “feasible alternatives.” § 15126.6. The alternatives considered by the DEIR do not fulfill the legal requirements of CEQA nor would they meet project objectives. FBM at 17-18; see also ENVIRON at 10-13.
B. Alternatives to the Amended Reclamation Plan

- Page 6-22 - Table 6-2: The list of project objectives should include economically viable re-use. FBM at 17-18.

- Page 6-8: The discussion of the hydrology and water quality impacts of the mitigated alternatives is severely inadequate. The potential hazards of dumping dredge spoils in the quarry bowl needs more analysis. Similarly, if the Alternative Beneficial End Use of using the Quarry bowl as a freshwater reservoir were implemented there would be similar problems relating to circulation at the depths of the bowl which should be noted.

C. Alternatives to the Amended Surface Mining and Quarrying Permit

- Page 6-25 and 26: The reduced alternative raises numerous feasibility issues that need to be examined further in the DEIR. For example, the feasibility of the proposal to further reduce the already less-than-significant noise impacts through the enclosure of the crushing, sorting and barge loading operations is not examined at all. Due to the size and type of aggregate processed by Dutra enclosure would not be possible.

It is feasible to enclose a facility such as the Polaris plant in Richmond, because its activity is limited simply to transferring a finished, small-size rock product. By contrast, SRRQ processes mined rock of all shapes and sizes, including rip rap and jetty stone. This constantly changing variety of finished rock products is processed through crushers and screens that require operator access in order to change settings and conduct maintenance. Cranes and overhead tools require open access to the crushing and screening equipment, which enclosure of the equipment would prevent.

- Page 6-27: The proposed AQP project does not have stand alone air quality impacts and this should be clarified in the last paragraph on this page. FBM at 3-5, 9-11; ENVIRON at 2-7.

- Pages 6-27, 28, 29: The discussion here makes a serious error under CEQA by concluding that the Barge Only Alternative would “eliminate” that portion of air quality impacts associated with heavy-duty diesel trucks without analyzing the resulting air quality impacts which would occur in a different place if trucks were required to pick up the materials that were barged to a different location. FBM at 17-18.
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- **Page 6-35, Table 6-4:** As required by the Court’s order and SMARA, Table 6-4 must include economic viability as a project objective. FBM at 17-18.

**D. Reduced Alternative**

As discussed in the letter from Farella Braun + Martel, CEQA requires that the Lead Agency identify a range of reasonable and potentially feasible alternatives. Guidelines § 15126.6(a).

The Reduced Alternative, in particular, is neither economically viable, reasonable nor feasible. Enclosing the crushing plant, reducing by half the number of trucks that can export materials from the Quarry, further limitations on the hours of Quarry operations, among other restrictions, are not justified by any adverse changes presented by the projects or by the findings and recommendations of the DEIR, and would result in an economically unviable project. FBM at 17-18.

CEQA emphasizes that the EIR should “focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project . . .” 14 C.C.R. § 15126.6(b). The Reduced Alternative to AQP is not a reasonable alternative as it proposes a number of measures which would restrict Quarry operations where there is no significant impact to be mitigated. Proposals which would further restrict operations, and thereby run counter to the project objectives, and which are not designed to remedy a significant environmental effect cannot be considered reasonable under CEQA.

For example, the Reduced Alternative requires that blasting be limited to a vibration level below that proposed by the County’s own expert. However, the reasoning for this requirement is not identified. The blasting levels do not currently exceed the 1982 baseline levels and there is no significant unmitigable impact from blasting. Thus there is no need for a more stringent standard. FBM at 16-17.

Similar flaws exist with the proposal to reduce noise through enclosure of the crushing plant. Noise is not identified as a significant impact in the DEIR, except for the temporary construction noise from building the berm which will ultimately mitigate noise further and would not be addressed by enclosure of the crushing plant. FBM at 14-16. Without any need for further environmental mitigation, these proposals exceed the scope of “reasonable alternatives” to the proposed project and should be removed from the Reduced Alternative.

For many of the measures in the Reduced Alternative, it is also not clear what environmentally beneficial purpose they will serve. For example, the Reduced Alternative
includes a requirement that the quarry would pave SRRQ roads in use for more than three months. It is not clear why this requirement would be any more protective of the level of dust emissions than the currently required mitigation measures that include watering of the roads, street sweeping and tarping of intra-site trucks. The additional emissions that would result from the laying of asphalt and then the subsequent tearing up of that asphalt seem to off-set any possible benefit. CEQA requires that the discussion of alternatives provide enough information so that their comparison to the proposed project can be meaningful. See, e.g., Laurel Heights Improvement Association v. Regents of the University of California, 47 Ca.3d 376 (1998).

Additionally, the DEIR fails to identify likely impacts of many of the alternatives. For example, the Mitigated, Reduced and Barge Only Alternatives would all restrict the ability of the Quarry to meet the aggregate needs of the local community. If the alternative proposals were in place, these local projects would be required to source their materials from much greater distances and the County would experience increased traffic, diesel and GHG emissions. ENVIRON at 10-13. These impacts must be considered in the FEIR. FBM at 17-19.

In the discussion of the Barge Only Alternative, the County concludes that the alternative “would eliminate that portion of air quality impacts associated with use of heavy-duty diesel trucks for transport of materials” without considering that shipment by barge would just mean that trucks would be forced to pick up the materials wherever the barges unload. FBM at 17-18.

For all of these reasons, the alternatives considered by the DEIR do not fulfill the legal requirements of CEQA nor would they meet project objectives.

E. Conclusion

Thank you for considering and addressing these comments and objections in the Final EIRs reviewing Dutra’s October 27, 2004 proposal for operating conditions under the AQP, and Dutra’s October 12, 2004 submittal of ARP04. If you have any questions or require additional information or clarification, please do not hesitate to contact me.

Sincerely,

CSW/STUBER-STROEH ENGINEERING GROUP, INC.

Al Cornwall

AC:sef
Attachments
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cc: Bill Dutra
    Aimi Dutra Krause
    Lee Selna
    Brian Peer
April 14, 2008

Al Cornwell  
Principal  
CSW/Shober-Stroeh Engineering Group, Inc.  
45 Leveroni Court  
Novato CA 94949

Re: Comments on DEIR Legal Issues and Analysis  
Surface Mining Permit Operating Conditions  
Amended Reclamation Plan of 2004

Dear Mr. Cornwell:

This letter is submitted on behalf of San Rafael Rock Quarry, Dutra Materials and The Dutra Group (collectively, “Dutra”) to provide comments on certain legal issues relating to the Draft Environmental Impact Report (“DEIR”) analyzing (1) the proposal for review of operating conditions under Surface Mining and Quarrying Permit No. 72-03 (“AQP”); and (2) the Amended Reclamation Plan of 2004 (“ARP04”) for the San Rafael Rock Quarry (“SRRQ” or “the Quarry”). We understand these comments will be submitted in conjunction with those prepared by your firm and other consultants reviewing the DEIR.

A. Background on Mining Permit and Reclamation Plan

1. Surface Mining and Quarry Permit

On April 10, 1972, the County Planning Commission recognized the existing quarry operation as a legal use under Section 23.06.100 of the County’s Surface Mining and Quarry Ordinance. The Planning Commission also approved a Tidelands Permit to allow “redredging the barge-loading channel in San Pablo Bay.”

A Surface Mining and Quarrying Permit (#Q-72-03) was subsequently issued by the Department of Public Works on April 10, 1972. Attached to the permit were General Provisions but no specific operating conditions related to hours of operation, blasting, noise, truck traffic or emergency response.

In his April 12 Statement of Decision and April 19, 2004 Order in Point San Pedro Road Coalition v. San Rafael Rock Quarry, Inc. (and consolidated actions), No. CV 014602 (Marin
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County Superior Court), Judge John A. Sutro found that SRRQ’s predecessor in interest had manifested an intent to mine the Main Quarry Bowl “without respect to duration or depth” in 1982. Judge Sutro’s subsequent July 15, 2004 Order acknowledged SRRQ’s vested mining rights and authorized the Quarry to consent, within 30 days, to a process of administrative review, with public hearings directly before the County Board of Supervisors, for adoption of “economically viable” conditions for mining activities without waiver of the Quarry’s vested mining rights.1

In accordance with Judge Sutro’s July 15 Order, the Quarry consented to administrative review of economically viable operating conditions for mining activities, without waiving its vested mining rights under Marin County Surface Mining Permit #72-03. On October 27, 2004, Dutra submitted its proposal for permanent operating conditions under the Mining Permit, pursuant to Judge Sutro’s July 15 Order. The proposal provided for permanent adoption of the Court-ordered interim operating conditions. It was deemed by the County to be complete on January 14, 2005.

Subject to these operating conditions, the Quarry plans to continue quarrying in accordance with its vested rights under Surface Mining Permit 72-03 for a period of approximately 17 years from the date of approval of ARP04, and to a depth in the Main Quarry Bowl of approximately -350’ MSL.

2. Amended Reclamation Plan

On December 6, 1982, the County Planning Commission reviewed and conditionally approved the “Amended Reclamation Plan for McNears Quarry” (“ARP82”), in compliance with the California Surface Mining and Reclamation Act (“SMARA”) for reclamation of the site. Conditions of approval included requirements for the applicant to submit annual topographic maps and reports to show conformance with the approved reclamation plan, and to initiate cleanup and revegetation measures on the site at least three years prior to the completion of the quarrying operations.

As part of that approval, the Planning Commission adopted a Mitigated Negative Declaration and imposed additional conditions of approval that incorporated mitigation measures requiring that (a) stockpiles be maintained to visually shield the Quarry’s plant structures from nearby residences on San Marino Drive; (b) a 15 foot high “lip” be maintained between machines working on the North Hill and residences on San Marino Drive for visual screening and noise buffering; (c) any increase in extracted materials be transported by barge in order to minimize noise impacts and ensure that no increase in local truck traffic would result; and (d) exterior lights at the plant be minimized in order to reduce glare from spilling over into surrounding residential areas.

1 Copies of the Court’s April 12, 2004 Statement of Decision, April 19, 2004 Order, and July 15, 2004 Order were submitted to the County as exhibits to the SRRQ’s October 27, 2004 proposal for review of operating conditions under Surface Mining and Quarrying Permit No. 72-03, and are incorporated herein by this reference.
In his April 12, 2004 Statement of Decision and April 19, 2004 Order, Judge Sutro directed the Quarry to update ARP82 in accordance with SMARA, and directed the County, as Lead Agency under SMARA, to review and act upon the updated plan. Judge Sutro observed that County agencies provide a more appropriate forum for primary review than can be provided by the Court.

On October 12, 2004, Dutra submitted ARP04 for review and approval, noting that proceedings on ARP04 must be separate from those concerning permanent operating conditions under the Quarry's mining permit. The proposal was deemed by the County to be complete on January 14, 2005.

3. State Designation

The Quarry property has been designated by the California State Department of Conservation, Division of Mines and Geology as a regionally significant mineral resource for the North Bay Area, and classified under a Mineral Resources Zone, Class 2 designation (MRZ-2A), the highest category for known mineral resource deposits. Most of the material produced by San Rafael Rock Quarry is used locally for public works and private development projects.

B. Legal Issues Presented by the DEIR

1. The EIR for Operating Conditions Must be Separate from the EIR for Future Reclamation Activities to Avoid Confusion and to Comply with the Requirements of California Law

As we explained in a letter to the County on behalf of Dutra after the County announced its intent to prepare a joint DEIR for the AQP and ARP04, this approach is counter to California Environmental Quality Act ("CEQA") case law holding that proceedings on surface mining operations and reclamation plans must be kept separate. (See August 27, 2007 correspondence in this matter, Christopher Locke to Timothy Haddad, incorporated herein by this reference). The concerns we raised about the practicality and legality of this approach are borne out by the analysis in the DEIR.

Courts have held, and the County has previously acknowledged, that an EIR prepared for a reclamation plan must focus solely on the impact of reclamation activities, not mining activities. El Dorado County Taxpayers for Quality Growth v. County of El Dorado (Cool Cave Quarry, Inc.), 122 Cal.App.4th 1591, 1598 (2004); City of Ukiah v. County of Mendocino, 196 Cal.App.3d 47, 54 n. 4 (1987). The legal standards are distinct in these proceedings, and there are distinct activities to be reviewed for each of these separate projects.

Dutra is required by SMARA to maintain and update a reclamation plan that provides for grading, revegetation and second use of the property after mining is completed. This requirement was recognized by the Marin Superior Court in its April 12, 2004 Statement of Decision and April 19, 2004 Order. The Court’s Order also found that the County is obligated to
review and approve an amended reclamation plan, consistent with SMARA. Under SMARA, “[t]he lead agency’s review of reclamation plans . . . is limited to whether the plan or the financial assurances substantially meet the applicable requirements of Sections 2772, 2773, and 2773.1, and the lead agency surface mining ordinance . . . Reclamation plans or financial assurances determined to substantially meet these requirements shall be approved by the lead agency for purposes of this chapter.” (emphasis added). See Pub. Res. Code § 2770(d).

As to operating conditions under the mining permit, the County and SRRQ stipulated, and the Marin County Superior Court approved, a process by which Dutra could consent to review and would not be deemed to waive its vested mining rights on the property, but “shall simply be viewed as having voluntarily consented to participate in a process which is intended to result in the imposition by the county of economically viable conditions on SRRQ’s mining activities.” (emphasis added) See July 15, 2004 Order at 2.

The review of operating conditions and the proposed amended reclamation plan are separate and distinct, serve different purposes and are subject to different standards. Should issues arise about the certification of the EIR for one project, the other project’s approval should not be delayed due to having been tied up in a joint EIR.

Additionally, since the projects are distinct, combining them in a joint DEIR is confusing to the public and prejudicial to Dutra. The confusion and prejudice was highlighted during the public hearing on March 25, 2008 where, despite repeated reminders that the commentors should identify which project their concerns were related to, few if any of the speakers distinguished between operating condition and proposed reclamation activities. Moreover, the joint DEIR is itself confusing and prejudicial as a result of the failure to separate the impact analysis for each of the projects.

For example, the joint DEIR erroneously combines impacts from ongoing mining operations and future reclamation activities in much of the analysis, and merges the discussion of the cumulative impacts for each project as if they were one. The DEIR concludes that ongoing operations will result in cumulative significant impacts when combined with impacts from future reclamation activities, while acknowledging that impacts from ongoing mining operations are themselves less than significant and, in many instances, already mitigated to less than the 1982 baseline.

As noted above and pointed out repeatedly, the County was obligated to analyze impacts from mining operations separately from those relating to reclamation activities. This requirement also applies to the analysis of cumulative impacts for each project. See Cool Cave Quarry, 122 Cal.App.4th at 1599 (holding that CEQA requires a project specific analysis of the reclamation plan, not one which also considers the impacts of the mining operation itself); City

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2 See correspondence of Christopher Locke to Timothy Haddad regarding Process and Timing for Environmental Impact Reports and Proceedings for the San Rafael Rock Quarry Amended Reclamation Plan and Operating Conditions, dated August 27, 2007, incorporated herein by this reference.
of Ukiah v. County of Mendocino, 196 Cal.App.3d at 54 (1987) (finding that since the operator already had a vested right to mine, the only issue before the County was whether the Reclamation Plan would have a significant environmental impact under CEQA).

The joint DEIR is confusing to the public, the combined analysis it contains is unfairly prejudicial to Dutra, and it is contrary to the requirements of CEQA.

2. The 1982 Baseline Must Be Clarified and Applied Consistently in the DEIR

The DEIR appropriately concludes that the environmental baseline should be the existing permitted conditions as set out in the 1972 Surface Mining and Quarrying Permit, the 1982 Amended Reclamation Plan, and the operating existing in 1982 when SRRQ became a legal, non-conforming use. DEIR at 3-18; Fairview Neighbors v. County of Ventura, 70 Cal.App.4th 238 (1999); San Joaquin Raptor Rescue Center v. County of Merced, 149 Cal.App.4th 645 (2007). While this general conclusion is correct, it is not applied consistently throughout the DEIR. Additionally, in several instances the DEIR fails to make specific or correct findings as to 1982 operations, and incorrectly makes conclusions about impacts without first identifying adverse changes from the baseline for each project -- a prerequisite under CEQA for concluding that there is a significant impact.

With regard to proposed reclamation activities, the DEIR contains a discussion comparing ARP82 to ARP04 but mistakenly concludes that “ARP04 is a much broader project.” As explained in detail in Dutra’s October 12, 2004 application for review of ARP04, there are only two substantive changes from ARP82: the increase of the depth of the Main Quarry Bowl, and the increased duration of mining. The “new aspects of planned site reclamation” that the County describes are not new; they are simply set out in more detail than was previously required by SMARA or the County when ARP82 was prepared.

The phased approach to reclamation is not a substantive change from ARP82 to ARP04. Furthermore, it was incorporated into ARP04 at the suggestion of the County, to enable reclamation of some portions of the site to begin earlier, while mining operations are continuing in other areas of the site. It is ironic that the County now attempts in the joint DEIR to consider these activities in combination to find “unavoidable significant impacts.” Not only is this analysis legally inappropriate, as noted above, impact can be easily avoided or mitigated to less than significant levels by limiting the nature, intensity or location of certain mining operations or reclamation activities on days when both would occur concurrently.

There are a number of other factual inaccuracies relating to baseline in the DEIR. It notes, for example, that “[T]he 1982 ARP states that noise-generating operations are generally limited to daylight hours on weekdays, except in times of emergency.” See, e.g. 3-66. As we pointed out in previous correspondence to the County, ARP82 stated only that noise generating operations occurred “generally” during daylight hours. Moreover, as noted above, the Mitigated
Negative Declaration accompanying ARP82 expressly provided for shielding of lights to minimize glare. Thus, there is substantial evidence to support for the conclusion that the 1982 baseline includes nighttime Quarry operations.

The DEIR proposes, however, to limit the hours of operation without regard to this evidence of 1982 baseline operations, and concludes that continuing nighttime operations would have a significant negative aesthetic impact. DEIR at 4.1-27. Based on this erroneous finding of significant impact, the DEIR proposes a mitigation measure, P4.1-9, which would “restrict operations that have the potential to cause nighttime sources of light and glare and that are visible from public vantage points (including the Bay and vantage points across the Bay), roadways, and residences to daytime hours, except during emergency operations.” A similar restriction is imposed in other sections based upon the same “generally” language. See, e.g., DEIR at 4.6-30; 3-77.

Thus, the DEIR has ignored the evidence of actual baseline conditions, and has instead proposed restrictions on nighttime operations based on an arbitrary and capricious finding of significant impact relative to the baseline.3

3. **SMARA Requires the County to Protect the Quarry from Incompatible Land Uses and Provides a Limited Role for the County in Reviewing the Amended Reclamation Plan**

State law requires that Dutra reclaim the Quarry following completion of quarrying. Cal. Pub. Res. Code §§ 2770, *et seq.* In order to reclaim the Quarry in a manner that will return it to a “usable condition which is readily adaptable for alternative land uses” under applicable SMARA provisions and regulations, grading and soil stabilization activities must occur under the project as proposed as well as under any of the alternatives. See Cal. Pub. Res. Code §§ 2712, 2733; 14 Cal. Code of Regs. §§ 3700 *et seq.* A certain amount of dust and emissions are inevitable during these activities, which are required under SMARA.

While SMARA explicitly allows for CEQA review, the County’s scope of review is more limited than in a typical land use entitlement process. SMARA provides that a “lead agency’s review of reclamation plans . . . *is limited to* whether the plan or the financial assurances substantially meet the applicable requirements of Sections 2772, 2773, and 2773.1, and the lead agency surface mining ordinance . . . Reclamation plans or financial assurances determined to substantially meet these requirements shall be approved by the lead agency for purposes of this chapter.” Pub. Res. Code § 2770(d) (emphasis added). Additionally, “CEQA does not grant an

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3 The 1982 noise study cited in the DEIR also stated that “blasting at McNear’s Quarry takes place approximately two times a week.” At page 4.7-28 the DEIR concludes that: “Blasting at SREQ generally occurs once around noontime approximately three days a week.” The source of this frequency determination is not cited, and it is contradicted by records establishing that blasting has averaged less than twice per week in recent years. Blasting is also restricted to 11:30 a.m. to 1:30 p.m. on non-holiday weekdays. This restriction—though in existence in 1982—is proposed to continue. Thus, there is no increase in the frequency of blasting, and it is more restricted than it was in 1982.
agency new powers independent of the powers granted to the agency by other laws.” *Guidelines* § 15040(b).

SMARA also requires the County to *protect the mineral resource* when making decisions concerning adjacent, potentially incompatible land uses. *See* Pub. Res. Code § 2762-2764. As noted earlier, SRRQ has been found by the State, County and Court to be a regionally significant mineral resource. As a result, SMARA requires that the County’s mineral resource management policy include protections that will restrict the encroachment of incompatible land uses, furnish notice to prospective developers or purchasers of the presence of the mineral resource, and provide conditions for subsequent incompatible land uses that mitigate any conflicts prior to approving such uses. *See* 14 Cal.Code of Regs § 3676.

In the baseline year of 1982, the City of San Rafael (“City”) and the County created a buffer that was intended to protect the mineral resource from incompatible land uses, as required by SMARA. There is no proposal for intrusion into this buffer by SRRQ, nor are operations proposed to change in any manner that would increase impacts compared to 1982 levels.

Furthermore, we note that all of the residential development that has been approved was contemplated in 1982, it has presumably been permitted by the County or the City with due notice and consideration of the buffer. Residential developments such as Marin Bay Park were permitted with conditions of approval such as double-glazed windows to *reduce noise in recognition of the buffer. See Mitigated Negative Declaration, Marin Bay Subdivision, City of San Rafael (November 22, 1983)* at 7 (includes a mitigation measure which requires design guidelines for certain lots which mandate building layout and construction techniques to reduce noise impacts, including "well sealed insulated windows" and placement of kitchens and baths toward the noise sources.).

Thus, the record supports the conclusion that the County and the City have complied with SMARA in creating and maintaining a buffer to protect the mineral resource as proposals for residential developments were considered and approved. In any event, SRRQ has not proposed any adverse operational change or intrusion that would render inadequate the buffer established by the City and County in 1982 to protect this mineral resource, and the mitigation measures adopted by SRRQ actually *decrease* impacts compared to 1982 operations.

4. **The DEIR’s Arbitrary Assumption that Production Will Increase by 20 Percent is Not Supported by Substantial Evidence**

The DEIR also arbitrarily and capriciously assumes that production levels may increase by up to 20 percent above the baseline levels. Although there are modest fluctuations in annual production due to emergency response and customer needs, there is no basis for concluding there

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4 We note that the County and the City approved the Peacock Gap Neighborhood Plan, and it was incorporated into the Marin Countywide Plan and the City’s General Plan.
may be such an increase. To the contrary, Dutra proposes to continue current restrictions on
truck trips, days and hours of operation, noise limits and blasting frequency.

As the DEIR acknowledges, the production level during the 1982 baseline year was
1,473,000 tons. As SRRQ pointed out in its January 31, 2005 Annual Report to the County,
based on historical records, production levels increased during the 1970s and early 1980s when
demand due to mining activities were required: 1,873,231 tons in 1973, 1,839,791 in 1974, and
1,789,000 in 1983.

An analysis of the production levels for the last four years is most relevant for
determining whether there has been any increase in production levels compared to the baseline,
since the Quarry has been operating under the Court-ordered interim operating conditions since
2004 — the same conditions that SRRQ has proposed to make permanent. The production levels
(in tons) for these years are as follows:

2007: 1,593,512 (including 231,726 for delta levee repairs)
2006: 1,470,562 (including 822,435 for delta levee repairs)
2005: 1,106,909 (including 1,300 for local landslide/levee repairs)
2004: 1,361,457 (including 226,004 for delta levee repairs)

Thus, even in emergency response years, any increase in tonnage has been far less than
20 percent, and in some years production has been below the 1982 baseline. The DEIR makes
no attempt to explain why it assumed a 20 percent increase, which is unsupported, but failed to
recognize years in which that production decreased.

The California Supreme Court’s decision in Hanson Brothers also undercuts the DEIR
assumption of a 20 percent increase in production. There, the Court found that there are limits
on the intensification of operations for mines operating as legal nonconforming uses. Hansen
Brothers Enterprises, Inc. v. Board of Supervisors, 12 Cal.4th 533, 573 (1996). The Court also
found that it is not appropriate to assume that increased production will occur before it does. Id.
at 575 (“Impermissible intensification of a nonconforming use is more appropriately addressed at
such time as increased production actually occurs.”). Furthermore, the Court noted that “when it
appears that a non-conforming use is being expanded” a county would have the option of
ordering the operator “to restrict the operation to its former level” at that time, and it is therefore
not necessary to analyze a theoretical and baseless increase in production. Hansen, 12 Cal.4th at
575.

Dutra has not proposed any change in operations and has, in fact, proposed to keep the
Court-ordered 2004 interim operating conditions in effect. The 20 percent increase in production
assumed in the DEIR is arbitrary and capricious. It should be discarded, and the actual average
production levels since 2004 should be used for the DEIR’s analysis of air quality and other
issues.
5. **To Find a Significant Effect on the Environment there Must be an Adverse Physical Change Caused by the Project**

The DEIR concludes in several sections that impacts from one or both of the projects will have a significant effect on the environment from the project without making the necessary showing that the project will cause an adverse change from the baseline. The CEQA Guidelines define a significant effect on the environment to mean:

[A] substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.

Guidelines § 15382; *Eureka Citizens for Responsible Government v. City of Eureka*, 147 Cal.App.4th 357, 377 (2007). Whether there is an adverse change in physical conditions caused by the project must be determined by referencing the project baseline. See, e.g., *Fairview Neighbors*, 70 Cal. App. 4th at 243. The DEIR fails to make this critical determination in finding that there will be a significant effect from the proposed AQP project in the Land Use and Air Quality sections, among others.

For example, in the Land Use section the DEIR concludes that ARP04 and AQP will result in “continuing incompatibly with neighboring residential and recreational land uses” without explaining what physical changes from the baseline caused by each project are resulting in the impact. DEIR at 4.6-31. However, SRRQ is not proposing any changes in operating conditions that will cause an unmitigable individual or cumulative impact. To the contrary, current and proposed SRRQ operations present a favorable change, not an adverse change, relative to the baseline.

As to future reclamation, the Air Quality section of the DEIR finds that thresholds of significance will be exceeded without making the critical preliminary determination whether there will even be an adverse change in ARP04 relative to the ARP82 baseline. However, the

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5 Guideline § 15358 provides: “Effects” and “impacts” as used in these Guidelines are synonymous. (a) Effects include: (1) Direct or primary effects which are caused by the project and occur at the same time and place. (2) Indirect or secondary effects which are caused by the project and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems. (b) Effects analyzed under CEQA must be related to a physical change.
thresholds of significance do not trump the more fundamental CEQA requirement that there be an adverse change in the project before a significant impact can be found. Guidelines § 15382.

The EIR must make findings as to whether there has been an adverse change before it can reach a conclusion on whether aspects of either project will have a significant impact requiring mitigation.

6. The Cumulative Impacts Analysis Incorrectly Finds Impacts Where no Changes were Made from Baseline and Evaluates Impacts not Recognized by CEQA

CEQA requires that the “cumulative impacts” of a project be considered. “Cumulative impacts’ refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” Guidelines § 15355.

However, the CEQA Guidelines are clear that in order for a lead agency to conclude that a project has a cumulative impact on the environment it must have some contribution to that impact. “[A] cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR.” Guidelines § 15130(a)(1) (emphasis added). “Just as zero when added to any other sum results in no change to the final amount, so, too, when no environmental impacts cognizable under CEQA are added to the alleged environmental impacts of past projects, there is no cumulative increased impact.” Santa Monica Chamber of Commerce v. City of Santa Monica, 101 Cal.App.4th 786, 799 (2002); Sierra Club v. West Side Irrig. Dist., 128 Cal.App.4th 690 (2005) (holding that a project must make some contribution to the impact in order to be characterized as a cumulative impact).

The Air Quality analysis of the DEIR concludes that there are cumulative impacts which are attributable to mining operations despite the fact that there has been a significant reduction in emissions due to mitigation measures and regulatory developments. DEIR at 4.2-40, 4.2-57. It reaches this conclusion even with the incorrect assumption of a 20 percent increase in production. Improvements in diesel engine technology and fuels, upgrades to equipment, conversions to biodiesel, and better fugitive dust control have reduced emissions in all of these areas. ENVIRON at 1-7. Therefore, as mitigated and with proper analysis, no significant air quality impacts can be found from current and proposed mining operations.

Since current and proposed mining operations under the AQP do not result in any increase in emissions from the 1982 baseline, it is inappropriate under CEQA to find that the project has a cumulatively considerable or incremental impact on air emissions no matter what other projects in the area currently or in the future are predicted to cause. If such findings were allowed, very few proposals for improved and continuing operations could be approved for industrial facilities and other projects.
This erroneous finding highlights the importance of segregating the discussion of cumulative impacts for each of the two projects under review. The DEIR concludes that ARP04 will result in an increase in criteria air pollutants, although as SRRQ demonstrates in its comments, these impacts are avoidable or mitigable to less than significant. The proposal for continued operating conditions under the AQP, on the other hand, concludes that there will be cumulative impacts due to that project even though it presents a favorable change, not an adverse change, compared to baseline. The EIRs must be separate, and must separately and correctly analyze adverse change, if any, from each project.

7. The Health Risk Assessment’s Consideration of Past Impacts Exceeds the Scope of Review Authorized by CEQA

The cumulative impacts analysis in the air quality section contains another considerable analytical error that results in a significant impact finding which does not arise from actual impacts from either of the proposed projects. The County commissioned a Health Risk Assessment ("HRA") to analyze the "cancer risks and non-cancer health effects associated with exposure to [toxic Air Contaminants] emitted by ARP and AQP activities." DEIR at 4.2-43.

The comments submitted by ENVIRON\(^6\) discuss in detail the manner in which this analysis makes erroneous assumptions and fails to comply with HRA guidance documents. We offer these additional comments.

As discussed above, CEQA requires that an EIR only examine impacts that are attributable to the specific project undergoing review and directs that a significant impact can only be found if there is an adverse change in the physical environment caused by the project. Despite these clear requirements, the DEIR's HRA analyzes past impacts from emissions at SRRQ, and it is on this basis that it finds an unavoidable and significant impact.

The cases that have examined cumulative impacts of existing projects have held that it is inappropriate to consider past impacts from the facility when examining a proposal for continuing operations or future modifications. See San Lorenzo Valley Community Advocates for Responsible Educ. v. San Lorenzo Valley Unified School Dist., 139 Cal.App.4th 1356, 1390 (2006) (citing Silveira v. Las Gallinas Valley Sanitary Dist., 54 Cal.App.4th 980, 993 (1997)) ("When reviewing the evidence, we will not consider evidence or arguments about the impact from the existent sewage plant.").

\(^6\) See correspondence of Shari Beth Libicki, Ph.D., and Elizabeth S. Miesner, M.S., ENVIRON Corporation, to Brian Peer of The Dutra Group, dated April 11, 2008 ("ENVIRON") and included as Attachment 2 to the April 14, 2008 correspondence of Al Cornwell, CSW/Stuber-Stroeh Engineering Group, Inc., to Timothy Haddad regarding comments on the Draft EIR for ARP04 and operating conditions under the mining permit. See also March 25, 2008 public hearing presentation of Dr. Libicki.
In *Friends of the Eel River v. Sonoma County Water Agency*, 108 Cal.App.4th 859, 875-876 (2003), the court found that the agency should not examine the effects of the prior water diversions from the Eel River in the current environmental review:

In general, an EIR is required to identify and focus on direct and indirect environmental impacts caused by a project. Significant impacts typically involve changes in the existing environment caused by a project. (Guidelines, § 15126.2, subd. (a).) The Agency’s Project, neither approves nor makes any change to Eel River diversions. Accordingly, it does not cause the conditions in the Eel River. These conditions, which predate the Project, would exist even if the Project was not approved.

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In reality, appellants seem to be arguing that, although the Project does not authorize or change the diversion of Eel River water, the Agency must nevertheless account for the consequences of this diversion in its EIR for the Project simply because the Agency relies on these diversions. Appellants have not cited any authority for the proposition that, when a project relies on an arrangement that predates the project and is authorized in a different proceeding, the project’s EIR must consider the significant impacts of this prior arrangement.

A similar situation exists here. The projects under review in this DEIR are not the history of the Quarry’s operations. Historical operations simply determine the baseline. CEQA review is as to those activities proposed for the future in each project.

To add past emissions to the impacts analysis is beyond the scope of review that the County is authorized to conduct under CEQA. *Benton v. Napa County*, 226 Cal.App.3d 1467, 1476-77 (1991) (holding that since the applicant had a vested right to undertake certain activities, the lead agency was not required to consider the impacts of the previously approved project and instead rightly only looked at the impacts from the currently proposed project). If such an analysis of the past activities were allowed by CEQA, it would mean that every time a facility with a history of emissions sought to upgrade its equipment to reduce environmental impacts, the lead agency would be forced to conclude that the project would have a significant environmental effect. This runs counter to the concept of using baselines discussed above, as well as the intent of CEQA which is to analyze adverse changes resulting from projects.

Reviewing past emissions is also contrary to BAAQMD CEQA Guidance (BAAQMD 1999), as noted in ENVIRON’s comment letter (ENVIRON at 3-4), and to the practice of the County’s consultant, ESA, in other projects. ESA recently completed a Draft and Final EIR for
the Chevron Energy and Hydrogen Renewal Project at the Chevron Refinery in Richmond, California in which two HRAs were conducted for separate phases of the project (one of the HRAs was conducted by the BAAQMD). In neither of the HRAs presented by ESA in that project, including one conducted by the BAAQMD (the governmental agency tasked with reviewing air toxics HRAs for CEQA), were retrospective risks evaluated.

Clearly, retrospective risk assessments are not used by ESA in evaluating cumulative impacts for other projects involving ongoing operations at industrial facilities. If they were used in CEQA review of such projects, very few environmental improvements would be approved, as most would have a history of air quality impacts that are significant, and past emissions are by definition unavoidable.

HRAs require consideration of the cumulative effects of other projects in existence or reasonably likely to occur in the future. However when prepared as part of a CEQA document the conclusions are only useful if they can explain how the proposed project will affect health risks. As noted above, since current and proposed mining operations under the AQP do not any increase emissions -- they in fact decrease emissions as compared to baseline -- the DEIR cannot find that the project would result in a significant adverse change in the physical environment.

Thus, the HRA must be redone to review each project individually, to exclude calculations that include past emissions, and to eliminate flawed assumptions including the 20 percent increase in operations, and evaluate any adverse change in comparison to the 1982 baseline, in accordance with the requirements of CEQA and applicable guidance documents.

8. The DEIR's Land Use Section Incorrectly Concludes that the Projects Will Create a Conflict with Existing Uses

The DEIR's discussion of the impacts from the two projects on existing land uses in the area of the Quarry contains a wealth of misstatements and missing information.

The DEIR concludes (at page 4.6-28) that the “activities associated with the phased implementation of the reclamation plan would conflict with the County Code Title 22 (Section 22.112.020) restrictions on nonconforming uses” and would thus result in a significant impact on the environment. Although it goes on to conclude that those impacts could be mitigated to a less than significant level, this analysis is faulty because the amended reclamation plan is required by SMARA, County ordinance and the Court's orders. ARP04 is consistent with ARP82, with only two amendments; the balance of the changes are updates and clarifications to comply with current SMARA standards, and none is an expansion prohibited by the County Code or other requirements for legal non-conforming uses. See also Hansen Brothers, 12 Cal.4th at 573.

The DEIR also concludes (at page 4.6-29) that continued mining operations under the AQP will result in intensification of Quarry operations beyond 1982 levels in excess of the Quarry’s legal non-conforming use. As discussed more above, this is incorrect. The conclusion relies on three factors: First, it assumes that the lack of an express limit on annual tonnage in the AQP would mean an intensification of use. However, in Hansen the California Supreme Court explicitly concluded that “an increase in business volume alone is not an expansion of a nonconforming use.” Id. This predicted increase is not based upon the project proposal or on any other reasonable grounds. Secondly, the DEIR finds that since the proposal does not include the language limiting noise generating activities to “generally” occurring during daylight, this presents an intensification of use. Finally, there is simply no basis for the DEIR’s conclusion that blasting will occur at a greater frequency than three times per week. A review of blasting data for the last several years shows blasting to average 60-70 times per year well below an average of twice per week.

Furthermore, as noted above, SRRQ has proposed the continuation of the specific Court-ordered limits on operating days and hours, truck trips, blasting and noise that have been in effect since 2004. These conditions are more restrictive than operating conditions in 1982, and they will prevent any unlawful intensification of use. Again, as stated by the California Supreme Court in Hansen Brothers, 12 Cal.4th at 575, “[I]mpermissible intensification of a nonconforming use is more appropriately addressed at such time as increased production actually occurs.”

The DEIR also fails to recognize the requirements of SMARA in approving potentially incompatible land uses adjacent to a mineral resource. In the baseline year of 1982, the City and the County created a buffer that was intended to protect the Quarry from incompatible land uses, as required by SMARA. 14 CCR § 3676. The DEIR incorrectly suggests, however, that it is the Quarry’s proposal for continuing operations and eventual reclamation that poses incompatibility with neighboring residential and recreational land uses. DEIR at 4.6-31. This is simply not the case. There is no proposal for intrusion into the buffer which the County created and the proposed AQP and ARP04 both are designed to stay within the legal boundaries of the non-conforming use status established in 1982.

The DEIR also incorrectly finds that the construction of a temporary berm in the Northeast Quadrant poses an avoidable significant impact. As the DEIR recognizes, this berm is beneficial, in that it is intended to provide an additional noise and visual buffer for neighboring residences. The impacts that would result from its construction and removal are also temporary in nature, like any construction project, and are entirely reasonable since the berm will serve a beneficial purpose as a mitigation measure.

While CEQA requires that temporary impacts be considered, courts have recognized that temporary construction impacts should be treated differently from long-term or permanent
impacts. See, e.g, El Dorado County Taxpayers for Quality Growth, 122 Cal.App.4th at 1604 ("The operation of earth moving equipment would create temporary air quality impacts through the release of particulate matter and the release of ... ozone precursors. ... These impacts would be less than that presently imposed by the mining operation and are therefore considered less than significant."); Benton, 226 Cal.App.3d at 1483 ("The board did not consider construction phase noise impacts, as they were temporary."). Thus, the construction and removal of the temporary berm in the Northeast Quadrant should not be found to pose an unavoidable significant impact.

In the cumulative impacts discussion of the Land Use section, the DEIR also concludes that there will be a significant non-mitigable impact due to "complaints" that have been received from neighboring residents in Peacock Gap and Marin Bay Park. Such a conclusion runs counter to two principles of CEQA.

First, public controversy is not a substitute for substantial evidence of an environmental impact. Pub. Res. Code § 21082.2(b); see Leonoff v. Monterey County Bd. of Supervisors, 222 Cal.App.3d 1337, 1359 (1990) (public controversy cannot trigger an EIR if the record does not contain substantial evidence that a project may have significant effect). As discussed above, and as recognized elsewhere in the DEIR, there will be no increase in noise, blast vibration, dust, soot, or truck traffic from the project proposing continued operating conditions under the AQP. In fact, such impacts are reduced when compared to baseline. Complaints from some neighboring residents — many of whom are members of the Point San Pedro Road Coalition or are individual plaintiffs in litigation against the Quarry — do not support a finding of significant impact where the impacts themselves are acknowledged to be less than significant. See Perley v. County of Calaveras, 137 Cal.App.3d 424, 436-37 (1982) (unsubstantiated fears and desires of project opponents do not constitute substantial evidence).

Second, such complaints cannot be used to show a significant environmental effect. Courts have consistently held that an adverse change in conditions which results in a significant environmental effect must be one to the physical environment which affects people in general and not just impacts to particular persons. San Lorenzo Valley Community Advocates for Responsible Educ., 139 Cal.App.4th at 1390; Mira Mar Mobile Community v. City of Oceanside, 119 Cal.App.4th 477, 492 (2004); Association for Protection Etc. v. City of Utkah, 2 Cal.App.4th 720, 734 (1991).

Finally, it bears recognition that many of the neighboring residents who spoke or submitted comments at the March 25, 2008 public hearing expressed support for the Quarry’s proposal for continued operations and reclamation. Thus, complaints cannot be used as a basis for finding a significant impact under CEQA.

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1 Indeed, the reclamation activities proposed by ARP04 are temporary and will not involve long-term impacts like most traditional projects reviewed under CEQA. For this reason, it is more appropriate to review ARP04 under BAAQMD’s threshold of significance for construction impacts instead of those for permanent projects.
9. **Analysis of Blasting Vibrations Makes Inappropriate Conclusions Based Upon Insubstantial Evidence and Standards**

The DEIR's discussion of the impacts from blasting in the Quarry's proposal for operating conditions under the AQP makes findings of significance without any discussion of how the impacts constitute an adverse change from baseline conditions. For the reasons discussed above, there is no adverse change from blasting operations, which are more restricted and no more frequent than in 1982.

Nowhere does the County actually reference objective data which can show that the vibrations resulting from blasting at the Quarry have increased. Instead the DEIR cites the vibrations measured on San Marino Drive in 1980 as below human annoyance levels and compares that to the complaints received by the County in recent years.


Furthermore, given the pending litigation and public controversy, the number and type of complaints has no correlation to an actual increase in vibration. Blasting is subject to Court-ordered monitoring and limitations, which is proposed to continue, and monitoring shows that it has been conducted within the limits suggested in the DEIR by the County's consultant, Revey Associates. There is no basis for a finding that continued blasting, as proposed and mitigated, will pose a significant impact.

10. **Alternatives Considered Do Not Meet Project Objectives**

CEQA requires that the Lead Agency identify a range of reasonable and potentially feasible alternatives. CEQA Guidelines § 15126.6(a). Feasibility is defined as:

Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives. (emphasis added)
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*Guidelines § 15126.6(d)(1); see also § 15364 (“Feasible’ means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.”). The Court’s Order requires that the County approve “economically viable conditions on SRRQ’s mining activities.” July 15, 2004 Order at 2 (emphasis added). Economic feasibility is also an implicit objective of both ARP04 and AQP. *Association of Irritated Residents v. County of Madera*, 107 Cal.App.4th 1383, 1399 (2003) (finding that “economic feasibility is implicit in the project objective.”). However, for both ARP04 and the AQP, the DEIR fails to discuss the economic viability of the proposed alternatives. In light of the Court’s Order, this makes the alternatives discussed both legally and economically infeasible.

CEQA requires that the County examine all the impacts, direct and indirect, from the project and the proposed alternatives. *Guidelines § 15126.6(d); Kings County Farm Bureau v. City of Hanford*, 221 Cal.App.3d 692 (1990). The DEIR fails to identify significant impacts that would result from numerous of the alternatives proposed. These include increased greenhouse gas (“GHG”) emissions from restricting Quarry operations, which would require remote sourcing of aggregate, displacement of the impacts of truck traffic by requiring more barge use under a number of the alternatives, and emissions and other impacts from placement and removal for additional temporary roadways, among others.

Particularly egregious is the discussion of the Barge Only Alternative. The County concludes that the alternative “would eliminate that portion of air quality impacts associated with use of heavy-duty diesel trucks for transport of materials” without considering that shipment by barge would just mean that trucks would be forced to pick up the materials wherever the barges unload. This conclusion ignores the displacement of emissions that would result, is the prototypical Not-In-My-Backyard type approach to environmental issues, and is entirely inconsistent with the Marin Countywide Plan’s (“CWP’s”) policy for addressing greenhouse gas (“GHG”) emissions, and with CEQA. See Greenhouse Gas Reduction Plan, CWP at 1-4, 1-7-14 (setting the reduction of “greenhouse gas emissions that contribute to global warming” as a “Guiding Principle”).

11. The Quarry Provides Important Environmental Services to Marin County and the State of California Not Fully Analyzed in the Draft EIR

San Rafael Rock Quarry is the only major quarry operating in the County, one of the few in the region, and the only one in Northern California with barge access. Most of the material produced by the Quarry is used locally. See ENVIRON at 10-13 and Table 5. Without this important source of aggregate, local customers including the County would be forced to source materials from remote locations at greater cost and increased environmental impacts to the County and the region.
As the EIR on the recently adopted Countywide Plan acknowledged, congestion on Highway 101 is a serious problem and one which is not likely to improve over time. Marin Countywide Plan (CWP) at 3-141 to 174. By forcing trucks to travel greater distances, the County would be increasing the number of heavy trucks on the highway and secondary roads, thereby exposing the community to increased traffic, emissions and potential safety concerns. If Quarry operations were curtailed, materials would need to be imported from remote locations, including Canada. The increased travel would inevitably result in significant increases in GHG emissions and other impacts.

As stated in the comments submitted by ENVIRON, the potential increased GHG emissions from such distant sourcing could be as great as 6,000 tons of additional CO2 per year. See ENVIRON at 10-13. And as the Countywide Plan acknowledges, responsible land use decisions are a key to the effort to reduce GHG emissions and if Marin County is committed to taking the risk of global warming seriously then it must take that into account when reviewing the continued operation of the Quarry. See Countywide Plan at 1-13.

New concerns that additional levees will be required in low-lying areas of the County due to climate change underscore the continuing importance of this resource. Brad Breithaupt, Marin Warned Not to Develop, Marin Independent Journal, March 18, 2008, at A1. State agencies have recognized the Quarry as the only source of material for marine-based projects in the Delta, and this would likely be true in Marin as well. The EIR should evaluate the health and safety impacts of reducing the Quarry’s ability to serve these important needs.

The Quarry is a vital resource for emergency response in the event of catastrophic levee failures in the San Joaquin/Sacramento Delta, and for emergency response requirements of the County. Without the resources of the Quarry, the County and its residents will be put at increased risk following a flood, earthquake, landslide or other disaster. The Quarry’s ability to respond quickly, including by barge to areas inaccessible by truck, is unique in the region and serves the public interest.

12. The Coalition’s Claims of “Illegal” Proposed Reclamation Activities Lack Merit and have been Refuted by the Court and County Counsel

In written and verbal comments presented at the March 25, 2008 public hearing on this DEIR, counsel for the Point San Pedro Road Coalition asserted that the temporary berm proposed by ARP04 for mitigation of reclamation activities in the Northeast Quadrant, and reclamation activities and grading in areas of the South Hill are “illegal” under the Marin County Superior Court’s April 19, 2004 Order. The Coalition also contends that proposed grading and

9 Global warming, by definition, is a “global” problem and it is thus necessary that local decision makers take into account the globalized impacts of their actions. The DEIR fails to do this by simply discussing the direct emissions from Quarry operations without adequately considering the indirect GHG emission increases that would result from increased shipment of materials if the Quarry was converted to other uses prematurely. See page 6-27.
creation of a berm as part of reclamation of the area occupied by McNear’s Brickyard would be an “illegal expansion of a non-conforming use.”

The Coalition has made these claims repeatedly to the Court and County in the past. In response to the claim that the proposed berms violate the Court’s Order, County Counsel advised counsel for the Coalition by letter dated April 4, 2005,

I do not read the court’s order as prohibiting the Board from considering any and all issue relating to reclamation, including identifying project impacts, exploring environmentally superior alternatives and imposing mitigation measures. As an example, the evidence may show that stockpiling overburden (suitable for reclamation) onsite for an interim period (subject to conditions) is environmentally superior to causing such to be removed and requiring fill material to be later transported in during reclamation.

Similarly, in response to these claims at an April 6, 2005 Status Conference, Judge Sutro responded to counsel for the Coalition:

[T]here is no amended reclamation plan, at this point, of course. That’s under consideration and will be the subject of, it looks like, considerable study before it’s finally approved in whatever form it may be approved. So I don’t think it’s appropriate for the Court to interject itself, at this juncture, in that regard. I’m going to assume that everyone is going to abide by the orders I’ve issued to date in this matter.

Dutra has abided by the Court’s Order prohibiting “depositing any overburden, tailing, dredged material or other waste materials” in the Brick Resource area of the Northeast Quadrant, and “mining, grading and depositing materials, overburden, tailings, dredged material or other waste materials” in the areas designated by ARP82 to be preserved in a natural state at the property. The temporary berm in the Northeast Quadrant is, in fact, proposed to mitigate grading during reclamation.

Dutra will continue to observe these restrictions on mining operations, and ARP04 proposes to maintain the areas designated by ARP82 to be preserved in a natural state. The reclamation activities proposed in the Northeast Quadrant, McNear’s and the South Hill are entirely consistent with SMARA, CEQA and ARP82.10 And, as recognized by Judge Sutro and

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10 As noted above, ARP82 provided for maintenance of a 15 foot high “lip” between 8 machines working on the North Hill and San Marino Drive for visual screening and noise buffering.
County Counsel, the Court's Order restricting mining operations was not intended to prevent the Supervisors from considering proposed reclamation activities.\textsuperscript{11}

C. Conclusion

We appreciate the opportunity to provide these comments on the DEIR for ARP04 and operating conditions under the Mining Permit. Please contact me with any questions.

Very truly yours,

Christofoletti Locke

cc: Bill T. Dutra
Aimi Dutra Krause
Lee Selma, Esq.
Brian Peer

\textsuperscript{11} Copies of the April 4, 2005 correspondence of County Counsel and the transcript of the Court's April 6, 2005 Case Management Conference are attached as Exhibits A and B, respectively.
April 4, 2005

Via Fax 415/399-1885 & U. S. Mail:
John D. Edgcomb, Esq.
Law Offices of John D. Edgcomb
115 Sansome Street, Suite 805
San Francisco, CA 94104

Re: San Rafael Rock Quarry, Inc. ("SRRQ")

Dear Mr. Edgcomb:

Thank you for your March 22, 2005 letter to Mr. Mansourian. Mr. Mansourian has requested that I respond.

Your letter raises two issues. First, you allege that SRRQ's Amended Reclamation Plan ("ARP") application violates the court order. Second, you state that Planning Commission ("PC") review is required in the ARP process.

I must respectfully disagree with your second contention. In fact, an application for a reclamation plan must be submitted to the Public Works Department. The Public Works Department is the approving agency with an appeal from that department's determination going directly to the Board of Supervisors. Hence, either the Public Works Department or the Board of Supervisors is the decision making body responsible for both project and CEQA review. I can find no authority (and your letter fails to cite any) for the proposition that the PC has authority to review the ARP application.

Moreover, my clients are aware of the potential conflict between the administrative and time requirements to process SRRQ's applications and the court's and residents' desire that impacts be mitigated expeditiously. Although due process requires that all interested parties are given notice and opportunity to participate in the project/CEQA process it does not require separate hearings before both the PC and Board of Supervisors. Staff estimates that separate PC hearings may add a minimum of 6 months to the entire process. The Board has determined that both due process requirements and expeditious identification of impacts and mitigation thereof can best be accomplished if the Board is the decision making body for all matters associated with SRRQ's applications.
With respect to your first contention, it should be noted that the County is enforcing the court order by monitoring the brick resource area to insure that SRRQ is not depositing overburden in that area. Your letter contends that SRRQ, through its ARP application, intends to seek reclamation plan approval in violation of the court order. You request that the Public Works Department or County Counsel “inform the SRRQ that it must withdraw ARP 04 because of these violations.”

Initially, please be advised that neither the Public Works Department nor County Counsel has the power to demand that any applicant withdraw a completed application. Due process requires that the County accept any completed application and duly process such. However, if that application is inconsistent with County regulations or court orders, that application, after due process is accorded, may be denied.

Further, while I agree with your analysis regarding the court’s rulings related to limitation of SRRQ’s non-conforming rights, the court stated that it did not have sufficient evidence before it to rule on other issues. The court directed the County to conduct administrative hearings (at which time evidence would be presented) related to, among other things, SRRQ’s reclamation plan.

I do not read the court’s order as prohibiting the Board from considering any and all issues related to reclamation, including identifying project impacts, exploring environmentally superior alternatives and imposing appropriate mitigation measures. As an example, the evidence may show that stockpiling overburden (suitable for reclamation) onsite for an interim period (subject to conditions) is environmentally superior to causing such to be removed and requiring fill material to be later transported in during reclamation. If you believe that the court intended to restrict the Board’s full examination and consideration of reclamation plan project/CEQA alternatives, I would encourage you to file an appropriate motion with the court to clarify that issue.

In addition to the issues raised by your letter, your status conference statement raises two additional issues.

You first opine that the “use permit” review must include McNair’s Brick and Marin Aggregate. I must respectfully disagree.

In fact, the relevant permit applied for is a surface mining and quarrying permit governed by Marin County Code (“MCC”) Title 23 not a use permit (which is governed by MCC Title 22.) MCC Chapter 23.06 applies exclusively to extractive/mining operations such as SRRQ and not to industrial operations such as McNair’s Brick and Marin Aggregate.
More importantly, no use permit was required for any of the three operations nor could a use permit be presently issued given that said uses are prohibited by the zoning and general plan and exist by virtue of their non-conforming status.

Notwithstanding that the County may not condition either McNear's Brick or Marin Aggregate operations through the mining permit process it would appear that cumulative impacts associated with those operations will be considered in any CEQA analysis related to SRRQ's applications: I've also been advised that CDA has commenced a code enforcement investigation in response to your previous letter regarding McNear's Brick.

Secondly, you contend that SRRQ has not provided a meaningful topographical map in compliance with the court order. I have been advised by my clients that the Public Works Department is satisfied that it has received compliant maps.

Finally, Supervisor Adams and staff agree with your suggestion that counsel and representatives from the Coalition, SRRQ and County participate in meetings, perhaps every other month, to discuss issues of interest related to this matter.

Very truly yours,

[Signature]

James G. Flageollet
Chief Deputy County Counsel

cc: Farhad Mansourian, Dir., DPW
Supervisor Hal Brown
Supervisor Susan Adams
Supervisor Steve Kinsey
Supervisor Cynthia Murray
Supervisor Charles McGlashan
Eric Steger, DPW
Bob Beaumont, DPW
Tim Haddad, DPW
Tom LAI, CDA/Planning
Aimi Dutra, SRRQ
Chris Locke, Esq.
John Taylor, Esq.
Point San Pedro Road Coalition
SUPERIOR COURT OF THE STATE OF CALIFORNIA
MARIN COUNTY JUDICIAL DISTRICT

HON. JOHN A. SUTRO, JR., JUDGE

DEPARTMENT H

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POINT SAN PEDRO ROAD
COALITION, ET AL,
Plaintiffs,

vs. No. CV 014584

SAN RAFAEL ROCK QUARRY, INC.,
Defendant.

REPORTER'S TRANSCRIPT OF CASE MANAGEMENT CONFERENCE

Wednesday, April 6, 2004

Reported by: CHRISTINA GILSON, CSR NO. 9824
APPEARANCES

For the Plaintiffs:

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- - -
WEDNESDAY, APRIL 6, 2005 9:25 O'CLOCK A.M.

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THE COURT: Point San Pedro Road Coalition versus San Rafael Rock Quarry.

MR. FLAGEOLLET: Good morning, your Honor. Jim Flageollet on behalf of the County of Marin.

MR. EDGCOMB: Good morning, your Honor. John Edgcomb for plaintiff, Point San Pedro Road Coalition.

MR. POLLAK: Good morning, your Honor. Harrison Pollak for plaintiff, People of the State of California.

MS. METCALF: Good morning, your Honor. Amanda Metcalf, plaintiff, your Honor.

MR. LOCKE: Good morning, your Honor. Chris Locke on behalf of San Rafael Rock Quarry.

MR. TAYLOR: Good morning, your Honor. John Taylor on behalf of the defendants.

THE COURT: Anybody else? Do you want to state your appearance?

MR. FRIEMAN: My name is Jonathan Frieman.

THE COURT: Thank you for your patience, everybody. I didn't think it was fair to the rest of the calendar, since this matter may not take much time, but I didn't want to run the risk of keeping everybody else sitting here for this matter.
I've reviewed the status reports filed by the County and by the Coalition and by the defendant, and I don't know if anybody present wishes to make any comments with respect to those documents or anything else, but I don't have any comment that I would make at this time, pending whatever you all have to say.

MR. FLAGEOLLET: I don't have anything to add to the County's status report, but I would be happy to answer any questions.

THE COURT: All right. I really don't have any. Mr. Edgcomb?

MR. EDGCOMB: I guess I would just expound for a moment on what I see as the primary issue which is when we had the trial back in 2003, which resulted in an order in April 2004, two elements of that order established that the Quarry did not have a vested right to continue to do two things: One is to dispose of or place over burden end or pond tailings in the brick resource area.

The other was to grade or fill in the areas that they said they would preserve in natural state.

And the concern that we, the Coalition, have is that the amended reclamation plan of 2004 that's been submitted by the Quarry contemplates doing just that, in particular, the placement of approximately two million tons of over burden and pond fronds in the brick resource area and in their status conference statement they don't deny
that. What they indicate is that somehow this amended
reclamation plan is going to give them the right to do
that, even though you've already ruled they don't have the
vested right to do that.

THE COURT: Well, I noted your concern in those
regards and there is no amended reclamation plan, at this
point, of course. That's under consideration and will be
the subject of, it looks like, considerable study before
it's finally approved in whatever form it may be approved.

So I don't think it's appropriate for the Court to
interject itself, at this juncture, in that regard.

I'm going to assume that everybody is going to
abide by the orders that I've issued to date in this
matter.

And so I think that your concern, in that regard,
at least, is premature because there is still quite a bit
of the process left to go. And I'm sure that you will have
your client will have an opportunity to present its
views and make the same arguments to the administrative
agencies that are responsible for finally a proving
whatever reclamation plan results from the proposed plan
that's been submitted by the Quarry.

MR. EDGCOMB: It's just my concern that, as you
know, there is going to be this lengthy process, a lot of
money is going to be spent on the environmental statements,
and when we get to the end, to the central tenet, which is
the placement of all this material is illegal --

THE COURT: Well, if I were you, I would worry
about a problem when you have it. And you might not have
it.

So I'm concerned, too, that these processes take
as long as they do. This is, unfortunately, something that
should have been done a long time ago and it hasn't.

And I'm satisfied, at this juncture, that the
County and the Quarry are moving ahead in good faith and
with diligence to do what needs to be done under the mining
laws and local ordinances.

And that's, at this point, I think, all that I can
do, is make certain that the matter is moving ahead as
diligently as possible.

And, unfortunately, environmental impact reports
or CEQA matters, if they're involved, take time for
resolution. And I don't think there is anything I can do
about that.

MR. EDGCOMB: If nothing else, you won't be
surprised if within a year and a half from now we have to
start the process over again.

THE COURT: Well, I certainly hope so. And I
trust that everybody here is intelligent enough not to want
to subject their clients to unnecessary court proceedings.

Okay. Anybody else for the plaintiffs? Ms.
Metcalf, anything?
STATE OF CALIFORNIA  

COUNTY OF MARIN  

I, CHRISTINA GILSON, an Official Shorthand
Reporter for Marin County Superior Court, in and for the
County of Marin, do hereby certify that the foregoing
Reporter's Transcript is a full, true and correct
transcription of my shorthand notes taken of the
aforementioned proceedings at the time and place therein
indicated.

IN WITNESS WHEREOF, I have hereunto set forth my
hand this 11th day of April, 2005.

Christina Gilson  
CHRISTINA GILSON, CSR NO. 9824
April 11, 2008

Mr. Brian Peer
The Dutra Group
San Rafael Rock Quarry
1000 Point San Pedro Road
San Rafael, CA 94901

Re: Comments on the San Rafael Rock Quarry Amended Reclamation Plan and Amended Surface Mining and Quarrying Permit

Dear Mr. Peer:

The following are our review comments on the Draft Environmental Impact Report (DEIR) for the San Rafael Rock Quarry Amended Reclamation Plan (ARP) and Amended Surface Mining and Quarrying Permit (AQP) prepared by Environmental Science Associates (ESA) and dated February 2008 (ESA 2008). The comments focus on Section 4.2, Air Quality Impacts, and the related appendices, Appendix C (Air Quality Calculations), Appendix D (Health Risk Assessment) and Appendix N (Laboratory reports for rock and soil samples).

Overall, the DEIR is a well written and thorough document. We agree with the major DEIR conclusions:

- Mitigation measures and equipment upgrades already in place have reduced dust and diesel emissions.
- The highest concentrations of dust (PM10) occur when the winds are blowing from locations other than the Quarry.
- There is no discernible change in dust emissions due to blasting.
- Diesel emissions from ongoing operations pose no significant risk.
- Crystalline silica, a naturally-occurring substance in soil throughout the area, poses no significant risk.
- Restricting Quarry operations would increase greenhouse gas (GHG) emissions.

However, there are some issues with which we disagree, including:

- Calculating cumulative risk by including past operations is inappropriate under the California Environmental Quality Act (CEQA) and is not consistent with agency risk assessment guidance.
- Analysis based on an assumed 20% increase in operations is inconsistent with the Quarry’s proposal for continued operations subject to existing restrictions, and includes other incorrect assumptions that overstate emissions.
- Impacts from dust, carbon monoxide (CO), and nitrogen oxides (NOx) are not unavoidable and can be mitigated below a level of significance by reducing the intensity of Quarry operations during reclamation activities.
Additionally, insufficient data was presented in the DEIR to recreate the emissions estimates, air concentrations and health risk calculations. Missing data includes: emissions data used for the risk assessment, the transformation of that emissions data into exposure concentrations, the toxicity values used to estimate risks, and the methods used to estimate emissions. This data should be supplied and should be usable to those skilled in the art to allow verification of the methods and calculations.

Lastly, there are two issues presented in the DEIR where we agree with the conclusions but feel additional explanation is warranted.

- Measured and modeled concentrations of crystalline silica, a naturally occurring compound, in ambient air near the Quarry are below US ambient average concentrations and well below levels linked to adverse health effects.
- Removing a local source for aggregate, by restricting Quarry operations, would increase GHG emissions and other environmental impacts in Marin County and the region.

This letter is divided into the four sections to address in more detail selected topics discussed above: 1) cumulative risk impacts, 2) air quality impacts from dust, CO, and NOx, 3) crystalline silica, and 4) GHG emissions.

1) CUMULATIVE RISKS

The health risk assessment (HRA) results presented in the DEIR indicate that health risks associated with the ARP and AQP would be less than significant when mitigation measures are in effect. As discussed in Impact C4.2-9, the estimated maximum incremental cancer risk associated with mitigated future mining operations conducted concurrently with the reclamation activities is 7.7 in a million, which is below the Bay Area Air Quality Control Board (BAAQMD) significance threshold for cancer risk of 10 in a million (BAAQMD 1999). Impacts C4.2-9 and C4.2-10 also indicate that the chronic and acute non-cancer health impacts are less than the BAAQMD significance threshold (i.e., a hazard index greater than 1.0 for noncancer impacts). Both of the noncancer impacts are below significance thresholds without requiring mitigation. Therefore, the DEIR shows that the current and proposed operation of the Quarry, as mitigated, presents no significant risk to the surrounding population. This is true even though the DEIR incorrectly assumes that future production at the Quarry would increase by 20%.

Cumulative Impacts

The DEIR proceeds to identify Impact C4.2-12, calculating “cumulative” impacts by combining impacts from past and future operations, and concluding that the cumulative impact is significant and unavoidable. Calculating cumulative impacts by combining past and future operations is incorrect and unprecedented. CEQA requires evaluation of “past,
present, and probable future projects producing related or cumulative impacts.” By
discussion of past projects, the regulation does not anticipate that past impacts of existing
projects will be discussed. Rather, it means projects that are ongoing or will occur in the
future, but are past the approval process.

There is lengthy discussion in the California Code of Regulations (CCR) about how to
find and describe future projects. There is no discussion whatsoever about how or
whether to include activities that occurred previously and has been completed. Events
that occurred in the past are typically a part of the baseline environmental conditions.
BAAQMD CEQA Guidance (BAAQMD 1999) identifies cumulative impact as follows:

*Any proposed project that would individually have a significant air quality impact
(see Thresholds of Significance for Impacts from Project Operations, above)
would also be considered to have a significant cumulative air quality impact.*

*For any project that does not individually have significant operational air quality
impacts, the determination of significant cumulative impact should be based on an
evaluation of the consistency of the project with the local general plan and of the
general plan with the regional air quality plan. (The appropriate regional air
quality plan for the Bay Area is the most recently adopted Clean Air Plan.)*

According to the BAAQMD, cumulative impacts should evaluate impacts from the
project and nearby sources to ensure consistency of the project with the regional air
quality plan. There is no provision to evaluate past impacts, as presented in the DEIR.
If this standard were applied to all projects, very few environmental improvements would
be approved for existing facilities, as most would have historical air quality impacts that
are significant and unavoidable. For example, it would be unlikely that any freeway
could be modified or new emissions control technology could be installed at a refinery or
chemical plant. Historically, breathing air in the San Francisco Bay Area would result in
risks greater than 10 in a million (ARB 2007). Application of this standard to all projects
would be antithetical to the intent of CEQA.

In Impact C4.2-12, the contribution of past risk (1982 – 2007) is estimated to be 109 in a
million while the future risk is 7.7 in a million, for a total of 117 in a million. The
significant and unavoidable impact identified results from the estimate of past operations.
As stated in Impact C4.2-9, the cancer risk associated with mitigated future operations,
7.7 in a million, is below the BAAQMD significance threshold of 10 in a million. As
stated earlier, the proposed mitigated future operations from the project present no
significant risk to offsite receptors. Impacts of the past are by definition unavoidable and
are not a basis for cumulative impact analysis under CEQA.

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1 California Code of Regulations §15130(b)(1)(A)
Risk Assessment Methodologies

As noted above, calculating cumulative risk by including past operations is inappropriate under the California Environmental Quality Act (CEQA) and is not consistent with agency risk assessment guidance. The evaluation of past risk using risk assessment techniques that are designed to evaluate potential future risks, are contrary to risk assessment guidance. Relevant risk assessment guidance discusses how to predict future risks based on worst-case exposure assumptions (Office of Environmental Health Hazard Assessment [OEHHHA] Guidelines 2003, BAAQMD CEQA Guidelines 1999, or BAAQMD HRA guidelines 2005).

The primary reason that risk assessments are not conducted for past exposures is that there is some certainty about past exposures, and conservative exposure assumptions need not be used. Clear examples of why using conservative future potential default assumptions in a retrospective risk assessment creates incorrect values can be found by examining the retrospective risk assessment conducted for the San Rafael Rock Quarry’s previous operations as presented in the DEIR.

Estimated cancer risks from past operations are overstated in the DEIR for several reasons. As shown in Figure 4.2-3 of the DEIR, the diesel particulate matter (DPM) emissions associated with on-road and off-road equipment operating at the Quarry have decreased dramatically and consistently since 1982, and will continue to decrease as more emissions controls are phased in. This is the reason risks associated with past operations are much higher than those associated with current and proposed operations, which are not above significance thresholds. The DEIR dramatically overestimates exposure for those residences in the areas with the highest predicted exposures (e.g., Marin Bay Park and Heritage Drive). The analysis presented in the DEIR assumes that the exposure would have occurred for the entire 26 year duration (e.g., that a resident was living there continuously from 1982 – 2007). However, this does not reflect the actual situation, as none of those residences was built before 1989 in the case of Marin Bay Park and 1988 for Heritage Drive, as shown in Figure 1. No one was living in the area of highest past exposure during the period of highest DPM emissions (1982 – 1989); therefore, the actual exposure at these locations would be significantly lower than were estimated in the retrospective HRA.

A second reason why risks from past operations are dramatically overstated results from the exposure assumptions used in the HRA. Most people live in the same residence for less than nine years; however, the HRA assumes that someone lives in the same house for the entire 26 year duration. The HRA also assumes that individual were at home for 24 hours per day, seven days per week all year except for two weeks vacation. This assumes that individuals did not work outside the home, attend school, go shopping or leave home for more than 240 hours per year for each of the past 26 years. Additionally, most of those residences have not been continuously occupied by the same family for the 18 years since the houses were built. While these assumptions may be useful in providing a worst-case estimate for future risks, this approach dramatically overestimates risks from past operations when past behaviors are or can be known.
An additional reason why risks from past operations are overstated results from the use of an inappropriate value for breathing rate. The HRA used the 95th percentile (high-end) breathing rate for an adult of 393 per liter per kilogram per day (L/kg-day). However, there is a guidance memorandum, jointly issued by the Air Resources Board (ARB) and OEHHA (ARB 2003), which supersedes OEHHA’s Hot Spots Guidance (OEHHA 2003) in certain circumstances. Specifically:

“For all new carcinogenic risk assessments that are based on the breathing (inhalation) exposure pathway only, we recommend.....For a Tier 1 or Tier 2 assessment, the potential cancer risk should be reported using the high-end (95th percentile), mean (65th percentile), and the 80th percentile breathing rate. When a single cancer risk value is required for a risk management decision (e.g., permitting or the Hot Spots Program), the potential cancer risk should be based, at a minimum, on the breathing rate representing the 80th percentile.”

Additionally, in its risk assessment guidelines (BAAQMD 2005), the BAAQMD issued the following statement:

On October 9, 2003, a statewide interim Risk Management Policy for inhalation-based residential cancer risk was adopted by the California Air Resources Board (ARB) and Cal/EPA’s OEHHA (http://www.arb.ca.gov/toxics/rmpolicy.pdf). For the HRSA methodology used in the Air Toxics NSR Program, the District has conformed with these State guidelines and adopted the interim exposure assessment recommendations made by ARB and OEHHA. The interim policy recommends where a single cancer risk value for a residential receptor is needed or prudent for risk management decision-making, the potential cancer risk estimate for the inhalation exposure pathway be based on the breathing rate representing the 80th percentile value of the breathing rate range of values (302 L/kg-day).

Therefore, in accordance with ARB, OEHHA and BAAQMD risk assessment guidance, the HRA analysis presented in the DEIR should have used the 80th percentile value (302 L/kg-day) for breathing rate to estimate the past and future cancer risks rather than the 95th percentile value. As such, all cancer risks for adult residents presented in the DEIR are overstated by approximately 30% by changing the breathing rate from 393 to 302 L/kg-day.

In combination, the approaches used in the HRA presented in the DEIR dramatically overestimate the past risks. Additionally, for reasons stated above, consideration of past risk is inappropriate and should not be used as a basis to conclude a significant and unavoidable impact.

2) AIR QUALITY IMPACTS – Dust, CO, and NOx

Daily emissions thresholds would be exceeded only if mining and reclamation were assumed to take place at maximum intensity at the same time. When activities are staggered or conducted over more than eight weeks per year, there are no significant
impacts from dust, CO and NOx. As discussed further below, combined impacts from ongoing operations and future reclamation can be avoided.

The daily maximum emissions of PM (dust), CO and NOx from peak rate reclamation activities (without and with mitigation measures included) are shown in Table 1. As Phases 1, 2 and 3 of the reclamation activities would occur concurrently with operational (mining) emissions, activity would not be significant if the total of emissions level of reclamation plus operational activities is lower than the BAAQMD significance threshold plus the total current emissions level of operational activities. The cumulatively significant impacts from operational (mining) and reclamation emissions occur only if mining operations and reclamation activities are conducted at peak rates on the same days. This can be mitigated by allowing reclamation activities to take place only when mining operations are below peak levels and/or by reducing the rate of reclamation activities.

Table 2 presents calculations to determine the required reduction in operational emissions in order to accommodate the increase of total emissions resulting from simultaneous reclamation activities. It is important to note that the analysis presented in Table 2 is based on the current mining operation emission estimates presented in Table 4.2-5 of the DEIR. As such, the daily estimated emissions in Table 2 are below the emission level that would exist without the voluntary measures that the Quarry is undertaking. The DEIR does not present the emission level of the quarrying operations without the voluntary measures. As the mining operation emission estimates presented in the DEIR are lower than such operational emissions, the reductions developed in Table 2 are overestimated. If this analysis were repeated using such operational emissions, it is possible that no reduction in the rate of mining operations or reclamation activities would be required. By the time reclamation occurs, there may also be improved technologies, fuels and other mitigation measures available to provide further reductions.

However, even using the conservative calculation as shown in Table 2, if mining operations are lower than 78% of maximum capacity for Phase 1 reclamation, 76% for Phase 2 reclamation, and 76% for Phase 3 reclamation, emissions from reclamation activities can be accommodated to achieve a level of less than significance through a reduction in the intensity of mining operations alone. Thus, if reclamation takes place only when mining operations are conducted at less than 76% of peak activity; there would be no significant impacts.

Since Phase 4 of the reclamation activities would occur after cessation of mining operations, estimated to occur 15-17 years in the future, emissions from such reclamation activities would not be significant if they were lower than the BAAQMD significance threshold. As shown in Table 2, the primary limiting factor for Phase 4 operations is dust generation. As a result, more aggressive mitigation (e.g., either additional dust control or extending reclamation activities over a period longer than 8 weeks per year) would allow Phase 4 reclamation activities to proceed without reducing the rate of such activities. The secondary limiting factor is NOx emissions, which would be below the threshold at 29% of peak operations. Again, additional mitigation for NOx emissions would allow Phase 4 reclamation activities to proceed without reducing the rate of such activities. Thus, here
too, the impacts identified in the DEIR are avoidable, and can be reduced to less than significant with mitigation.

3) CRYSTALLINE SILICA

The DEIR concluded that potential exposure to crystalline silica from Quarry activities does not pose a health risk to nearby residents. ENVIRON agrees that these potential exposures do not pose a health risk, and would like to provide the following information to further support that conclusion. In addition, we would like to take this opportunity to respond to comments raised at the March 25, 2008 public hearing, including assertions that crystalline silica is not naturally occurring. In fact, as discussed below, crystalline silica is naturally occurring in ambient air, as a result of erosion of crystalline silica containing materials.

Ambient Concentrations

In this section, the following points are made:

- Crystalline silica is a naturally occurring material;
- All soils contain at least trace amounts of crystalline silica;
- Because crystalline silica is present in nearly all types of soil, typical activities that result in soil-based dust emissions, result in crystalline silica emissions;
- Ambient air samples taken near the Quarry did not detect crystalline silica;
- The estimated modeled concentration of crystalline silica in the DEIR (~ 1.7 µg/m³) is below the US ambient average concentration of crystalline silica of 3 µg/m³, and is also below OEHHAs chronic reference exposure level (REL), which is also 3 µg/m³;
- Due to the analytical method used, we believe that the fraction of crystalline silica in Quarry material was considerably overestimated by ESA.

More detailed discussion is provided below.

- Crystalline silica is a naturally occurring material that is ubiquitous in many rock types. Crystalline silica exists in seven different forms or polymorphs, with quartz, cristobalite, and tridymite the three most common (United States Geological Survey [USGS] 1993). Overall, quartz is the most prevalent form of crystalline silica; it is abundant in most rock types, and is the second most common mineral in the world (USGS 1993; National Toxicology Program [NTP] no date). As a result, all soils contain at least trace amounts of crystalline silica (USGS 1993).

- Ambient (outdoor air) average concentrations of crystalline silica in the United States have been estimated to be 3 micrograms per cubic meter (µg/m³) (United States Environmental Protection Agency [USEPA] 1996).

- Ambient crystalline silica is emitted into the environment as a fractional component of many types of particulate emissions, generally measured as PM₁₀ (particulate matter of mass median aerodynamic diameter ≤ 10 micrometers [µm]). Fugitive sources are the major contributors to ambient PM₁₀, with typically less than a quarter
of fugitive dust PM$_{10}$ emissions occurring from construction, mining, or quarrying activities (USEPA 1996). The remainder of ambient PM$_{10}$ comes from agriculture activities, traffic, and wind erosion (USEPA 1996). Because crystalline silica is present in nearly all types of soil, typical activities that result in soil-based dust emissions, result in crystalline silica emissions.

- Consistent with these facts, PM$_{10}$ monitoring data collected near the San Rafael Rock Quarry in 2004-2005 (Sonoma Technology, Inc. [STI] 2007) found that the highest hourly PM$_{10}$ concentrations occur primarily when winds are not from the direction of the Quarry. This indicates that regional i.e., non-Quarry sources appear to contribute more particulates to local ambient PM$_{10}$ levels than does the Quarry.

- STI (2007) further determined that “During 14 months of sampling, there were only 8 days when monitoring sites had [a] PM$_{10}$ concentration > 50 μg/m$^3$ ...” the California 24 hour PM$_{10}$ standard (ARB 2008). Winds were not from the direction of the Quarry on 6 of the 8 days when PM$_{10}$ concentrations exceeded the California standard.

- The underlying geologic components of the Quarry consist of greywacke, shale, and silty clays (ESA 2008). When these materials are disrupted by quarrying activities, each component behaves differently due to mineral-specific differences in chemical composition, hardness, brittleness, and particle size. Consequently, the gross percentage of crystalline silica present in parent rock does not translate directly to an equal percentage in ambient PM$_{10}$ (Macdonald 2008). Consistent with this fact, ambient PM$_{10}$ samples taken near the quarry (STI 2007) did not detect crystalline silica above the sampling detection limit of approximately 0.5 μg/m$^3$ (measured separately as cristobalite, quartz, and tridymite) even though measurements of Quarry rock have reported the percentage of crystalline silica to range from 25.3% (Warters 2007 as cited in ESA 2008) to 29.1% (ENVIRON 2007 as discussed below) to 60% (ESA 2008). Although ENVIRON believes that the ESA (2008) results are not representative of crystalline silica levels in Quarry rock (see following discussion), calculations of hypothetical exposure to crystalline silica predicted on the assumption that fugitive dust emissions would contain that same overestimate (up to 60%) of crystalline silica, yielded estimated modeled concentrations of ~1.7 μg/m$^3$ (ESA 2008). This value is below the previously cited US ambient average concentration of crystalline silica, 3 μg/m$^3$ (USEPA 1996), and is also below OEHHA’s chronic reference exposure level (REL) which is also 3 μg/m$^3$ (OEHHA 2005). RELs are selected by OEHHA to represent an exposure concentration at or below which adverse health effects are not likely to occur (OEHHA 2000).

- As noted in the preceding paragraph, three sets of sample results have characterized the percentage of crystalline silica in Quarry materials. Data reported as Warters (2007) and cited in ESA (2008) found that Quarry material contained up to 25.3% crystalline silica. ENVIRON accompanied ESA when they sampled soil at the Quarry on November 7, 2007 and obtained soil samples from the same locations. In the five soil samples analyzed by ENVIRON, the crystalline silica content ranged from 25.4% to 29.1%, consistent with the Warters data, and considerably lower than the values presented by ESA of 40 to 60%. ENVIRON’s data were analyzed using a
modified National Institute for Occupational Safety and Health (NIOSH) 7500 quantitative method, including calibration using calcium fluoride as an internal standard. ESA’s results (2008) were obtained using a semi-quantitative method, and the laboratory analytical report does not indicate that an internal standard was used (Technology of Materials 2008). Instead, it appears that the results were estimated by comparing sample X-ray diffraction patterns to reference diffraction patterns in a computerized database. Because matrix effects alter (e.g., interfere with) the X-ray diffraction pattern characteristics of a specific mineral, these semi-quantitative results are not expected to be as accurate as those obtained by quantitative methods. For example, both the ESA and ENVIRON samples of Quarry materials contained feldspar and mica, minerals that act as positive interferents for the detection of crystalline silica due to the presence of silicon dioxide in both substances. That interference yields overlapping X-ray diffraction peaks that cannot be resolved by pattern matching alone, particularly if the reference standard does not contain similar interferences (Lopano 2008). Without the use of an interference-free crystalline silica reference standard, determination of sample composition by peak comparisons is likely to be inexact. Table 3 provides a list of locations of the ESA and ENVIRON samples, as well as the semi-quantitative (ESA) and quantitative (ENVIRON) results. Due to the likelihood of positive interference by other constituents in the samples analyzed, we believe that the fraction of crystalline silica was overestimated by ESA.

- In summary, the data and scientific literature do not support the conclusion that Quarry operations result in elevated levels of crystalline silica in ambient air, or that crystalline silica in ambient air in the vicinity of the Quarry poses a health hazard to nearby residents. Long-term PM$_{10}$ monitoring data did not detect crystalline silica in ambient air near the Quarry (STI 2007). Estimated airborne concentrations of crystalline silica, based on the highest measured percentage of crystalline silica in Quarry rock (using a semi-quantitative method that overestimates the concentration of quartz), resulted in a value (~ 1.7 µg/m$^3$, ESA 2008) that is below OEHHA’s chronic REL (OEHHA 2005).

Epidemiologic Data on Crystalline Silica

In this section, the following points are made:

- There is no statistical evidence for the induction of lung cancer by crystalline silica exposure in the absence of silicosis (OEHHA 2005);
- There are no published epidemiological studies indicating that ambient (or non-occupational) levels of crystalline silica increase the risk of lung cancer or silicosis;
- Neither ambient monitoring data nor modeled concentrations of crystalline silica estimated from the composition of Quarry rock (DEIR) provide any evidence that crystalline silica concentrations in the vicinity of the Quarry will approach levels linked to silicosis and lung cancer;
- Silicosis and lung cancer are tied to lengthy, repeated exposures to high concentrations of respirable silica – circumstances that do not exist in the vicinity of the Quarry.
More detailed discussion is provided below.

- OEHHA has concluded that there is no statistical evidence for the induction of lung cancer by crystalline silica exposure in the absence of silicosis (OEHHA 2005). Silicosis develops after chronic exposure to crystalline silica at concentrations > 50 µg/m³ – conditions typical of certain occupational settings. Neither measured nor modeled concentrations of crystalline silica in ambient air near the Quarry provide any indication that crystalline silica is present at levels approaching this concentration. Importantly, as discussed further below, there are no data that link ambient concentrations of crystalline silica to disease (OEHHA 2005; International Agency for Research on Cancer [IARC] 1997).

- Data from sand and quarry industry workers indicate that there may be an increased risk of silicosis in individuals with time-weighted average silica exposures above 1,500 µg/m³/year (Hughes et al. 2001) and cumulative exposures above 100 µg/m³ (Steenland and Sanderson 2001). These occupational concentrations are considerably higher than the concentrations of crystalline silica estimated by ESA in the neighborhood near the Quarry. Occupational studies also suggest that workers with silicosis also have an increased risk of lung cancer (Pelucchi et al. 2006).

- In summary, there are no published epidemiological studies indicating that ambient (or non-occupational) levels of crystalline silica increase the risk of lung cancer or silicosis. Although IARC (1997) concluded that exposures to crystalline silica in some occupations can increase lung cancer risk, the studies cited by IARC indicate that the silica concentrations linked to lung cancer are considerably higher than typical ambient levels. Additionally, evidence of carcinogenicity has not been detected in all industrial settings.

- Neither ambient monitoring data (STI 2007) nor modeled concentrations of crystalline silica estimated from the composition of Quarry rock (DEIR) provide any evidence that crystalline silica concentrations in the vicinity of the Quarry will approach levels linked to silicosis and lung cancer. We also note that silicosis and lung cancer are tied to lengthy, repeated exposures to high concentrations of respirable silica – circumstances that do not exist in the vicinity of the Quarry. As a result, it is highly unlikely that dusts present in ambient air near the Quarry contain sufficient silica to increase the risk of silicosis or lung cancer among nearby residents.

4) GREENHOUSE GAS (GHG) EMISSIONS

The DEIR did state that closing the quarry, or curtailing operations would result in additional GHG emissions. ENVIRON performed a screening analysis of the change of GHG emissions resulting from the cessation of operations at the San Rafael Rock Quarry. For this analysis, the baseline scenario is the normal operation of the San Rafael Rock Quarry by which aggregate obtained from the Quarry is supplied to both local projects and to levee repair projects in the Sacramento/San Joaquin Delta. In the alternative scenario (the Quarry is not operational), aggregate for the local projects would be
supplied by other quarries in the region and by shipments from Canada. Aggregate for projects for Delta repair would be sourced from quarries located at the Sierra foothills.

Methodology and Parameters

GHG emissions are produced in activities related to the production and the transportation of aggregate. In our analysis, ENVIRON assumed that the GHG emissions from the production of the aggregate are the same regardless of where the production occurs. This is a reasonable assumption as the equipment and the methods for producing aggregate are not likely to be substantially different at different quarries. Thus, this analysis focuses on the differences in emissions associated with transporting the aggregate. The main modes for transporting aggregate in this context are via barge (tugs), trucks, and ship. Table 4 shows the GHG emission factors for each mode of transportation used in this analysis. Tugs are used to push barges carrying aggregate on waterways to the levee repair sites. Trucks are used to transport aggregate from quarries to barges or to local customers. Ships are used to transport aggregate from Vancouver, Canada to the San Francisco Bay Area.

The distribution of aggregate going to local customers and to the Delta, for both normal and emergency use, is presented in Table 5. The annual distribution for the years 2000 through 2007 was provided by the Dutra Group. In addition, the aggregate capacities for the different modes of travel are shown in Table 5.

GHG Emissions for Transporting Aggregate to Local Customers

Baseline Scenario

The change in GHG emissions from local sourcing transport operations is presented in Table 6. In the baseline scenario, Dutra supplies, on average, 711,469 short tons of aggregate to local customers per year. Based on the capacity of the truck (27.5 short tons) and the average roundtrip distance to the customer (30 miles), this results in 776,149 vehicle miles traveled/year. The resulting estimated GHG emissions from truck transport are 886 metric tonnes carbon dioxide (CO₂)/year.

Alternative Scenario

In the alternative scenario, aggregate to the local customers would be supplied by local quarries and shipments from Canada. The local quarries include: Lake Herman, Blue Rock, Canyon Rock, Mark West, and Stony Point Rock. For purposes of this analysis, ENVIRON assumed that half of the aggregate would be supplied by the local quarries and half would be supplied from Canada. Of the aggregate supplied by the local quarries, ENVIRON assumed that the quantities were distributed equally. Based on the locations of the local quarries with respect to the San Rafael Quarry, ENVIRON estimated the average roundtrip distance required for trucks from each quarry to supply local customers. Based on this analysis, truck transport from the local quarries would result in approximately 584 metric tonnes of CO₂/year.
GHG emissions from shipping aggregate from Canada are presented in Table 6. The emissions due to sourcing from Canada are from shipping from Vancouver Island to the San Francisco Bay and additional trucking required to transport the aggregate from the Port of Richmond, Port of San Francisco or Port of Redwood City to the customer. Based on the amount of aggregate supplied from Canada, estimated shipping distances, and the aggregate-carrying capacity of ships, ENVIRON estimated the GHG emissions from shipping to be 3,892 metric tonnes of CO$_2$/year. An additional 945 metric tonnes of CO$_2$/year would result from truck transport from the Port of San Francisco to the local customer. This does not even include the additional emissions from truck transport from the quarries on Vancouver Island to the Port of Victoria.

In total, the transport emissions in the alternative scenario are approximately 5,421 metric tonnes CO$_2$/year. Thus, the alternative scenario would result in an additional 4,535 metric tonnes CO$_2$/year compared to the baseline scenario.

**GHG Emissions for Transporting Aggregate to the Delta**

**Baseline Scenario**

The GHG emissions associated with the transport of aggregate to the Delta are presented in Table 7. In the baseline scenario, aggregate is transported by barge from the San Pablo Bay to the levee repair sites. A tugboat typically tugs three barges and travels 60 miles to the Delta in about 14 hours. Based on this information and on the tug emission factor, the GHG emissions are estimated to be 1,548 metric tonnes CO$_2$/year.

**Alternative Scenario**

In the alternative scenario, aggregate formerly supplied from the San Rafael Rock Quarry would be supplied by quarries located at the foothills (Table Mountain, Jackson Valley, Carson Hill, New Hogan, and Parks Bar) and also by Lake Herman Quarry, located in Vallejo, California. Aggregate sourced from the foothills would be transported via truck to either Hood or Stockton to be loaded onto barges. Aggregate from the Lake Herman Quarry would be transported to Mare Island to be loaded onto barges. Based on driving distances from each quarry, aggregate carrying capacity, and the truck emission factors, the GHG emissions from trucking operations are estimated to be 1,949 metric tonnes CO$_2$/year (Table 7).

The emissions from tugging from Mare Island, Port of Stockton, and Hood were estimated to be 997 metric tonnes CO$_2$/year. Tugging emissions are based on estimated barge travelling distance on waterways and the aggregate-carrying capacity of each barge.

In total, the transport emissions in the alternative scenario are approximately 2,945 metric tonnes CO$_2$/year. Thus, the alternative scenario would result in an additional 1,397 metric tonnes/CO$_2$ year compared to the baseline scenario.

**Overall Emissions Difference**
Taking into account GHG emissions associated with the transport of aggregate to local customers and to the Delta for levee repair, shutting down operations at the San Rafael Rock Quarry could result in an increase of almost 6,000 metric tonnes CO₂/year, as shown in Table 8. This is due to the additional transportation required to supply local customers and the Delta construction in the event that the Quarry is closed.

If you have any questions regarding the above comments, please contact either Shari (415-796-1933) or Liz (415-796-1938) at your convenience.

Sincerely,

Shari B. Libicki, Ph.D.
Principal

Elizabeth A. Miesner, M.S.
Principal

cc Chris Locke, Farella Braun + Martel LLP
Aimi Dutra Krause, The Dutra Group
Al Cornwell, CSW/Stuber-Stroeh Engineering Group, Inc.
Attachments:

Attachment 1 – References

Table 1 – Emissions from Peak Operations of Reclamation without and with Mitigation Measures
Table 2 – Emissions Limitation Requirements to Meet Total Significance Level
Table 3 – Comparison of Reported Crystalline Silica Composition
Table 4 – Greenhouse Gas Emission Factors for Analysis
Table 5 – Aggregate Distribution and Parameters
Table 6 – Local Source Greenhouse Gas Emissions
Table 7 – Delta Repair Greenhouse Gas Emissions
Table 8 – Overall Greenhouse Gas Emissions Comparison

Figure 1 – Construction Year for Homes Near Quarry
Attachment 1: References


Technology of Materials. 2008. Analytic results of rock and soil samples submitted by ESA. (See also Appendix N of ESA, 2008).


Table 1
Emissions from Peak Operations of Reclamation without and with Mitigation Measures
San Rafael Rock Quarry
San Rafael, California

<table>
<thead>
<tr>
<th>Reduction Achieved Through Mitigation Measures</th>
<th>Emissions (lbs/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CO</td>
</tr>
<tr>
<td>40%</td>
<td>50%</td>
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<table>
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<th>Project Phase</th>
<th>Unmitigated</th>
<th>Mitigated</th>
<th>Unmitigated</th>
<th>Mitigated</th>
<th>Unmitigated</th>
<th>Mitigated</th>
<th>Unmitigated</th>
<th>Mitigated</th>
</tr>
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<tbody>
<tr>
<td>Total Phase 1 Emissions¹</td>
<td>691</td>
<td>415</td>
<td>89</td>
<td>45</td>
<td>668</td>
<td>334</td>
<td>573</td>
<td>180</td>
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<tr>
<td>Total Phase 2 Emissions¹</td>
<td>706</td>
<td>424</td>
<td>85</td>
<td>43</td>
<td>561</td>
<td>281</td>
<td>610</td>
<td>190</td>
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<tr>
<td>Total Phase 3 Emissions¹</td>
<td>725</td>
<td>435</td>
<td>89</td>
<td>45</td>
<td>509</td>
<td>255</td>
<td>608</td>
<td>189</td>
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<tr>
<td>Total Phase 4 Emissions²</td>
<td>1,240</td>
<td>744</td>
<td>116</td>
<td>58</td>
<td>561</td>
<td>281</td>
<td>1,158</td>
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<td>BAAQMD Significance Criteria</td>
<td>550</td>
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<td></td>
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<td>80</td>
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Notes:
1. Unmitigated emissions from DEIR Table 4.2-10
2. Unmitigated emissions from DEIR Table 4.2-11
### Table 2a

<table>
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<tr>
<th>EMISSIONS SOURCE</th>
<th>Emissions (ppm/day)²</th>
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<tr>
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<td>CO</td>
</tr>
<tr>
<td>Current Operational (Mining) Emissions¹</td>
<td>410</td>
</tr>
<tr>
<td>Current Operational + Phase 1 Mitigated Emissions</td>
<td>925</td>
</tr>
<tr>
<td>Current Operational + Phase 2 Mitigated Emissions</td>
<td>834</td>
</tr>
<tr>
<td>Current Operational + Phase 3 Mitigated Emissions</td>
<td>845</td>
</tr>
<tr>
<td>Phase 4 Mitigated Emissions²</td>
<td>744</td>
</tr>
<tr>
<td>BAAQMD Significance Criteria</td>
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### Table 2b

<table>
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<th>Total Significance Level, in pounds/day (from Table 2a - Current Operational Emissions + BAAQMD Significance Criteria)</th>
<th>CO</th>
<th>ROG</th>
<th>NOₓ</th>
<th>PM 10</th>
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</thead>
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<tr>
<td>950</td>
<td>152</td>
<td>1877</td>
<td>540</td>
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<table>
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<th>Total Operational + Phase 1 Mitigated Emissions, in pounds/day (from Table 2a)</th>
<th>CO</th>
<th>ROG</th>
<th>NOₓ</th>
<th>PM 10</th>
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<tr>
<td>925</td>
<td>117</td>
<td>2,131</td>
<td>640</td>
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<table>
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<tr>
<th>Emissions Above Significance Level, in pounds/day (= row b - row a)</th>
<th>CO</th>
<th>ROG</th>
<th>NOₓ</th>
<th>PM 10</th>
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<tbody>
<tr>
<td>None</td>
<td>None</td>
<td>254</td>
<td>100</td>
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<thead>
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<th>Current Operational Emissions, in pounds/day (from Table 2a)</th>
<th>CO</th>
<th>ROG</th>
<th>NOₓ</th>
<th>PM 10</th>
</tr>
</thead>
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<tr>
<td>410</td>
<td>72</td>
<td>1787</td>
<td>460</td>
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<table>
<thead>
<tr>
<th>Emissions Above Significance Level as Percentage of Current Operational Emissions (= row c / row b)</th>
<th>CO</th>
<th>ROG</th>
<th>NOₓ</th>
<th>PM 10</th>
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<tbody>
<tr>
<td>NA</td>
<td>NA</td>
<td>14%</td>
<td>22%</td>
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<table>
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<th>Percent Reduction of Operational Emissions Potentially Required (Absent Other Mitigation) to Achieve Less Than Significant Level During Concurrent Reclamation Activities (≤ 1 - row e)</th>
<th>CO</th>
<th>ROG</th>
<th>NOₓ</th>
<th>PM 10</th>
</tr>
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<tbody>
<tr>
<td>NRR</td>
<td>NRR</td>
<td>89%</td>
<td>78%</td>
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### Table 2c

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<tr>
<th>Phase 2</th>
<th>CO</th>
<th>ROG</th>
<th>NOₓ</th>
<th>PM 10</th>
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<tbody>
<tr>
<td>NRR</td>
<td>NRR</td>
<td>90%</td>
<td>78%</td>
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<table>
<thead>
<tr>
<th>Phase 3</th>
<th>CO</th>
<th>ROG</th>
<th>NOₓ</th>
<th>PM 10</th>
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<tr>
<td>NRR</td>
<td>NRR</td>
<td>98%</td>
<td>86%</td>
<td></td>
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### Table 2d

<table>
<thead>
<tr>
<th>Phase 4 Reclamation Activities</th>
<th>CO</th>
<th>ROG</th>
<th>NOₓ</th>
<th>PM 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Emissions, in pounds/day (from Table 2a - BAAQMD Significance Criteria)</td>
<td>550</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>b. Phase 4 Mitigated Emissions, in pounds/day (from Table 2a)</td>
<td>744</td>
<td>58</td>
<td>281</td>
<td>355</td>
</tr>
<tr>
<td>c. Emissions Above Significance Level, in pounds/day (= row b - row a)</td>
<td>194</td>
<td>None</td>
<td>201</td>
<td>275</td>
</tr>
<tr>
<td>d. Emissions Above Significance Level as Percentage of Phase 4 Mitigated Emissions (= row c / row b)</td>
<td>75%</td>
<td>NA</td>
<td>71%</td>
<td>77%</td>
</tr>
<tr>
<td>e. Percent Reduction of Reclamation Activity Emissions Potentially Required (Absent Other Mitigation) to Achieve Less Than Significant Level (≤ 1 - row e)</td>
<td>74%</td>
<td>NRR</td>
<td>29%</td>
<td>20%</td>
</tr>
</tbody>
</table>

### Notes:
1. Emissions from DEIR Table 4.2-4
2. Phase 4 will not be concurrent with Operational Emissions
3. Shaded cells indicate emissions levels from Phases 1-4 which exceed Total Significance Level
4. Note that additional mitigation measures would raise these percentages.

### Abbreviations:
- CO = Carbon monoxide
- NA = Not applicable
- NOₓ = Oxides of nitrogen
- NRR = No reduction required
- PM = Particulate matter
- ROG = Reactive organic gases
## Table 3
Comparison of Reported Crystalline Silica Compositions
San Rafael Rock Quarry
San Rafael, California

<table>
<thead>
<tr>
<th>ESA Sample Area</th>
<th>ESA/ENVIRON Sample Location</th>
<th>ESA Reported Quartz (%)</th>
<th>ENVIRON Analyzed Total Crystalline Silica (weight %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Rafael Rock Quarry</td>
<td>South Hill-1</td>
<td>~50</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>South Hill-2</td>
<td>~45</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>South Hill-3</td>
<td>~45</td>
<td>28.8%</td>
</tr>
<tr>
<td></td>
<td>South Hill-4</td>
<td>~55</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>South Hill-5</td>
<td>~55</td>
<td>29.1%</td>
</tr>
<tr>
<td></td>
<td>South Hill-6</td>
<td>~50</td>
<td>28.6%</td>
</tr>
<tr>
<td></td>
<td>Bag House-1</td>
<td>~50</td>
<td>25.4%</td>
</tr>
<tr>
<td></td>
<td>Bag House-2</td>
<td>~55</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Secondary Stockpile</td>
<td>~60</td>
<td>28.8%</td>
</tr>
<tr>
<td></td>
<td>North Brick-1</td>
<td>~55</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Quarry Bowl-1</td>
<td>~50</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Quarry Bowl-2</td>
<td>~40</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Quarry Bowl-Floor</td>
<td>~50</td>
<td>NA</td>
</tr>
<tr>
<td>McNear's Brickyard</td>
<td>Brickyard-Stockpile-1</td>
<td>~60</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Brickyard-Stockpile-2A</td>
<td>~65</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Brickyard-Stockpile-2B</td>
<td>~65</td>
<td>NA</td>
</tr>
<tr>
<td>Residential/Background</td>
<td>Gutter-1</td>
<td>~50</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Heritage Drive</td>
<td>~50</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>N. San Pedro Road</td>
<td>~40</td>
<td>NA</td>
</tr>
</tbody>
</table>

**Notes:**
NA = not analyzed
Table 4
Greenhouse Gas Emission Factors for Analysis
San Rafael Rock Quarry
San Rafael, California

<table>
<thead>
<tr>
<th>Tugs</th>
<th>CO₂ Emission factor¹</th>
<th>[metric tonnes/hour]</th>
<th>0.578</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck Emissions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel Efficiency²</td>
<td>[miles/gallon]</td>
<td>Empty</td>
<td>10</td>
</tr>
<tr>
<td>CO₂ Emission factor²</td>
<td>[kilogram/gallon]</td>
<td>Full</td>
<td>9</td>
</tr>
<tr>
<td>CO₂ Emission factor²</td>
<td>[kilogram/mile]</td>
<td>Empty</td>
<td>10.15</td>
</tr>
<tr>
<td>CO₂ Emission factor²</td>
<td>[metric tonnes/mile]</td>
<td>Full</td>
<td>10.15</td>
</tr>
<tr>
<td>Ship Emissions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO₂ Emission Rate³</td>
<td>[gram/hour]</td>
<td>Trailblazer⁴</td>
<td>4,848,655</td>
</tr>
<tr>
<td>Speed²</td>
<td>[knots]</td>
<td>Nevilana⁵</td>
<td>6,386,230</td>
</tr>
<tr>
<td>CO₂ Emission factor²</td>
<td>[gram/nautical mile]</td>
<td></td>
<td>312.687</td>
</tr>
<tr>
<td>CO₂ Emission factor²</td>
<td>[metric tonnes/nautical mile]</td>
<td></td>
<td>440.430</td>
</tr>
</tbody>
</table>

Notes:
1) The emission rate for tugs was based on specifications for the Cummins KTA38 and Detroit Diesel 4-71 engines operating on the Sarah Reed (tug owned and operated by the Dutra Group) with load factors of 0.5 (Cummins) and 0.31 (Detroit Diesel), and power of 1880 horsepower (hp), (Cummins) and 134 hp (Detroit Diesel). Emission factors were obtained from Air Resources Board (ARB, 2007). It was assumed that all tugs servicing the Quarry would have a similar emissions profile.
2) Truck fuel efficiency estimated by Dutra Group.
3) Carbon dioxide (CO₂) emission factor for vehicle diesel fuel combustion from California Climate Action Registry (CCAR, 2007) Table C.5
4) Both the Trailblazer and Nevilana were chosen as surrogates for a bulk material carrier. Both vessels are operated by Canada Steamship Lines (CSL) and have been used to supply bulk commodities to the San Francisco Bay Area.
5) The CO₂ emission rate was calculated by ENVIRON based on ship specifications found in Lloyds (2006), emission factors from ARB (2005) and ICF (2006), and load factors from ARB (2005). Full details can be found in Appendix A (Bulk Cargo Carrier Emissions in Transit).
6) Speed obtained from Lloyds (2006)

References:

Conversion Factors
1 knot/nautical mile/hour
1 852 kilometer/nautical mile
0.90718474 metric tonne/short ton
1000 kilogram/metric tonne
1000 gram/milligram
### Table 5
Aggregate Distribution and Parameters
San Rafael Rock Quarry
San Rafael, California

<table>
<thead>
<tr>
<th>Aggregate Distribution</th>
<th>Dutra Operations 1) (Baseline Scenario)</th>
<th>Shutdown Scenario 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2002</td>
<td>2003</td>
</tr>
<tr>
<td>Barge (Delta) Tonnage</td>
<td>[short tons]</td>
<td>581,411</td>
</tr>
<tr>
<td>Emergency Barge Tonnage</td>
<td>[short tons]</td>
<td>231,726</td>
</tr>
<tr>
<td>Local Truck Tonnage</td>
<td>[short tons]</td>
<td>772,375</td>
</tr>
<tr>
<td>Total Tonnage</td>
<td>[short tons]</td>
<td>1,624,561</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameters</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck 1)</td>
<td>Aggregate Capacity</td>
</tr>
<tr>
<td></td>
<td>[short tons]</td>
</tr>
<tr>
<td>Site</td>
<td>Trailblazer</td>
</tr>
<tr>
<td>Aggregate Capacity 1)</td>
<td>7,295</td>
</tr>
<tr>
<td>Aggregate Capacity 2)</td>
<td>3,497</td>
</tr>
<tr>
<td>Type</td>
<td>Aggregate Capacity</td>
</tr>
<tr>
<td></td>
<td>[short tons/charge]</td>
</tr>
<tr>
<td>Aggregate Density 1)</td>
<td>Density</td>
</tr>
<tr>
<td>Traps</td>
<td>152</td>
</tr>
<tr>
<td>LimeStone</td>
<td>95</td>
</tr>
<tr>
<td>Granite</td>
<td>28</td>
</tr>
<tr>
<td>Sand and Gravel</td>
<td>88</td>
</tr>
<tr>
<td>Sandstone</td>
<td>99</td>
</tr>
<tr>
<td>Average</td>
<td>98</td>
</tr>
</tbody>
</table>

Notes:
1) Distribution of aggregate during 2000-2007 for Dutra operations provided by Dutra Group.
2) The “shutdown scenario” assumes the cessation of operations at Dutra San Rafael Quarry and that aggregate would be provided by alternate sources locally, from the Sierra Foothills, or from Canada. The estimated distribution under this scenario was provided by Dutra Group. It is assumed that Canada would provide 50% of the aggregate for local projects.
3) Truck aggregate capacity provided by the Dutra Group.
4) The aggregate capacity for vessels are provided by Lloyd’s (2008) in “net tons” which refers to the volumetric capacity of the cargo area for storage. 100 cubic feet is equivalent to a “gross ton”.
5) The conversion from volumetric capacity to mass capacity is performed using an assumed density of aggregate, estimated using sample aggregate densities provided by ghttp://www.vulcanmaterials.com/cm.asp?content=aggreg.
6) Top capacity is provided by the Dutra Group.

References:

Conversion Factors:
100 cubic feet/gross ton
200 pounds/short ton
### Table 6

**Local Source Greenhouse Gas Emissions**

| San Rafael Rock Quarry
<table>
<thead>
<tr>
<th>San Rafael, California</th>
</tr>
</thead>
</table>

#### Baseline Scenario

<table>
<thead>
<tr>
<th></th>
<th>Metric tonnes/year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Roundtrip Distance per Trip</td>
<td>114.7</td>
</tr>
<tr>
<td>Number of Trips Required</td>
<td>2,538</td>
</tr>
<tr>
<td>Vehicle Miles Traveled (VMT)</td>
<td>1,563</td>
</tr>
<tr>
<td>CO₂ Emissions</td>
<td>3,872</td>
</tr>
</tbody>
</table>

#### Alternative Scenario

<table>
<thead>
<tr>
<th></th>
<th>Metric tonnes/year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount Hauled</td>
<td>177,087</td>
</tr>
<tr>
<td>Number of Trips Required</td>
<td>4,871</td>
</tr>
<tr>
<td>Average Roundtrip Distance</td>
<td>1,090</td>
</tr>
<tr>
<td>Vehicle Miles Traveled (VMT)</td>
<td>1,090</td>
</tr>
<tr>
<td>CO₂ Emissions</td>
<td>4,292</td>
</tr>
</tbody>
</table>

### Notes:

1. Average roundtrip trucking distance per trip provided by the Dutra Group.
2. The number of trips required is based on amount of aggregate supplied annually and round-trip capacity.
3. The CO₂ emissions are based on emission factors developed in Table 1. Assumptions are truck outbound and an empty truck inbound.
4. Assumes aggregate is sourced equally among the alternate quarries. Alternate quarries identified by Dutra Group.
5. Average distance to customer site is estimated by measuring the distance from the alternate quarry to a point 15 miles away from the Dutra San Rafael Rock Quarry in the direction of the alternate quarry. Distance is measured using Google Earth. This assumption is conservative because it assumes the shortest possible distance to a customer site from the alternate site.
6. The distance is measured from the northern part of Vancouver Island, Canada, to the San Francisco Bay. The distance is measured using Google Earth and represents a straight-line distance between the two locations. Actual shipping distance would be expected to be greater since the shipping vessel would travel only over water. The distance used here is NOT a roundtrip distance.
7. The CO₂ emissions are based on emission factors developed in Table 1.
8. It is assumed that shipments from Canada will call at either the Port of Richmond, Port of San Francisco, or Port of Redwood City and will then be transferred to trucks.
9. Driving distance was estimated using Google Maps driving directions as an average of the distance to Dutra from the Ports of Richmond, San Francisco, and Redwood City. The driving distance to the Central San Rafael exit of CA-101 was used since potential customers could be located any direction from Dutra.

### Conversions:

1 nautical mile = 1.15078 miles
### Baseline Scenario

<table>
<thead>
<tr>
<th>Tug Emissions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Distance from Dutra to Delta</td>
<td>miles</td>
</tr>
<tr>
<td>Time from Dutra to Delta</td>
<td>hours</td>
</tr>
<tr>
<td>Roundtrip time from Dutra to Delta</td>
<td>hours</td>
</tr>
<tr>
<td>Number of Trips to Delta per Year</td>
<td>96</td>
</tr>
<tr>
<td>Total Hours Tugging</td>
<td>hours/year</td>
</tr>
<tr>
<td>CO₂ Emissions</td>
<td>metric tonnes/year</td>
</tr>
</tbody>
</table>

### Alternative Scenario

<table>
<thead>
<tr>
<th>Alternative Scenario</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>From Footings</td>
<td></td>
</tr>
<tr>
<td>Tug</td>
<td></td>
</tr>
<tr>
<td>Port</td>
<td></td>
</tr>
<tr>
<td>Amount Hauled</td>
<td>shot tons</td>
</tr>
<tr>
<td>Number of Trips Required</td>
<td>trips/yr</td>
</tr>
<tr>
<td>Driving Distance to Port</td>
<td>miles</td>
</tr>
<tr>
<td>Roundtrip Driving Distance To/From Port</td>
<td>miles</td>
</tr>
<tr>
<td>Vehicle Miles Traveled (VMT)</td>
<td>miles/year</td>
</tr>
<tr>
<td>CO₂ Emissions</td>
<td>metric tonnes/year</td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>Total Emissions from Alternative</td>
<td>metric tonnes/year</td>
</tr>
</tbody>
</table>

### Difference between Baseline and Alternative

| Difference between Baseline and Alternative | metric tonnes/year | 1,397 |

**Notes:**
1. Average distance and travel time from Dutra San Rafael Rock Quarry to the Delta provided by Dutra Group.
2. Number of trips to the Delta per year via tugboat is based on capacity of barges (Table 2).
3. The CO₂ emissions are based on emission factors developed in Table 1.
4. The alternative scenario assumes that equal amounts of aggregate would be delivered from each of the alternate quarries identified by the Dutra Group. Aggregate would be trucked to the closest port and then transferred to a barge to be tugged to the Delta site.
5. Port location for transfer to barge is based on information provided by Dutra Group.
6. Number of trips to the ports is based on truck capacity (Table 2).
7. Driving distance to ports is based on Google Maps driving directions.
8. The distance from the port to the delivery area on the Delta is based on the location along the waterway that is 60 miles from the San Rafael Rock Quarry. Construction sites along the levees were obtained from: http://www.water.ca.gov/leves/sites/images/overall_map_110_sites.pdf.
9. The amount of time tugging on the Delta is based on the average trip of a tug boat from the San Rafael Quarry to the Delta (60 miles in 14 hours).
Table 8
Overall Greenhouse Gas Emissions Comparison
San Rafael Rock Quarry
San Rafael, California

<table>
<thead>
<tr>
<th>Increased Emissions [metric tonnes/year]</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Distribution to Local Sources</td>
<td>4,535</td>
</tr>
<tr>
<td>Distribution to Delta</td>
<td>1,397</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5,933</strong></td>
</tr>
</tbody>
</table>

19-104 cont.
April 11, 2008

Al Cornwell
CSW/Stuber-Stroeh
45 Leveroni Court
Novato, CA 94949

Subject: San Rafael Rock Quarry -- Review of Draft EIR, Biological Resources Section

Dear Al:

At your request, LSA Associates, Inc. (LSA) has reviewed the Biological Resources section (Chapter 4.3) of the Draft San Rafael Rock Quarry Amended Reclamation Plan and Amended Surface Mining and Quarrying Permit Combined Environmental Impact Report (DEIR; prepared by ESA, February 2008). LSA has previously conducted biological field studies at the Rock Quarry and prepared technical reports on biological resources and jurisdictional areas at the site. Our most recent studies were completed in 2004. LSA’s review of the DEIR was conducted by the same five biologists who conducted the studies in 2004: Steve Granholm (Wildlife Biologist/Ornithologist), Eric Lichtwardt (Wildlife Biologist), Sean Lohmann (Soil Scientist/Wetlands Scientist), Leslie Allen (Biologist), and Eva Buxton (Botanist). LSA’s comments are as follows:

In general, we found that the Biological Resources section is thorough and the information is largely accurate. In most cases, LSA does not substantially disagree with the nature of the impacts set forth or with their identified significance. We found that most of the mitigation measures are generally appropriate and should be effective if implemented properly. Some of our recommendations, however, would require changes in the Setting section, the impact assessment, and the mitigation measures. Specific comments are listed below, following the sequence of headings in the Biological Resources section.

SETTING

General Comment

LSA biologists have not surveyed the project area recently and cannot render a definitive opinion regarding the accuracy of the Setting section in describing the present condition of the project site. LSA’s review is based on the information presented in the text and LSA’s past site visits and familiarity with the project site, during 2004 and prior years.
Vegetation Communities and Wildlife Habitats - Terrestrial Habitat

General comments. Current standard scientific and English names for wildlife should be used (e.g., AOU 1998 and supplements; NGS 2006, Crother 2008). The entire document should be checked for current standard names; examples are listed below.

Page 4.3-5, Non-native grassland. Alligator lizard (*Elgaria multicarinata*) should be southern alligator lizard (*Elgaria multicarinata*) (see Crother 2008 and Stebbins 2003). Common bushtit (*Psaltriparus minimus*) should be bushtit (*Psaltriparus minimus*) (see AOU 1998 and supplements and NGS 2006).

Page 4.3-6, Coast live oak woodland. Pacific chorus frog (*Hyla regilla*) should be Sierran treefrog (*Pseudacris sierra*) (see Crother 2008). Gopher snake (*Pituophis melanoleucus*) should be gopher snake (*Pituophis catenifer*) (see Crother 2008 and Stebbins 2003). Pacific slender salamander (*Batrachoseps attenuatus*) should be California slender salamander (*Batrachoseps attenuatus*) (see Crother 2008 and Stebbins 2003). Oak titmouse (*Parus inornatus*) should be oak titmouse (*Baeolophus inornatus*) (see AOU). Scientific names should be included for white-tailed kite, wild turkey, mule deer, and monarch butterfly.

Page 4.3-6, Eucalyptus woodland. A portion of eucalyptus woodland in the SW Quadrant was omitted from Figure 4.3-1. LSA mapped this eucalyptus woodland, which is located immediately southeast of the unvegetated process water storage pond and is visible in the aerial photo, but it is shown as “Barren/Ruderal” in Figure 4.3-1.

Scientific names should be included for fringed myotis and long-eared myotis.

Vegetation Communities and Wildlife Habitats – Wetland Habitat

Page 4.3-6, Freshwater seep. English names should be consistent; for example “mule deer” was used in the “Coast live oak woodland” section and “California mule deer” in this section. The standard English name for raccoon should be northern raccoon (see Reid 2006). The first listing of northern raccoon in the document should include a scientific name.

Page 4.3-7, Freshwater marsh. Great egret (*Casmerodius albus*) should be great egret (*Ardea albus*); *Casmerodius* is an old name that is no longer in use (see AOU 1998 and supplements). *Ardea albus* is used correctly in Table E-1. The first listing of song sparrow in the document should include a scientific name.

Page 4.3-8, Seasonal Wetland. This section states that “there are five small seasonal wetlands located at SRRQ. These are shown in Figure 4.3-1 and are located in the northeastern corner of the property, adjacent to the brickyard road...” The seasonal wetland located adjacent to the brickyard road is actually in the northwestern corner of the property.

Page 4.3-8, Open Water. We have several comments:

1. “Open Water” should not be a sub-heading under the “Wetland” heading, as open water habitat is by definition not wetland. This section should be elevated to the same order as the Wetlands
heading, and should be titled “Open Water Non-estuarine Habitat” to be consistent with the existing “Open Water Estuarine Habitat” heading.

2. This section states that “open water habitat occurs in the process ponds in the NW Quadrant.” It should also be stated that open water occurs in the two unvegetated ponds (i.e., the process water storage pond and quarry pit) in the SW and SE Quadrants, as shown in Figure 4.3-1. The two unvegetated ponds most likely do not provide habitat for northwestern pond turtle; however, the water storage pond may provide habitat for California red-legged frog. LSA has observed California red-legged frog breeding in unvegetated active quarry ponds elsewhere in northern California.

3. LSA (2204) mapped five non-jurisdictional open water ponds in the NE and SE Quadrants; these are not illustrated in Figure 4.3-1. These ponds should be mapped unless they are now permanently dry.

As recognized elsewhere in the Biological Resources section, LSA’s determination of the Clean Water Act jurisdictional status of wetlands, waterbodies and drainage features in the SRRQ is a matter of professional opinion and is subject to verification by the Corps of Engineers. The Corps has not verified LSA’s 2004 delineation and could disagree with LSA’s determination for any or all “non-jurisdictional” features. If the non-jurisdictional ponds are still present in any form, then they should be recognized as potentially regulated by the Corps and other agencies until such time as the CWA mapping has been verified.

4. If any of these “non-jurisdictional” areas support seasonal or permanent open water, they should be illustrated in Figure 4.3-1 and included in this section and any other section that discusses potential impacts to California red-legged frog, regardless of their jurisdictional status or the absence of emergent marsh vegetation.

5. California red-legged frog (*Rana aurora draytonii*) should be California red-legged frog (*Rana draytonii*); this taxon is now considered a full species (see Crother 2008). The old name (*Rana aurora draytonii*) should also be noted, as the species is federally listed under this name.

Page 4.3-9, Open Water Estuarine Habitat. The largemouth bass (*Micropterus salmoides*) should be deleted from the list of commonly occurring fish species. This is a primarily freshwater fish and, though it can tolerate brackish water, it would not be expected to occur in the bay adjacent to the project site (see Moyle 2002).

Vegetation Communities and Wildlife Habitats – Waters of the United States

Page 4.3-11, California Wetland Definition. Discussion of State regulatory policy should not be located beneath a heading (“Waters of the United States”; page 4.3-9) that promises discussion of federal water policy. A new section called “Waters of the State” should be added for a discussion of State wetland definitions. This new section should discuss CDFG and Regional Water Quality Control Board (RWQCB) wetland definitions, as well as the RWQCB policy of adopting CWA (federal) definitions and delineations.
Special-Status Species

Page 4.3-12ff. and Table E-1 (Appendix E, p. 3-4 and 9-12) – Plants. We have several comments:

1. Table E-1, “Special Status Species Considered in the Evaluation of the Project Site,” is incorrectly cited as “Table A-1” throughout this section.

2. This section states that “Appendix E [Table E-1] provides comprehensive lists of the special status species that have been documented from, or have potential to occur in suitable habitat within, the general project area... Based on ESA’s review of the biological literature of the region, previous EIRs and surveys in the project vicinity, and an evaluation of the habitat conditions of the existing and proposed project sites, many of these species were eliminated from further evaluation because: (1) the project site or the immediate area does not provide suitable habitat, or (2) the known range for a particular species is outside of the project site and/or the immediate area.” To ensure adequate consideration of special-status plant species in the EIR, these two criteria should be modified, as discussed below.

Criterion (1). To rule out potential impacts on special status plant species, at least one formal survey should be required during the blooming period of all plant species listed in Table E-1 (p. 3-4 and p. 9-11) if potentially suitable habitat is present. (Such surveys are not required as part of the EIR process, but should be done in the future, prior to impacts on potential habitat for special-status species; see Impacts section, below). However, this section rules out surveys for many of the 25 species due to “limited suitable habitat” or “marginal habitat” on the site (see “Potential for Species Occurrence within the Project Area” column in Table E-1). This section identifies potential impacts (and requires surveys for) only two special status plant species – Gairdner’s yamaph (Perideridia gairdneri var. gairdneri) and Point Reyes bird’s-beak (Cordylanthus maritimus ssp. palustris). However, LSA recommends that at least one survey be required prior to project activities (during the plant’s blooming period) for all other species in Table E-1, if potentially suitable habitat is present (even marginal habitat).

Criterion (2). It is generally accepted that the absence of recorded observations of a plant species in a particular area does not confirm that the species is actually absent. For example, many observations of rare plants are not reported, or surveys of the site in question may have been conducted by a person who is not familiar with the plant in question. Also, some species have a widespread distribution; for example, marsh microseris (Microseris paludosa) (included in Table E-1) occurs in eight counties, from Mendocino to San Luis Obispo counties. Surveys should be required for such species (prior to impacts on potential habitat), as the species could be present on a particular project site, even if there are no recorded observations near that project site.

3. Surveys should be required (prior to impacts on potential habitat) for two federally listed plant species that have potential to occur on the project site because suitable habitat (i.e., grassland) is present: white-rayed pentachaeta (Pentachaeta belliiflora) and showy Indian clover (Trifolium amoenum). The potential for their occurrence is low, due to the disturbed nature of the site; however, disturbed sites can support rare plants. Therefore, surveys should be required for these two species. White-rayed pentachaeta is recorded from the San Quentin peninsula (approximately 4 miles south of the project site) (CNDDB 2008) and is not limited to serpentine soils; and showy Indian clover is recorded from the east side of the Tiburon peninsula.
(approximately 8 miles south of the project site) (CNDDB 2008). Showy Indian clover was known to have a wide distribution historically.

4. Table E-1 omits one other special status plant species that has potential to occur on the project site because suitable habitat (i.e., brackish or salt marsh) is present: San Francisco gumplant (Grindelia hirsutula var. maritima) (CNPS List 1B). This species should be included in Table E-1 and surveys should be required for this species.

REGULATORY SETTING

Jurisdictional Waters Including Wetlands

Page 4.3-24, State Policies and Regulations. This section should include descriptions of State jurisdiction pursuant to the Porter-Cologne Water Quality Control Act and Waste Discharge Requirements/Section 401 Water Quality Certification. These topics are also (appropriately) discussed on page 4.3-34.

Page 4.3-24, Bay Conservation and Development Commission. The third sentence should be amended as follows: “BCDC jurisdiction includes the waters of the Bay as well as a shoreline band that extends inland 100 feet from the high tide line or, where the shoreline is fringed with salt marshes, 100 feet inland either the mean high water line or 5 feet above mean sea level, whichever is higher.” This sentence should be followed by a note explaining how BCDC regulatory authority over the shoreline band differs markedly from its authority over Bay waters.

IMPACTS OF THE AMENDED RECLAMATION PLAN

General Comment – Biological Impacts Map

This section should include a map that illustrates the extent of impacts of the Amended Reclamation Plan on biological resources. We recommend creating a map that combines Figure 4.3-1 (Habitat Types) with an overlay that shows the extent of ground-disturbing activities due to the Amended Reclamation Plan.

“Impact R4.3-3: Reclamation activities implemented in Phases 1 through 4 could result in temporary disturbance to or mortality of Point Reyes bird’s beak and Gairdner’s yampah (Significant).” Page 4.3-28.

Page 4.3-28. This section states: “While potential habitat has generally been degraded at SRRQ, the native grassland areas of South Hill and on the low ridge south of McNear’s Brickyard, as well as the area of relatively undisturbed non-native grassland in the NE Quadrant known as Grassy Knoll, provide suitable habitat for Gairdner’s yampah.” This impact should be expanded to include potential impacts on all grassland/coastal scrub/oak woodland-associated plant species that are listed in Table E-1 (small areas of these habitats will be impacted under the proposed project, as stated on page 4.3-27, Impact R4.3-2).
Page 4.3-29, Mitigation Measure 4.3-3b. This mitigation measure should require presence/absence surveys (prior to impacts on potential habitat) for all grassland/coastal scrub/oak woodland-associated plant species that are listed in Table E-1.

Page 4.3-30, Mitigation Measure R4.3-3c. This mitigation measure states that “appropriate performance standards will include, but are not limited to: a 75 percent survival rate of restoration plantings or plant cover; absence of invasive plant species; and a functioning, self-sustaining plant community at the end of five years.”

Performance standards that require “absence of invasive plant species” are probably not feasible. The term “invasive plant species” is subjective and should be defined and/or qualified in a way that makes it clear to the permitting agencies and the project proponent which plant species meet the definition and to what degree they must be managed. Performance standards pertaining to undesirable plant growth should be feasible using reasonable measures that are currently available to habitat managers and landscapers.

“Impact R4.3-4: Reclamation activities implemented in Phases 1 through 4, as well as post-reclamation development could result in damage to or removal of protected trees that are within or adjacent to areas to be reclaimed or developed (Significant).” Page 4.3-30.

Page 4.3-31, Mitigation Measure R4.3-4e. This mitigation measure states that “the performance standards for tree replacement include all of the following: a 75 percent survival rate of restoration plantings or plant cover; absence of invasive plant species; and self-sustaining trees at the end of five years.”

Performance standards that require “absence of invasive plant species” are unrealistic and probably not feasible. The term “invasive plant species” is subjective and should be defined and/or qualified in a way that makes it clear to the permitting agencies and the project proponent which plant species meet the definition and to what degree they must be managed. Performance standards pertaining to undesirable plant growth should be feasible using reasonable measures that are currently available to habitat managers and landscapers.

“Impact R4.3-5 – Reclamation activities as well as post-reclamation development could result in substantial adverse effects on wetlands and waters of the U.S. under the jurisdiction of the Army Corps of Engineers, waters of the State under the jurisdiction of California Department of Fish and Game or the Regional Water Quality Control Board, and waters and land under Bay Conservation and Development Commission and State Lands Commission jurisdiction, and would be inconsistent with standards established for the Baylands Corridor in the Countywide Plan update (Significant).” Page 4.3-32.

Page 4.3-32, Shoreline Work and Tidal Open Water Area. The title of this section should be changed to “Shoreline Work, Tidal Open Water Area, and Former Tidal Marshes” because this section mostly discusses salt marshes and brackish marshes that are neither located along the immediate shoreline nor subject to tidal action.
Page 4.3-33, Freshwater Ponds, Marshes, Seasonal Wetlands, and Seeps. This section could be improved by listing the specific ponds, wetlands and other features that would be directly removed or altered by the project. The project description seems detailed enough to provide such a list, or this could be achieved by providing a Biological Impacts map, as recommended above.

Page 4.3-35, Mitigation Measure R4.3-5b. This measure requires establishment of a 100-foot buffer zone adjacent to the NW Quadrant marshes in compliance with the county’s Baylands Corridor designation for the project site. The mitigation measure states that “During reclamation activities, no temporary or permanent reclamation stockpiles, berms, or other features shall be placed within 100 feet of the NW Quadrant marshes”; however, the project description -- as illustrated on page 3-31, Figure 3-9 “Phase 1 Grading,” -- includes soil stockpiling (North West 1 Stock Pile) within this 100-foot buffer. The EIR authors should verify that such setbacks will be feasible.

The mitigation measure also calls for minimum 50-foot setbacks from seeps and seasonal wetlands. The EIR authors should verify that such setbacks will be feasible.

“Impact R4.3-8: Reclamation activities conducted in the vicinity of the process water ponds in the NW Quadrant have the potential to adversely impact California red-legged frog (Significant).” Page 4.3-41.

This section should address all ponds or open water features in the project area (except for the main quarry pit), not just the two ponds in the NW Quadrant. While unvegetated ponds do not provide high quality habitat for CRLF, they may provide habitat nonetheless. LSA has observed California red-legged frogs breeding in unvegetated active quarry ponds elsewhere in northern California.

IMPACTS OF THE AMENDED SURFACE MINING AND QUARRYING PERMIT

General Comment – Biological Impacts Map

This section should include a map that illustrates the extent of impacts of the Amended Surface Mining and Quarrying Permit on biological resources. We recommend creating a map that combines Figure 4.3-1 (Habitat Types) with an overlay that shows the extent of ground-disturbing activities due to the Amended Surface Mining and Quarrying Permit.

“Impact P4.3-13: Continued operations at the Quarry under an Amended Surface Mining and Quarrying Permit could adversely affect California red-legged frogs should they occur at the Quarry site (Significant).” Page 4.3-49.

Page 4.3-49. This section states that “the two process ponds in the NW Quadrant (shown as “Freshwater marsh” and “Open water” in Figure 4.3-1) provide aquatic habitat and freshwater emergent marsh that may support California red-legged frog (CRLF). Other areas mapped as open water on Figure 4.3-1 do not support emergent vegetation and are therefore not considered suitable habitat for CRLF.”
All sections addressing impacts and mitigation to CRLF and/or open water habitat should include all open water features on the project site (except for the main quarry pit), not just the two ponds in the NW Quadrant. While unvegetated ponds do not provide high quality habitat for CRLF, they may provide habitat nonetheless. LSA has observed California red-legged frogs breeding in unvegetated active quarry ponds elsewhere in northern California.

APPENDIX E

Table E-1

Page 2, California Tiger Salamander. Under the heading “Potential for Species Occurrence within Project Area,” it should state that this species does not occur in Marin County (i.e., there are no records).

Page 2, Short-Tailed Albatross. Under the heading “Potential for Species Occurrence within Project Area,” it is inaccurate to state that this species “…may forage in the project area.” The short-tailed albatross is a pelagic species and forages in off-shore waters. This species was once common (over 100 years ago) over oceanic waters in the Bay Area, but it is now very rare off-shore and is highly unlikely to occur on the Bay (even when it was common over 100 years ago).

Page 8, Long-Eared Myotis. Under the heading “Potential for Species Occurrence within Project Area,” it is incorrect to state that there is “suitable foraging habitat over open bay waters.” This species forages by gleaning insects from foliage in wooded areas and would not be expected to forage over the Bay (see Reid 2006).

Page 9, Fringed Myotis. Under the heading “Potential for Species Occurrence within Project Area,” it is incorrect to state that there is “suitable foraging habitat over open bay waters.” This species forages in wooded habitats (gleaning insects from foliage and in the open air) and would not be expected to forage over the Bay (see Reid 2006).

Please call or email me if you have any questions or comments on this letter.

Sincerely,

LSA ASSOCIATES, INC.

Steve Granholm
Principal
LITERATURE CITED


April 10, 2008

Al Cornwell
CSW/Stuber-Stroeh Engineering Group, Inc.
45 Leveroni Court
Novato, CA 94949

Subject: Response to Draft EIR Comments
San Rafael Rock Quarry Draft EIR
M&N No. 5487-01

Dear Mr. Cornwell,

We have received the technical memorandum, prepared by Coast & Harbor Engineering (CHE), under contract to Environmental Science Associates (ESA), relating to the CHE review of the Moffatt & Nichol (M&N) feasibility study for the proposed San Rafael Rock Quarry Marina. We have also received Section 4.5 Hydrology and Water Quality, from the Draft EIR for the San Rafael Rock Quarry ARP and AQP, prepared by ESA. As requested in your transmittal letter, dated March 6, 2008, we have reviewed these two documents.

For brevity sake, we have incorporated into this document, responses to only those comments for which the CHE response was not “Reasonable” or “Reasonable” with qualifications. Our responses to these comments are provided herein the following table for your review and consideration. Likewise, a similar table is provided following this table with our specific response to the viability of the proposed mitigation measure 4.5-6, identified in Section 4.5 of the Draft EIR.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Item 1: Jetties would not be expected to negatively impact adjacent shorelines</td>
<td>Questionable. At least some very basic qualifications of these predictions should be performed.</td>
<td>Based on existing site conditions (no evidence of sand transport or deposition) it is our opinion that littoral sand transport is not a significant transport process in the area. The jetties are recommended to prevent mudflat migration from reaches adjacent to the entrance.</td>
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<td>The sedimentation rate in the entrance channel is expected to vary from several inches to about one foot per year.</td>
<td>Questionable. It is likely that the channel area (specifically seaward of the jetties) will experience higher sedimentation rates, particularly following initial dredging.</td>
</tr>
<tr>
<td>Item 3</td>
<td>Harbor water quality can be maintained by preventing the discharge of pollutants into the harbor basin through the use of recognized Best Management Practices (BMPs).</td>
<td>Questionable. It is likely that marina uses are not the only potential cause of water quality degradation in the marina bottom water.</td>
</tr>
<tr>
<td><strong>Item</strong></td>
<td><strong>CHE Summary of M&amp;N Assumption/Approach</strong></td>
<td><strong>CHE Evaluation of M&amp;N Assumption Approach</strong></td>
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<td>Item 4</td>
<td>A portion of the increased costs associated with marina float and anchoring system construction and maintenance will be offset by the lack of initial and future maintenance dredging requirements.</td>
<td>Questionable. Initial excavation and dredging are required for the entrance channel.</td>
</tr>
<tr>
<td>Item 5</td>
<td>The existing quarry product loading pier could be modified to serve as a passenger loading facility for commuter ferry service within San Francisco Bay.</td>
<td>Questionable. No evaluation of the loading pier suitability or structural stability, or ferry service feasibility has been performed.</td>
</tr>
</tbody>
</table>

**Table A.1 Winds:**

| Item 6   | The average hourly wind speed at SRRQ is 11 mph. | Reasonable. However, this wind speed is not usable without definition of sampling time, record length, etc. | Agree - There are more comprehensive wind data records in the area (Hamilton and Chevron Pier) if wind wave analysis is to be performed. Furthermore, the statement was more for navigation and boating feasibility than wave hindcasting. |
| Item 7   | The maximum sustained wind speed is 32 miles per hour. | Reasonable. However, this wind speed is not usable without definition of event return period, sampling time, record length, etc. | See response above. |

**Table A.1 Waves:**

| Item 8   | Since the south wind does not exceed 30 mph for most of the time, the predominant waves from the south would be less than 3 feet, with a peak wave period of less than 3.5 seconds. | Reasonable. However, wind and wave statistics are not defined and therefore not usable. | See response above. |
| Item 9   | Similarly, waves coming from San Pablo Bay rarely exceed 3 feet and 3.5 seconds. | Reasonable. However, wave prediction methods and statistics should be defined. | See response above. |
| Item 10  | Maximum wave heights could reach about 5 feet in the vicinity of the site. | Reasonable. However, wave prediction methods and statistics should be defined. | See response above. |
### Table A.1 Sediment Transport:

<table>
<thead>
<tr>
<th>Assumption/Approach</th>
<th>CHE Evaluation</th>
<th>M&amp;N Response to CHE Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The dredged material is characterized as mostly silt or clay, which indicates that no active sand transport processes (either long shore or cross shore) occur in the vicinity.</td>
<td>Questionable. See Section A.2, comment 1.</td>
<td>Areas north of the entrance channel are characterized by tidal marshes and mudflats – evidence of sand transport was not observed, nor was it noted in the historical records for San Pablo Bay. We do not expect the sand transport processes to be significant enough to substantially invalidate the project as proposed.</td>
</tr>
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</table>

*Item 11*

<table>
<thead>
<tr>
<th>Assumption/Approach</th>
<th>CHE Evaluation</th>
<th>M&amp;N Response to CHE Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The coarser material on the beach is likely a relic of artificially placed fill material, and some of it may also be coming from erosion of the embankments which is transported around the point by predominant south waves.</td>
<td>Reasonable. Armoring of the original material mixed-size beach material (winnowing of fines) is also likely to be a cause of the presence of mostly coarse material.</td>
<td>Agreed.</td>
</tr>
</tbody>
</table>

*Item 12*

### Table A.2 Entrance Channel:

<table>
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<tr>
<th>Assumption/Approach</th>
<th>CHE Evaluation</th>
<th>M&amp;N Response to CHE Evaluation</th>
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<tbody>
<tr>
<td>The sand and mudflats immediately adjacent to the proposed entrance channel will not migrate into the entrance channel, as long as short entrance jetties are constructed on either side of the proposed channel. The proposed jetties should extend to a depth of approximately 5 feet below MLLW (8 feet below NGVD).</td>
<td>Questionable. See Section A.2 comment 2.</td>
<td>See response to comment above (Table A.1 Sediment Transport).</td>
</tr>
</tbody>
</table>

*Item 13*

<table>
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<tr>
<th>Assumption/Approach</th>
<th>CHE Evaluation</th>
<th>M&amp;N Response to CHE Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The proposed jetties will not cause an adverse effect on the adjacent shoreline...</td>
<td>Questionable. Jetty may intercept sediment transport that results in sediment deficit on down drift site of the shoreline.</td>
<td>Based on existing site conditions (no evidence of sand transport or deposition) it is our opinion that littoral sand transport is not a significant transport process in the area. The jetties are recommended to prevent mudflat migration from reaches adjacent to the entrance.</td>
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*Item 14*
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<td>Since the water depths are so great within the harbor basin, the opposite may be preferable (minimize the size of the entrance channel so as to keep currents high enough to limit sediment deposition from occurring within the entrance channel).</td>
<td>Reasonable. However, entrance channel dimensions should take into consideration water quality effects.</td>
<td>Agreed, this should also be considered when designing the entrance channel. However, considering the fact that the tidal prism (352 acre-feet) is estimated to be less than 3% of the total Bowl volume (12,570 acre-feet), changes to the entrance channel geometry will have minimal effect on residence time.</td>
</tr>
<tr>
<td>Item 16</td>
<td>A design entrance channel water depth of 12 feet below MLLW (15 feet below NGVD), 2H:1V side slopes, and an entrance channel width of 75 feet at the design depth are recommended.</td>
<td>Reasonable. However, entrance channel dimensions should take into consideration water quality effects.</td>
<td>See response above.</td>
</tr>
<tr>
<td>Item 17</td>
<td>The maximum tidal current is estimated to be approximately 0.67 feet/second in the entrance channel.</td>
<td>Questionable. See Section A.2, comment 3.</td>
<td>The depth averaged currents stated in the FS are just that &quot;depth averaged&quot;, and will not occur at mid depth. We agree that maintenance dredging will be required in the channel. The EIR includes substantially more analyses than performed by us for the Feasibility Study, and it should be possible to estimate sedimentation rates more accurately than our conceptual model attempted to.</td>
</tr>
<tr>
<td>Item 18</td>
<td>The associated maximum bottom shear stress (the force per unit area exerted by tidal currents over the bottom) is estimated to be 0.00082 lbs/ft².</td>
<td>Questionable. See Section A.2, comment 4.</td>
<td>See response above.</td>
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<td>For typical San Francisco bay mud, the critical shear stress for deposition (the minimum amount of shear stress required to keep the sediment particles in suspension) ranges from 0.001–0.002 lbs/ft² and the critical shear stress for erosion (the amount of shear stress required to initiate bottom sediment particle motion) is usually greater than 0.002 lbs/ft².</td>
<td>Reasonable. However, it should be taken into consideration that sediment in the channel may also include sandy sediment observed on the adjacent shorelines.</td>
<td>See response above. In addition, we do not believe it likely that sand will migrate from shoreline reaches adjacent to the entrance into the entrance channel. Results from the ADCIRC model, developed for the EIR, could be very easily post processed to yield an answer to this issue.</td>
</tr>
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</table>

**Table A.2 Waves:**

| Item 20 | Although a maximum wave height of 5 feet could occur in the vicinity of the project site... | Reasonable. However, since no statistical definition of this wave height or frequency of occurrence is given, this information is not useful and this statement cannot be evaluated. | The maximum wave height will be depth limited in the area - it does not need to be statistically derived. |

**Table A.2 Water Quality:**

| Item 21 | The total volume for the proposed harbor is estimated as 12,570 acre-feet below NGVD datum. | Questionable. See Section A.2, comment 5. | Quite possible. We did not generate a Digital Elevation Model of the quarry walls incorporating all the roads leading down to the bottom. We assume the commenter performed such an analysis. |
| Item 22 | The diurnal tidal prism (the volume different between the MHHW and MLLW) is calculated as 352 acre-feet. | Questionable. See Section A.2, comment 6. | It is typical for Coastal Engineers to use the longest record that is available in an area to estimate tidal datums. We have used the Chevron Oil Pier gage (over 5 yrs of data) instead of Point San Pedro (a few months long). |
| Item 23 | For completely mixed conditions (mixing takes place evenly throughout the basin and in the tidal range), the flushing time would be about 35.7 tidal cycles (18.5 days). | Reasonable. Theoretical total mixing would take place after 40 tidal cycles. | Quite possible. However, with the smaller tidal prism estimated in the DEIR (see above comment) we would have expected a shorter theoretical flushing time. |
AI Cornwall, CSW/Stuber-Stroeh Engineering Group, Inc.
April 10, 2008
Page 7

**CHE Summary of M&N Assumption/Approach**

For the potential long residence times in the harbor, controlling pollutant discharge will therefore be critical to maintaining water quality. Harbor water quality can be maintained by preventing the discharge of pollutants into the harbor basin through the use of recognized Best Management Practices (BMPs).

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**Table A.2 Float System:**

A potential marina in the SRRQ site would be able to be constructed and anchored similar to a freshwater marina at an inland lake with a few exceptions: [ALL BULLET POINTS].

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**CHE Evaluation of M&N Assumption Approach**

Questionable. See Section A.2, comment 7.

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**M&N Response to CHE Evaluation**

See response to Table 1 SUMMARY, third comment. In addition, we concur with the need for limnology studies to help with management of the deep reservoir, but disagree with the finding that the harbor will be considered an "impaired water body" and that it will "violate RWQCB Basin Plan standards".

---

In Section 4.5, we have reviewed and provided our comments related to those impacts and mitigation measures applicable to the proposed harbor at San Rafael Rock Quarry.

**Impact 4.5-6:**

Poor water quality conditions could occur in the deep water within the flooded Main Quarry Bowl due to long residence times and stratification at depth. The proposed project may result in degradation of water quality within the deep areas of the harbor basin (Significant).

**Additional Text on Pages 4.5-16 and 4.5-17:**

"...and the harbor will be considered an impaired water body"

"...would experience poor water quality, likely in violation of RWQCB Basin Plan standards".

**M&N Comment/Response:**

Table 1 SUMMARY, comment #14 and Table A-2 WATER QUALITY comment #6, both "question" the ability to maintain water quality within the harbor. Likewise, Section A.2 Detailed Review Comments, comment #7, questions the ability to maintain water quality solely through the implementation of BMPs, and goes on to recommend that "biological and chemical water resource specialists should be consulted regarding long-term bottom water quality in the quarry bowl."

We concur with CHE’s recommendation that specialists such as limnologists be consulted to address bottom water quality issues. However, Section 4.5 of the DEIR, Impact R4.5-6, second paragraph, appears to ignore these conclusions by, in our opinion, inappropriately concluding that "water quality in deep water would be impacted due to stagnation and stratification". These opinions in the DEIR apparently are based on the assumption that a long
residence time and stratification equates to degraded water quality. Such is not the case with all deep water bodies, several of which exist around the world, many of which admittedly are fresh or brackish water.

Furthermore, Mitigation Measure 4.5-6 proceeds to suggest reducing the depth of the Bowl by backfilling the Bowl to approximately 30 to 40 feet, apparently as the primary means of mitigating an impact that has yet to be confirmed. Two alternate mitigation measures are discussed later: 1) suggests a "deep water oxygenation/aeration procedure"; or 2) "opening another channel on an opposing side of the harbor". The former alternate measure is subsequently dismissed since "the technology may not currently exist." If low oxygen is determined to be a negative impact that requires mitigation, technology capable of improving oxygen levels at depth exists.

Consequently, we disagree with the assertion that this impact is "significant and unavoidable". We recommend Mitigation Measure 4.5-6 be revised to more accurately reflect the conclusions stated in the CHE technical study, and we also recommend alternate mitigation measure #1 as the proposed mitigation measure in lieu of "backfilling the Bowl", and the level of significance be revised to "less than significant".

We trust the above information adequately responds to the comments provided. Should you have any additional questions regarding the information provided herein, please do not hesitate to contact me at (925) 944-5411.

Sincerely,

MOFFATT & NICHOL

Richard M. Rhoads
Vice President

cc: Mr. Brian Peer
    Mr. Lee Selna
    Mr. Chris Locke
April 10, 2008

Al Cornwell
CSW/Stuber-Stroeh Engineering Group, Inc.
45 Leveroni Court
Novato, CA 94949

SUBJECT: Response to Draft EIR
San Rafael Rock Quarry

Dear Mr. Cornwell:

You have requested that I review the biological section of the Draft EIR for the San Rafael Rock Quarry dated February 2008. My expertise is in wetland and estuarine ecology, specifically tidal wetland ecology and restoration; having been a Professor of Biology at San Francisco State University’s Romberg Tiburon Center for Environmental Studies for 20 years, as well as its Director for 8 years. I have a Ph.D. in Botany, a Master of Science degree in Marine Science, and a Bachelor’s degree in Biological Sciences. I am currently President of WRA, Inc., an environmental consulting firm located in San Rafael, CA and am a certified Professional Wetland Scientist.

I am familiar with the San Rafael Rock Quarry having conducted an investigation of the wetlands on the quarry site for The Dutra Group during 2007. I have reviewed the DEIR and have the following comments relative to the biological section of the document:

Mitigation Requirement for Tidal Marsh Restoration Plan: Mitigation Measure R4.3-5a and Mitigation Measure C4.3-18b

Mitigation Measure C4.3-18b calls for the development of a tidal marsh restoration plan and completion of the tidal marsh restoration prior to the completion of Phase I reclamation activities. This mitigation requirement assumes that tidal restoration is the only feasible means to improve habitat quality in these marshes. However, this assumption is not based on a thorough analysis of constraints imposed by the surrounding infrastructure, utilities, and development around the marsh area. In a review of the existing conditions that used the California Rapid Assessment Method (CRAM), I conducted a study of the quality of the existing wetland habitat1. The CRAM method was developed by the San Francisco Estuary Institute with input from the US Army Corps of Engineers, Environmental Protection Agency, and the State Water Resources Control Board as a tool to determine the quality of wetlands. It provides an unbiased, scientific method to assess habitat quality in reference to other similar wetlands.

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1 WRA, Inc. 2007. Wetlands Habitat Quality Assessment for the San Rafael Rock Quarry. Prepared for: San Rafael Rock Quarry (copy attached).
The analysis found that the largest wetland in the Study Area (the West Wetland) had an assessment score of 73.7% and was observed to display characteristics of a well-functioning non-tidal seasonal salt marsh including dominance of native salt marsh plants. The two smaller wetlands to the northeast of the access road were found to be significantly impaired in function and heavily disturbed, relative to the West Wetland, by stormwater runoff, invasive plant species, trash from Point San Pedro Road and damage from vector control vehicles, among other stressors. The greatest potential for improvement in habitat quality is within the more heavily disturbed, smaller wetlands northeast of the access road.

While the habitat quality of the wetlands on the San Rafael Quarry site are affected by hydrologic flow restrictions, there are significant constraints to full tidal restoration related to the potential flooding of San Pedro Road and the access road to the brickyard by high tides and the loss of vegetated habitat through increased flooding of the marsh. There is the potential for improvement of the marsh habitats through other measures such as invasive species control, buffer establishment, and stormwater retention and treatment that may be sufficient to improve habitat quality of these wetlands.

My recommendation is that (1) the reference to "tidal exchange" in Mitigation Measure R4.3-5a should be revised to state "tidal control" to dampen inflow consistent with Mitigation Measure C4.3-18b; and (2) Mitigation Measure C4.3-18b should clarify that the Marsh Restoration Plan must include continued control of tidal inflow to prevent damage to the wetland ecology and flooding of Point San Pedro Road, McNear's Brickyard area, and access roads at the site. The Plan should focus on the opportunities and constraints that affect the marsh area and provide for an enhancement plan appropriate to the specific needs to preserve existing habitat quality and protect surrounding infrastructure.

Mitigation measures to reduce water quality impacts are available: Mitigation Measure R4.3-7 and Mitigation Measure R4.5-6.

The DEIR concludes that poor water quality within the flooded Marin Quarry Bowl could occur due to long residence times and suggests that this condition could result in impacts to special status species. Furthermore, the DEIR states that this impact is a significant unavoidable impact of the reclamation plan. The DEIR suggests that this impact could be avoided if the quarry bowl were to be filled with dredged materials, used as a freshwater supply reservoir or be left unfilled and not connected to the Bay.

In my review of this matter, I have read the reports prepared by Coast & Harbor Engineering and Moffatt & Nichol. I also contacted Dr. Alex Horne, Professor Emeritus from the University of California at Berkeley. Dr. Horne's expertise is in Ecological Engineering—basically green sustainable solutions to environmental problems such as pollution and water quality issues. He was a Professor in the Civil & Environmental Engineering Department at the University of California, Berkeley from 1971-2003. He has a Ph.D. in Limnology and Oceanography (Dundee, Scotland) and a Bachelor's degree in Biological Chemistry (Bristol, England). His area of expertise is solving problems of low dissolved oxygen, nuisance algae blooms and the like in lakes, reservoirs and rivers as well as the use of wetlands to remove pollution from rivers and other polluted sources while maintaining wildlife habitat. He is a recent past president of the American Ecological Engineering Society and currently president elect for the California Lake Management Society. He is the founder of a small international environmental consulting firm located in El Cerrito, CA. He recently (2005-06) was consultant to East Bay Regional Parks Service and their consulting engineers (Brown & Caldwell, Concord) for similar water quality concerns about Dumbarton Quarry, a deep pit in S. San
Francisco Bay to be flooded (but with fresh water) and to serve as a fishery-recreational site as the quarry was worked out.

While oxygen levels within the reclaimed basin could be reduced at depth once it is flooded and opened to tidal action for use as a marina, there are feasible measures available for implementation to mix the water column should such problems occur. These measures include:

1. **Use of pressurized diffusers to be placed near the bottom of the quarry prior to filling by Bay waters.** The main concern will be the lack of dissolved oxygen that will occur over time since organic matter will sink to deeper waters (> 40 feet) and decay, using up oxygen. There will be reduced mixing between the upper 30 feet of well-oxygenated water supplied with oxygen from the atmosphere and by Bay water moving in and out with the tide. This situation is common in many reservoirs and some lakes around the world although the proposed marina is unusually deep for its surface area. The common solutions are to add the missing oxygen artificially as compressed air, pure oxygen gas, or a mixture of the two. The particular mix of gas to be used and the location of the gas addition devices (usually diffusers placed on or near the bottom) and pipelines needs further study. The depth of 400 feet is not a theoretical problem for the provision of gas to the deep water. Dr. Horne has proposed a similar solution for the reclamation of another very deep quarry bowl, Dumbarton Quarry located in the South Bay.

2. **Use of recirculation pumps or mixing blades placed on the side of the quarry.** Large, slow-moving propellers are very efficient movers of water and can be used to mix down oxygen-rich surface water to deeper water. Dr. Horne has familiarity with large propellers in several reservoirs in California and elsewhere. In this case, it is not clear if propellers or recirculation pumps would be the best choice but they should be considered when detailed planning is needed.

These techniques have been shown to be effective and practicable. In the case of San Rafael Rock Quarry, one of the above two methods or some combination can be confidently assumed to work with reasonable cost to give good water quality throughout the entire 400 foot depth of the proposed marina. When a final development plan is prepared for review and approval, a detailed examination will be needed to decide on the exact method(s) to be used.

Therefore, it is apparent that feasible means are available to mitigate for any potential water quality problems that may arise in the deep water marina and that they can be installed as part of the reclamation plan. Water quality and species impacts, if any, from stratification/lack of natural flushing in the deep portion of the quarry bowl can be avoided.

Sincerely yours,

Michael Josselyn, PhD
Certified Professional Wetland Scientist
Wetlands Habitat Quality Assessment for the San Rafael Rock Quarry

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MARIN COUNTY, CALIFORNIA

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Data:
December 2007

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1.0 INTRODUCTION

On December 14, 2003, WEPA conducted a habitat assessment of the San Rafael Rock Quarry (SRRC) wetland in Marin County, California. The purpose of the report is to evaluate the wetland condition of the San Rafael Rock Quarry, to provide an overview of potential measures to improve overall wetland condition, and to outline benefits of potential projects to the wetland. This report provides a survey of potential benefits to wetland condition for each wetland surveyed. The report includes descriptive and qualitative assessment of the wetland condition for each wetland surveyed.

The wetlands at the San Rafael Rock Quarry were assessed for habitat quality using the most recent version of the California Rapid Assessment Method for wetlands (Calspeck et al., 2002). The wetlands are described in this study as the West Wetland, and the East Wetland, comprising two areas that differ in size and vegetation composition. The West Wetland is the larger of the two areas described and is located to the north and west of the wetland. The East Wetland is the smaller of the two areas described and is located to the south and east of the wetland.

The study area includes both wetland and upland areas. The wetland areas are divided into three main areas: (1) the San Rafael Rock Quarry, (2) the Mill Valley Wetland, and (3) the East Wetland. The wetland areas are characterized by wetland vegetation, including stands of vegetation, emergent and submerged aquatic plants, and riparian vegetation.

The wetland vegetation is dominated by willows, rushes, and sedges. The wetland areas are surrounded by upland areas, including roads, trails, and buildings. The upland areas are characterized by a variety of vegetation, including grasses, shrubs, and trees.

The wetland areas are generally characterized by wetland vegetation and are dominated by willows, rushes, and sedges. The wetland areas are surrounded by upland areas, including roads, trails, and buildings. The upland areas are characterized by a variety of vegetation, including grasses, shrubs, and trees.

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species, and all are impacted at their edges by trash and invasive species. A number of ornamental trees (blue gum eucalyptus (Eucalyptus globulus) and Canary Island date palm (Phoenix canariensis)) have been planted around the wetland edges along the roadsides, and pampas grass (Cortaderia selloana) has become established around the southern wetland boundaries.

1.3 CRAM for Wetlands

The California Rapid Assessment Method for wetlands or CRAM (version 5.0 released September 2007) was used in this Study as the assessment method to determine the habitat quality of the existing wetlands in the Study Area. Developed by the San Francisco Estuary Institute in cooperation with the Environmental Protection Agency, this method provides a rapid, cost-effective, scientifically robust method to evaluate the condition of wetlands and waters. An Assessment Area (AA) is the portion of a wetland or water that is assessed using CRAM. For a smaller wetland, the boundary of the wetland and the boundary of the AA may be the same. For a larger wetland, the AA may be a portion of the wetland complex.

To use CRAM, the wetland is first classified by its sub-type (e.g. lagoonine, riverine, estuarine, etc.) and is then scored for 12 metrics that relate directly to wetland functions and values. The metrics combine to give one overall score and one individual score for each of four categories: landscape context, hydrology, physical structure, and biotic structure. The CRAM score is calibrated to represent the wetland's condition and functioning relative to other wetlands of similar sub-type throughout California. The relationships between CRAM metrics and expected functions and values of wetlands are presented in Table 1.

Metric ratings are described by mutually exclusive narrative statements that represent the full range of possible states of the metric. For example, the condition of the wetland's landscape context can be described as one of the following:

- abundant native vegetation cover with intact soils and little trash;
- moderate cover of invasive plants with moderately disturbed soils and some trash;
- prevalent invasive plants with moderate soil disruption and moderate trash, or;
- highly compacted barren soils with high intensity of human use.

The Estuarine Field Book used for CRAM assessment of the wetlands at the San Rafael Rock Quarry is reproduced in Appendix B for reference. This Field Book was selected because the saline tolerant plants and the functions of the wetlands in the Study Area are best characterized under this category. However, the Study Area is a not subject to tidal action. The full description of CRAM methodology can be found in the CRAM version 5.0 User's Manual (Collins et al. 2007).

2.0 METHODS

The functional assessment of these wetlands proceeded using both qualitative and quantitative methods. The qualitative assessment involved mapping the current biological and hydrologic conditions and making general observations on the health and functioning of the wetlands. CRAM for wetlands was used to score each wetland subarea with respect to four major

<table>
<thead>
<tr>
<th>FUNCTIONS AND VALUES</th>
<th>METRIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landscape Connectivity</td>
<td>% of AA with undisturbed edge</td>
</tr>
<tr>
<td>Groundwater recharge</td>
<td>X</td>
</tr>
<tr>
<td>Flood flow alteration</td>
<td>X</td>
</tr>
<tr>
<td>Sediment retention</td>
<td>X</td>
</tr>
<tr>
<td>Production support</td>
<td>X</td>
</tr>
<tr>
<td>Uniqueness / rarity</td>
<td>X</td>
</tr>
<tr>
<td>Inland and open canopy distribution</td>
<td>X</td>
</tr>
<tr>
<td>Habitat diversity / abundance</td>
<td>X</td>
</tr>
<tr>
<td>Aquatic diversity / abundance</td>
<td>X</td>
</tr>
<tr>
<td>Recreational opportunities</td>
<td>X</td>
</tr>
</tbody>
</table>
2.3.1 Office Assessment
Aerial images were used to assign Assessment Area (AA) boundaries for each wetland, and to determine landscape context scores. Assessment Areas were selected to be representative of the wetland, and to fit within the size recommendations presented in the CRAM framework. An evaluation area defined as 250 meters from the AA edge was delineated in the GIS environment for 2-dimensional evaluation (Figure 2). Preliminary mapping of channels and vegetation community boundaries was also conducted in the office to aid in field investigations. Additionally, National Wetland Inventory maps and Soil Survey maps were used to determine where the expected hydrology would be observed and elucidate any other relevant environmental conditions. Following the field investigation, CRAM scores were calculated using the guidelines presented in the Estuarine Field Book (Appendix B).

2.3.2 Field Assessment
Wetlands were surveyed on foot during plant community mapping to determine if the channels and AAs previously delineated from aerial imagery were accurate and appropriate. Channel widths and shapes were noted on field maps, however channels were not GPSed. The Assessment Areas were delineated on the ground using pin flags at four cardinal directions from the GPSed plot center. In the East Wetlands, the 55-meter plot radius was too large to fit entirely within the wetland boundary, so irregular shapes were used to delineate the AAs. Once the AA was delineated on the ground, the entire AA was traversed in a meandering fashion and notes were taken and scores were given for every CRAM metric in the hydrology, physical structure, and biotic structure categories. Photographs were taken at each AA and throughout the wetland field assessment.

2.3.3 Stressors Checklist
Stressors were assessed based on a combination of field observations and literature review. The CRAM stressors checklist was filled out preliminarily in the field, based on readily observable conditions, then was revisited in the office with aerial images and other background sources available for review. All stressors were ranked as present or significant. A ranking of present indicates that the stressor is present in the area of study but is not likely having a significant impact on wetland function. A ranking of significant indicates that the stressor is present in the area of study and is likely having a significant impact on wetland function. The ranking of stressors can be used to prioritize restoration activities.

3.0 RESULTS
The wetlands at the San Rafael Rock Quarry are identified in the US Fish and Wildlife Service National Wetlands Inventory as palustrine, emergent, semi-permanent-tidal, diked/impounded (West Wetland and East Wetland) and palustrine, emergent, seasonally flooded, diked/impounded (East #2 Wetland) wetlands. This classification indicates that the wetlands are dominated by erect herbaceous plants, display salinity less than 0.5 parts per thousand, 1

1 “Evaluation area” is equivalent to the term “buffer area” used in the CRAM methodology and is used in this assessment to eliminate any confusion with more common uses of the term “buffer.”
and are bounded by dikes. The distinction made between the West Wetland and East #2 Wetland is that surface water is present for extended periods early in the growing season, but is absent by the end of the growing season in the East #2 Wetland.

The Soil Survey of Marin County (NRCS 1985) identifies one soil map unit throughout all three wetlands: Hydroaquent, saline. This soil classification indicates that the soils are hydric (i.e. wetland soils) and are moderately to strongly saline (Electrical Conductivity 15-32 mmhos/cm).

3.1 Qualitative Assessment

Five distinct plant communities were observed: the Pickleweed Series, the Cattail - bulrush series, upland mounds, ruderal weeds and ornamentals, and ponded depressions. Location and extent of each plant community is displayed in Figure 3. Acreage for each plant community type is presented in Table 2. Plant lists for each plant community type are presented in Appendix A.

Table 2. Plant communities observed at the San Rafael Rock Quarry wetlands

<table>
<thead>
<tr>
<th>Plant Community</th>
<th>Dominant species</th>
<th>Acreage and distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pickleweed marsh</td>
<td>Salicornia virginica - pickleweed</td>
<td>33.1 acres, found in deeper portions of the West Wetland, and higher elevations in the East Wetlands.</td>
</tr>
<tr>
<td></td>
<td>Distichlis spicata - salt grass</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Atriplex patula - fat hen</td>
<td></td>
</tr>
<tr>
<td>Cattail - Bulrush marsh</td>
<td>Typha latifolia - broadleafed cattail</td>
<td>9.0 acres, found around channels and storm water culverts at wetland edges.</td>
</tr>
<tr>
<td></td>
<td>Scirpus robustus - big bulrush</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Xeranthemum strumarum - rough cocklebur</td>
<td></td>
</tr>
<tr>
<td>Ruderal weeds and ornamentals</td>
<td>Rubus discolor - Himalayan blackberry</td>
<td>5.2 acres, found around margins of wetlands and along roadsides.</td>
</tr>
<tr>
<td></td>
<td>Phoenix canariensis - Canary island date palm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cortaderia selloana - pampas grass</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dipsacus fullonum - wild teasel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eucalyptus globulus - blue gum</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mentha pulegium - pennyroyal</td>
<td></td>
</tr>
<tr>
<td>Upland mounds</td>
<td>Distichlis spicata - salt grass</td>
<td>5.4 acres found throughout higher elevation areas in wetlands and at wetland edges.</td>
</tr>
<tr>
<td></td>
<td>Frankenia salina - alkali heath</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Polygong monspnellense - annual beard grass</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mentha pulegium - pennyroyal</td>
<td></td>
</tr>
<tr>
<td>Ponded depressions</td>
<td>Cryptis schoenoides - swamp grass</td>
<td>0.3 acres found in two of three wetlands at lower elevations.</td>
</tr>
</tbody>
</table>

3.1.1 Plant Communities

Qualitative assessment of the three wetlands revealed that the plant communities are generally dominated by native species including pickleweed (Salicornia virginica), salt grass (Distichlis spicata), fat hen (Atriplex patula), broadleafed cattail (Typha latifolia), and big bulrush (Scirpus robustus), with invasive weeds covering relatively small areas around the wetland edges. Areas dominated by invasive weeds accounted for 8% of the total Study Area in the West Wetland, and 21% in the East Wetlands collectively.

Several of the invasive species found around the wetland edges have been identified by the California Invasive Plant Council (Cal IPC) as highly or moderately invasive, and are targets for eradication in the San Francisco Bay region. Invasive weed species observed to be problematic in the Study Area during this assessment included fennel (Foeniculum vulgare), pampas grass (Cortaderia selloana), French broom (Genista monspellantina), pennyroyal (Mentha pulegium), Italian thistle (Carduus pycnocephalus), black mustard (Brassica nigra), wild teasel (Dipsacus fullonum), Himalayan blackberry (Rubus discolor), stinkwort (Dichrochmus graveolens), and blue gum (Eucalyptus globulus).

Populations of less salt-tolerant plants in the cattails-bulrush series such as broadleafed cattail and big bulrush were found intermixed amongst pickleweed-dominated saline wetlands, indicating that a combination of saltwater and freshwater influences may be affecting the plant communities of the wetlands. The West Wetland contained 12% cover of the freshwater marsh community while the percentage increased to 41% in the East Wetlands collectively.

3.1.2 Surface Hydrology

The observed prevalence of storm water drains that empty into the wetlands along their northern and southern boundaries is a potential stressor to these wetlands. Eight (8) storm drain pipes empty directly into the wetlands from the residential developments to the north, and one drain pipe was observed draining the roads and buildings to the south of the wetlands into East #2 Wetland. Based on the flow patterns observed, it is likely that additional drains feed the southern edge of the West Wetland; however, they are obscured by dense tall pampas grass and cattails, making identification difficult.

The only discernible outlet for storm water flows, and the only surface connection the wetlands have with San Rafael Bay is a slide gate on an outlet pipe at the southwestern edge of the West Wetland. In the 1982 Amended Reclamation Plan for McNear’s Quarry (Norman T Gilroy and Associates 1982), the marsh area is described as being “essentially diked off from the San Francisco Bay for over 75 years.” A pump was observed at this location and may be used to remove stormwater and discharge it to the Bay. This prevalence of freshwater sources, coupled with the lack of connectivity with saltwater sources for the past 100 years, may be directly responsible for the occurrence of freshwater marsh species in this typically saline habitat.

3.2 CRAM Assessment

All three wetlands were determined to be non-tidal seasonal estuarine wetlands based on the species present and best professional judgement. Seasonal estuaries are described in the CRAM classification as “those reaches of coastal rivers and streams that are ecologically influenced by seasonal closures of their tidal inlets.” Although there is no evidence that a historic stream or river existed in this area, the main water source for the wetlands is freshwater storm runoff from adjacent developments which may act as a stream or river. The influence of tidal hydrology in the wetlands in the Study Area is greatly limited and may only occur as groundwater seepage during periods of high tide through the earthen dike that separates the...
West Wetland from the San Francisco Bay. Because of the disturbed nature of the diked wetlands, the CRAM categorization presented in Figure 3.2 in Appendix B does not adequately describe the wetlands in the Study Area and best professional judgement was used to categorize the wetlands for CRAM assessment.

3.2.1 CRAM Scores

Overall CRAM scores for the three assessment subareas ranged from 42.8% to 73.7%, indicating that the functions and values associated with this type of wetland are slightly to significantly impaired in each of these wetlands.

According to the CRAM scores, hydrology and physical structure are impaired more than biotic structure and landscape context. Hydrology was the lowest scoring category in two wetlands while the third, East #2 Wetland (represented by AA3) scored lower in physical structure than hydrology. Biotic structure was the highest scoring category in the eastern wetlands (tied with landscape context in AA3) while the West Wetland (represented by AA1) scored higher in physical structure than biotic structure.

The West Wetland (represented by AA1) scored higher in all categories of assessment than the two eastern wetlands. The West Wetland showed significantly more complex topography and higher diversity of plant species relative to the other wetlands. The East #2 Wetland (AA3) scored lower than the East Wetland (AA2) in all categories except landscape context. AA3 showed significantly greater intensity of disturbance and lack of structural and biotic complexity relative to the other wetlands. A summary of these CRAM scores is presented in Table 3. The metrics used to calculate these CRAM scores are presented in Appendix C.

Table 3. Summary of CRAM assessment scores

<table>
<thead>
<tr>
<th></th>
<th>AA1</th>
<th>AA2</th>
<th>AA3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landscape Context</td>
<td>68.3%</td>
<td>51.6%</td>
<td>55.6%</td>
</tr>
<tr>
<td>Hydrology</td>
<td>58.3%</td>
<td>41.7%</td>
<td>33.3%</td>
</tr>
<tr>
<td>Physical Structure</td>
<td>87.5%</td>
<td>62.5%</td>
<td>25.0%</td>
</tr>
<tr>
<td>Biotic Structure</td>
<td>83.3%</td>
<td>75.0%</td>
<td>55.6%</td>
</tr>
<tr>
<td>Overall Score</td>
<td>73.7%</td>
<td>57.8%</td>
<td>42.8%</td>
</tr>
</tbody>
</table>
3.2.2 CRAM Stressors Checklist

Six stressors from the CRAM stressors checklist were noted in all three wetlands for physical structure, and biotic structure. Five stressors were noted in the landscape context category. In the hydrology category, seven stressors were noted. Flow diversions, dikes/levees, and non-point source discharges were the most prevalent hydrologic stressors that have a significant effect on wetland function. The list of stressors noted for each assessment area, and the ranking (present but likely not impacting wetland function or likely significantly affecting wetland function) of each are presented in Appendix C.

In the bentic structure category, vector control activities, which are necessary for health and safety, and lack of invasive species management were the most prevalent stressors. For the physical structure category, the stressors observed were primarily related to the dumping and decomposition of trash, concrete debris, and hay bales into the wetland edges and to the significant effect that vector control activities have on plant structure (the tracks from vector control vehicles passing through the dense cattails causing them to fall flat against the ground).

In the landscape context category, the residential and industrial land uses adjacent to the wetlands and the roads ringing the wetlands were identified as the primary causes of stress to wetland function. Residential land uses adjacent to the wetlands are likely to stress wetland function due to the presence of invasive and ornamental plantings which may act as a seed source for non-native plant invasions in the wetlands, excess freshwater inputs to the wetlands which are shown to be influencing the plant communities present, and lack of habitat value for wetland fauna provided in yards and roads. Industrial land uses adjacent to the wetlands are likely to stress wetland function due to debris accumulation around the wetland edges and lack of upland habitat for wetland fauna provided in the disturbed areas. Stress to wetland function associated with Point San Pedro Road includes trash and debris accumulation in the wetland edges as it is discarded from passing traffic and the lack of habitat connectivity provided for wetland fauna across the road. Noise levels associated with quarry activities are not considered a stressor to wetland function as they have been present historically such that wetland fauna is presumably adapted to the existing noise levels.

4.0 DISCUSSION AND CONCLUSIONS

4.1 Target Functional Capacity

Seasonal wetlands typically are highly productive, provide valuable habitat for wildlife, provide flood attenuation and storm surge protections for inland dwellers, and provide water quality benefits to San Francisco Bay. When considering restoration opportunities, it is important to develop target functions and values to guide the planning process and to develop appropriate performance standards for future wetland assessments. The target functions and values for the enhancement and management of the San Rafael Rock Quarry wetlands can be developed through consultation with stakeholders, but will likely include storm water treatment, wildlife habitat improvements, and passive recreation (bird watching, photography, etc.) at the time of reclamation.

4.2 Opportunities for Enhancement of Habitat Quality

The results of the qualitative and quantitative assessments presented here indicate that the functions and values of the wetlands at the San Rafael Rock Quarry are most heavily stressed by altered hydrology, physical disturbance, and invasion by weeds and freshwater marsh species. For this reason, the primary opportunities for improvement in habitat quality are related to invasive species removal, enhancement of the hydrologic regime, and reduction in anthropogenic disturbance.

4.2.1 Vegetation Management

The wetlands at the San Rafael Rock Quarry were found to be generally dominated by native wetland species with invasions of weed species becoming a problem around the wetland edges. An invasive weed management program for the wetlands should be incorporated into the quarry’s established weed management program to reduce the prevalence and spread of pampas grass, fennel, French broom, pennyroyal, Italian thistle, black mustard, wild leek, wild radish, Himalayan blackberry, and blue gum around the wetland edges. Additionally, a vegetation replacement plan should be developed to remove planted exotic tree species and replace them with more appropriate native trees and shrubs.

4.2.2 Hydrologic Enhancement

Enhancement of the hydrology in some portions of the wetlands could greatly enhance their wildlife habitat values and reduce the need for destructive vector control activities. By creating larger areas of open water habitat in the East Wetlands and enhancing water flow through constructed channels, habitat for mosquito fish can be created, reducing or eliminating the need for more destructive vector control activities.

Currently just one culvert connects the wetlands to San Rafael Bay which has a slide flap gate to control flows. A pump is also present at this location. An opportunity exists to install an outlet structure to reduce freshwater ponding within the seasonal wetland. While it may also be possible to introduce salt water through this gate, the potential for flooding of Point San Pedro Road, the access roads and the brickyard area would need to be evaluated, especially during high tides and storm events.

Modification of stormwater inflows through either consolidation into fewer outflows or collection within a stormwater retention basin may enhance the salt marsh community present in the West Wetland by limiting the influence of freshwater inflows. Further study is recommended to determine to potential for hydrologic enhancement in all or some of the wetlands at the San Rafael Rock Quarry.

4.2.3 Improvement of Circulation and Diversity in the East #2 Wetland (AA3)

The low CRAM scores in the East #2 Wetland (AA3) indicated that hydrology and physical structure are most impaired for this wetland. Through the mapping process, only one source of water input to this wetland, and no connection between the West Wetland and the East #2 Wetland was observed. Water circulation through this wetland may be enhanced by creating a...
culvert connection between the West Wetland and the East #2 Wetland, which may enhance the heterogeneity of the physical structure of the East #2 Wetland as well as the hydrology. A connection between the West Wetland and East #2 Wetland may also increase diversity in plant species composition, and wildlife habitat by increasing the salt water influence in the western portion of the wetland. Creating a hydrologic connection between the West Wetland and the East #2 Wetland could be investigated further.

4.2.4 Reduction of Anthropogenic Disturbance

Significant vegetation disturbance was observed to be associated with vector control activities in the wetlands. In part, these activities are necessitated by poor circulation within these areas and the creation of more open water as discussed above could also improve natural vector control by allowing mosquito fish to survive in these wetlands. Additionally, water quality within these wetlands could be improved through the installation of landscape water treatment features such as bioswales. Additional cleanups along Point San Pedro Road to remove trash and debris could also be instituted. Enhancements for passive recreation including informational displays, a boardwalk, or signage may help to eliminate the disturbance associated with the adjacent roads by making the passing public aware of the value of the habitat thereby reducing the incidence of trash and debris dumping.
### Appendix A: Plant Communities Lists

<table>
<thead>
<tr>
<th>Plant Community</th>
<th>Notes on Habitat</th>
<th>Call IPC Rating</th>
<th>Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pickleweed Series</strong></td>
<td>Notes on habitat</td>
<td>Call IPC rating</td>
<td>Origin</td>
</tr>
<tr>
<td><em>Atriplex patula</em></td>
<td>fat hen</td>
<td>saline soil</td>
<td>native</td>
</tr>
<tr>
<td><em>Eriogonum fasciculatum</em></td>
<td>salt marsh</td>
<td>native</td>
<td></td>
</tr>
<tr>
<td><em>Distichlis spicata</em></td>
<td>salt marsh</td>
<td>native</td>
<td></td>
</tr>
<tr>
<td><em>Fremontia salina</em></td>
<td>alkali heath</td>
<td>native</td>
<td></td>
</tr>
<tr>
<td><em>Gnaphalium strictum</em></td>
<td>salt marsh</td>
<td>native</td>
<td></td>
</tr>
<tr>
<td><em>Mentha pulegium</em></td>
<td>pennyroyal</td>
<td>weed species</td>
<td>Moderate</td>
</tr>
<tr>
<td><em>Polygonum monspeliense</em></td>
<td>annual beard grass</td>
<td>weed species</td>
<td>Limited</td>
</tr>
<tr>
<td><em>Salicornia depressa</em></td>
<td>pickweed</td>
<td>salt marsh</td>
<td>native</td>
</tr>
<tr>
<td><em>Scripus robustus</em></td>
<td>big bulrush</td>
<td>fresh or salt marsh</td>
<td>native</td>
</tr>
<tr>
<td><em>Cattail-Bulrush Series</em></td>
<td>Notes on habitat</td>
<td>Call IPC Rating</td>
<td>Origin</td>
</tr>
<tr>
<td><em>Atriplex patula</em></td>
<td>fat hen</td>
<td>saline soil</td>
<td>native</td>
</tr>
<tr>
<td><em>Cordgrass panicoides</em></td>
<td>Italian thistle</td>
<td>weed species</td>
<td>Moderate</td>
</tr>
<tr>
<td><em>Distichlis spicata</em></td>
<td>salt marsh</td>
<td>native</td>
<td></td>
</tr>
<tr>
<td><em>Gnaphalium strictum</em></td>
<td>coastal grass</td>
<td>salt marsh</td>
<td>native</td>
</tr>
<tr>
<td><em>Mentha pulegium</em></td>
<td>pennyroyal</td>
<td>weed species</td>
<td>Moderate</td>
</tr>
<tr>
<td><em>Scripus robustus</em></td>
<td>big bulrush</td>
<td>fresh or salt marsh</td>
<td>native</td>
</tr>
<tr>
<td><em>Typha latifolia</em></td>
<td>broadleaf cattail</td>
<td>freshwater marsh</td>
<td>native</td>
</tr>
<tr>
<td><em>Kontium strumarum</em></td>
<td>rough cocklebur</td>
<td>weed species</td>
<td>native</td>
</tr>
<tr>
<td><strong>Ruderal weeds and ornamentals</strong></td>
<td>Notes on habitat</td>
<td>Call IPC Rating</td>
<td>Origin</td>
</tr>
<tr>
<td><em>Amsinckia inflata</em></td>
<td>coyote brush</td>
<td>coastal strand</td>
<td>native</td>
</tr>
<tr>
<td><em>Bromus arvensis</em></td>
<td>black mustard</td>
<td>disturbed areas</td>
<td>Moderate</td>
</tr>
<tr>
<td><em>Carduus pycnocephalus</em></td>
<td>Italian thistle</td>
<td>weed species</td>
<td>Moderate</td>
</tr>
<tr>
<td><em>Cordylina scabra</em></td>
<td>pampas grass</td>
<td>coastal strand</td>
<td>High</td>
</tr>
<tr>
<td><em>Distichlis spicata</em></td>
<td>salt marsh</td>
<td>native</td>
<td></td>
</tr>
<tr>
<td><em>Distichlis spicata</em></td>
<td>salt marsh</td>
<td>native</td>
<td></td>
</tr>
<tr>
<td><em>Elymus glaucus</em></td>
<td>blue pum</td>
<td>planted</td>
<td>Moderate</td>
</tr>
<tr>
<td><em>Eremogone californica</em></td>
<td>California bulrush</td>
<td>freshwater marsh</td>
<td>native</td>
</tr>
<tr>
<td><em>Hypericum calycinum</em></td>
<td>stinkwort</td>
<td>weed species</td>
<td>Moderate</td>
</tr>
<tr>
<td><em>Euphorbia graminea</em></td>
<td>blue gum</td>
<td>planted</td>
<td>Moderate</td>
</tr>
<tr>
<td><em>Foeniculum vulgare</em></td>
<td>fennel</td>
<td>weed species</td>
<td>High</td>
</tr>
<tr>
<td><em>Genista monspessulana</em></td>
<td>french broom</td>
<td>introduced</td>
<td>High</td>
</tr>
<tr>
<td><em>Mentha pulegium</em></td>
<td>pennyroyal</td>
<td>weed species</td>
<td>Moderate</td>
</tr>
<tr>
<td><em>Phoenix canariensis</em></td>
<td>Canary island date palm</td>
<td>planted</td>
<td>Limited</td>
</tr>
<tr>
<td><em>Pinus edulis</em></td>
<td>bristle conifer</td>
<td>weed species</td>
<td>Limited</td>
</tr>
<tr>
<td><em>Rhamnus californicus</em></td>
<td>willow</td>
<td>disturbed areas</td>
<td>Limited</td>
</tr>
<tr>
<td><em>Rubus discolor</em></td>
<td>Himalayan blackberry</td>
<td>escaped cultivar</td>
<td>High</td>
</tr>
<tr>
<td><em>Kontium strumarum</em></td>
<td>rough cocklebur</td>
<td>weed species</td>
<td>native</td>
</tr>
<tr>
<td><strong>Upland mounds</strong></td>
<td>Notes on habitat</td>
<td>Call IPC Rating</td>
<td>Origin</td>
</tr>
<tr>
<td><em>Avena barbata</em></td>
<td>slender oats</td>
<td>weed species</td>
<td>Moderate</td>
</tr>
<tr>
<td><em>Cordgrass panicoides</em></td>
<td>Italian thistle</td>
<td>weed species</td>
<td>Moderate</td>
</tr>
<tr>
<td><em>Distichlis spicata</em></td>
<td>wild teasel</td>
<td>introduced</td>
<td>Moderate</td>
</tr>
<tr>
<td><em>Elymus glaucus</em></td>
<td>blue pum</td>
<td>planted</td>
<td>Moderate</td>
</tr>
<tr>
<td><em>Fremontia salina</em></td>
<td>alkali heath</td>
<td>native</td>
<td></td>
</tr>
<tr>
<td><em>Mentha pulegium</em></td>
<td>pennyroyal</td>
<td>weed species</td>
<td>Moderate</td>
</tr>
<tr>
<td><em>Polygonum monspeliense</em></td>
<td>annual beard grass</td>
<td>weed species</td>
<td>Limited</td>
</tr>
<tr>
<td><em>Quercus agrifolia</em></td>
<td>coast live oak</td>
<td>woodlands</td>
<td>native</td>
</tr>
<tr>
<td><em>Rubus discolor</em></td>
<td>Himalayan blackberry</td>
<td>escaped cultivar</td>
<td>High</td>
</tr>
<tr>
<td><em>Salix lasiolepis</em></td>
<td>arroyo willow</td>
<td>riparian</td>
<td>native</td>
</tr>
<tr>
<td><strong>Ponded depression</strong></td>
<td>Notes on habitat</td>
<td>Call IPC Rating</td>
<td>Origin</td>
</tr>
<tr>
<td><em>Cyperus esculentus</em></td>
<td>swamp grass</td>
<td>weed species</td>
<td>not native</td>
</tr>
<tr>
<td><em>Scripus robustus</em></td>
<td>big bulrush</td>
<td>fresh or salt marsh</td>
<td>native</td>
</tr>
<tr>
<td><em>Typha latifolia</em></td>
<td>broadleaf cattail</td>
<td>freshwater marsh</td>
<td>native</td>
</tr>
</tbody>
</table>
### Basic Information Sheet: Estuarine Wetlands

| Your Name: |  
| CRAM Site ID: |  
| Assessment Area Name: |  
| Assessment No. |  
| Date (m/d/y) |  
| Assessment Team Members for This AA |  
|  
|  
|  
|  

#### Wetland Sub-type:
- ☐ Perennial Saline
- ☐ Perennial Non-saline
- ☐ Seasonal Estuarine

#### AA Category:
- ☐ Restoration
- ☐ Mitigation
- ☐ Impacted
- ☐ Other

What best describes the tidal stage over the course of the time spent in the field?
- ☐ high tide
- ☐ low tide

#### Photo Identification Numbers and Description:

<table>
<thead>
<tr>
<th>Photo ID No.</th>
<th>Description</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Datum</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>North</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>South</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3</td>
<td>East</td>
<td></td>
<td></td>
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<tr>
<td>4</td>
<td>West</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Comments:

---

### Scoring Sheet: Estuarine Wetlands

#### Attributes and Metrics

<table>
<thead>
<tr>
<th>Buffer and Landscape Context</th>
<th>Scores</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffer submetric A:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buffer submetric B:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buffer submetric C:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Hydrology

<table>
<thead>
<tr>
<th>Water Source</th>
<th>Score</th>
<th>Final</th>
<th>Final Attribute Score = (Raw Score/24)100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrotrophic Conditions:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Physical Structure

<table>
<thead>
<tr>
<th>Structural Patch Richness</th>
<th>Score</th>
<th>Final</th>
<th>Final Attribute Score = (Raw Score/24)100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topographic Complexity:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Biotic Structure

| Plant Community submetric A: | | |
| Number of Plant Layers: | | |
| Plant Community submetric B: | | |
| Number of Co-dominant species: | | |
| Plant Community submetric C: | | |
| Percent Invasion: | | |

### General Scoring

100 x (sum of Raw Attribute scores/120) = Overall AA Score
3.2.2.5.1 Perennial Saline Estuarine Wetland Sub-type

For the purposes of CRAM, saline estuarine wetlands are distinguished from non-saline estuarine wetlands by the obvious dominance of salt-tolerant species of emergent vascular vegetation, such as cordgrass (Spartina spp.), pickleweed (Salicornia spp.), and salt grass (Distichlis spp.) along the foreshore of the wetland and along the immediate banks of the larger tidal channels that tend to dewater at low tide.

3.2.2.5.2 Perennial Non-saline Estuarine Wetland Sub-type

In non-saline wetlands (i.e., brackish or freshwater estuarine wetlands), the plant community along the foreshore of the wetland and along the immediate banks of the larger tidal channels that tend to dewater at low tide is dominated by species that don’t tolerate high salinities, such as cattails (Typha spp.), rushes (Juncus species), and willows (Salix spp.).

3.2.2.5.3 Seasonal Estuarine Wetland Sub-type

Seasonal estuaries are the reaches of coastal rivers and streams that are ecologically influenced by seasonal closures of their tidal inlets. The frequency and duration of inlet closure can be natural or managed. The tidal regime can be muted or not (i.e., the tidal range can be the same or less than that of the adjacent marine or estuarine system when the tidal inlet is open). The salinity regime of a seasonal estuary can be highly variable. It can be fresh throughout very wet years or hypersaline during extended droughts. Some seasonal estuaries are locally referred to as lagoons.
Establish the Assessment Area (AA)

Table 3.5: Examples of features that should be used to delineate AA boundaries.

<table>
<thead>
<tr>
<th>Flow-Through Wetlands</th>
<th>Non Flow-Through Wetlands</th>
<th>Vernal Pools and Vernal Pool Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riverine, Estuarine and Slope Wetlands</td>
<td>Lacustrine, Wet Meadows, Depressional, and Playa Wetlands</td>
<td>above-grade roads and fills</td>
</tr>
<tr>
<td>□ diversion ditches</td>
<td>□ above-grade roads and fills</td>
<td>□ above-grade roads and fills</td>
</tr>
<tr>
<td>□ end-of-pipe large discharges</td>
<td>□ berms and levees</td>
<td>□ major point sources of water inflows or outflows</td>
</tr>
<tr>
<td>□ grade control or water height control structures</td>
<td>□ jetties and wave deflectors</td>
<td>□ open water areas more than 50 m wide on average or broader than the wetland</td>
</tr>
<tr>
<td>□ major changes in riverine entrenchment, confinement, degradation, aggradation, slope, or bed form</td>
<td>□ major point sources of water inflows or outflows</td>
<td>□ weirs, berms, levees and other flow control structures</td>
</tr>
<tr>
<td>□ major channel confluences</td>
<td>□ open water areas more than 50 m wide on average or broader than the wetland</td>
<td>□ weirs, berms, levees and other flow control structures</td>
</tr>
<tr>
<td>□ waterfalls</td>
<td>□ transitions between wetland types</td>
<td>□ weirs, berms, levees and other flow control structures</td>
</tr>
<tr>
<td>□ open water areas more than 50 m wide on average or broader than the wetland</td>
<td>□ foreshores, backshores and uplands at least 5 m wide</td>
<td>□ weirs, berms, levees and other flow control structures</td>
</tr>
<tr>
<td>□ transitions between wetland types</td>
<td>□ foreshores, backshores and uplands at least 5 m wide</td>
<td>□ weirs, berms, levees and other flow control structures</td>
</tr>
<tr>
<td>□ weirs, culverts, dams, levees, and other flow control structures</td>
<td>□ weirs, berms, levees and other flow control structures</td>
<td>□ weirs, berms, levees and other flow control structures</td>
</tr>
</tbody>
</table>

Table 3.6: Examples of features that should not be used to delineate any AAs.

- □ at-grade, unpaved, single-lane, infrequently used roadways or crossings
- □ bike paths and jogging trails at grade
- □ bare ground within what would otherwise be the AA boundary
- □ equestrian trails
- □ fences (unless designed to obstruct the movement of wildlife)
- □ property boundaries
- □ riffle (or rapid) - glide - pool transitions in a riverine wetland
- □ spatial changes in land cover or land use along the wetland border
- □ state and federal jurisdictional boundaries

Table 3.7: Recommended maximum and minimum AA sizes for each wetland type.

<table>
<thead>
<tr>
<th>Wetland Type</th>
<th>Recommended AA Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slope</td>
<td></td>
</tr>
<tr>
<td>Spring or Seep</td>
<td>Maximum size is 0.50 ha (about 75 m x 75 m, but shape can vary); there is no minimum size.</td>
</tr>
<tr>
<td>Wet Meadow</td>
<td>Maximum size is 2.25 ha (about 150 m x 150 m, but shape can vary); minimum size is 0.1 ha (about 30 m x 30 m).</td>
</tr>
<tr>
<td>Depression</td>
<td></td>
</tr>
<tr>
<td>Vernal Pool</td>
<td>There are no size limits (see Section 3.5.6 and Table 3.8).</td>
</tr>
<tr>
<td>Vernal Pool System</td>
<td>There are no size limits (see Section 3.5.6 and Table 3.8).</td>
</tr>
<tr>
<td>Other Depression</td>
<td>Maximum size is 1.0 ha (about 100 m x 100 m, but shape can vary); there is no minimum size.</td>
</tr>
<tr>
<td>Riverine</td>
<td></td>
</tr>
<tr>
<td>Confined and Non-confined</td>
<td>Recommended length is 10× average bankfull channel width; maximum length is 200 m; minimum length is 100 m. AA should extend laterally (landward) from the bankfull contour to encompass all the vegetation (trees, shrubs, vines, etc.) that probably provide woody debris, leaves, insects, etc. to the channel and its floodplain (Figure 3.4); minimum width is 2 m.</td>
</tr>
<tr>
<td>Lacustrine</td>
<td>Maximum size is 2.25 ha (about 150 m x 150 m, but shape can vary); minimum size is 0.5 ha (about 75 m x 75 m).</td>
</tr>
<tr>
<td>Playa</td>
<td>Maximum size is 2.25 ha (about 150 m x 150 m, but shape can vary); minimum size is 0.5 ha (about 75 m x 75 m).</td>
</tr>
<tr>
<td>Estuarine</td>
<td></td>
</tr>
<tr>
<td>Perennial Saline</td>
<td>Recommended size and shape for estuarine wetlands is a 1 ha circle (radius about 55 m), but the shape can be non-circular if necessary to fit the wetland and to meet hydrogeomorphic and other criteria as outlined in Sections 3.5.1-3. The minimum size is 0.1 ha (about 30 m x 30 m).</td>
</tr>
<tr>
<td>Perennial Non-saline</td>
<td></td>
</tr>
<tr>
<td>Seasonal</td>
<td></td>
</tr>
</tbody>
</table>
Attribute 1: Buffer and Landscape Context

Special Considerations for Estuarine Wetlands

The boundary of an estuarine wetland AA should be determined during low tide. The AA should not extend above the backshore, as indicated by wrack lines, transitions from intertidal to upland vegetation, etc., and it should not extend more than 10 m across a non-vegetated tidal flat that adjoins the foreshore. The AA should not extend across any tidal channel that is wider than 30 m or that cannot be safely crossed at low tide. The boundary of the AA can extend along the midline of such channels but not across them. The AA can incorporate any smaller channels that can be safely crossed on the ground. The AA will therefore include all of the intertidal marsh flat and associated features, such as patented and natural levees, plus all of the tidal channels that can be crossed, plus the exposed banks and beds of channels that border the AA. But, the AA should not extend further than 10 m onto any tidal flat that adjoins the foreshore (Figure 3.5).

Landscape Connectivity

Definition: The landscape connectivity of an Assessment Area is assessed in terms of its spatial association with other areas of aquatic resources, such as other wetlands, lakes, streams, etc. It is assumed that wetlands close to each other have a greater potential to interact ecologically and hydrologically, and that such interactions are generally beneficial.

For all wetlands except riverine: On digital or hardcopy site imagery, draw a straight line extending 500 m from the AA boundary in each of the four cardinal compass directions. Along each transect line, estimate the percentage of the segment that passes through wetland or aquatic habitat of any kind, including open water. Use the worksheet below to record these estimates.

Worksheet for Landscape Connectivity Metric for All Wetlands Except Riverine

<table>
<thead>
<tr>
<th>Segment Direction</th>
<th>Percentage of Transect Length That is Wetland</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td></td>
</tr>
<tr>
<td>South</td>
<td></td>
</tr>
<tr>
<td>East</td>
<td></td>
</tr>
<tr>
<td>West</td>
<td></td>
</tr>
<tr>
<td>Average Percentage of Transect Length That is Wetland</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.1: Rating for Landscape Connectivity for all wetlands except Riverine.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Alternative States</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>An average of 76 – 100 % of the transects is wetland habitat of any kind.</td>
</tr>
<tr>
<td>B</td>
<td>An average of 51 – 75 % of the transects is wetland habitat of any kind.</td>
</tr>
<tr>
<td>C</td>
<td>An average of 26 – 50 % of the transects is wetland habitat of any kind.</td>
</tr>
<tr>
<td>D</td>
<td>An average of 0 – 25 % of the transects is wetland habitat of any kind.</td>
</tr>
</tbody>
</table>
Percent of AA with Buffer

Definition: The buffer is the area adjoining the AA that is in a natural or semi-natural state and currently not dedicated to anthropogenic uses that would severely detract from its ability to entrap contaminants, discourage forays into the AA by people and non-native predators, or otherwise protect the AA from stress and disturbance.

To be considered as buffer, a suitable land cover type must be at least 5 m wide and extend along the perimeter of the AA for at least 5 m. The minimum width of the buffer is 250 m. At distances beyond 250 m from the AA, the buffer becomes part of the landscape context of the AA.

Any area of open water that is adjacent to the AA and has an average width of at least 30 m, such as a lake, large river, or large slough that borders fringing wetlands, is not considered in the assessment of the buffer. Such open water is considered to be neutral, neither part of the wetland nor part of the buffer. These are three reasons for excluding open water from wetland Assessment Areas and their buffers. First, assessments of buffer extent and buffer width are inflated by including open water as a part of the buffer. Second, while there may be positive correlations between wetland stressors and the quality of open water, quantifying water quality generally requires laboratory analyses beyond the scope of rapid assessment. Third, open water can be a direct source of stress (i.e., water pollution, waves, boat wakes) or an indirect source of stress (i.e., promotes visitation by livestock and people, provides access for non-native plant species), or it can be a source of benefits to a wetland (e.g., nutrients, propogates of native plant species, water that is essential to maintain wetland hydrolperiods, etc.

In the example below (Figure 4.2), most of the area within 250 m of the AA consists of non-buffer land cover types. Most of the perimeter of the AA adjoins a major roadway, parking lot, or other development. There is a nearby wetland but it is separately from the AA by a major roadway. The part of the AA perimeter that adjoins the open water is not considered in the estimation of the percentage of the AA perimeter that has buffer.

![Diagram of buffer and non-buffer land cover types](image_url)
Average Buffer Width

Definition: The average width of the buffer adjoining the AA is estimated by averaging the lengths of eight straight lines drawn at regular intervals around the AA from its perimeter outward to the nearest non-buffer land cover or 250 m, which ever is first encountered. It is assumed that the functions of the buffer do not increase significantly beyond an average width of about 250 m. The maximum buffer width is therefore 250 m. The minimum buffer width is 5 m, and the minimum length of buffer along the perimeter of the AA is also 5 m. Any area that is less than 5 m wide and 5 m long is too small to be a buffer. See Table 4.4 above for more guidance regarding the identification of AA buffers.

Table 4.6: Steps to estimate Buffer Width for all wetlands except Riverine.

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Sketch a zone 250 m wide around the AA.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2</td>
<td>Identify areas in which open water is directly adjacent to the AA, with no vegetated intertidal or upland area in between. These areas are excluded from buffer calculations.</td>
</tr>
<tr>
<td>Step 3</td>
<td>Draw straight lines 250 m in length perpendicular to the AA through the buffer area at regular intervals along the portion of the perimeter of the AA that has a buffer. For one-sided riverine AAs, draw four lines; for all other wetland types, draw eight lines (see Figures 4.3 and 4.4 below).</td>
</tr>
<tr>
<td>Step 4</td>
<td>Estimate the buffer width of each of the lines as they extend away from the AA. For this metric, open water should be considered part of the buffer. Record these lengths on the worksheet below.</td>
</tr>
<tr>
<td>Step 5</td>
<td>Estimate the average buffer width. Record this width on the worksheet below.</td>
</tr>
</tbody>
</table>

Worksheet for calculating average buffer width of AA

<table>
<thead>
<tr>
<th>Line</th>
<th>Buffer Width (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td></td>
</tr>
</tbody>
</table>

Average Buffer Width

Table 4.7: Rating for average buffer width.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Alternative States</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Average buffer width is 190 – 250 m.</td>
</tr>
<tr>
<td>B</td>
<td>Average buffer width 130 – 189 m.</td>
</tr>
<tr>
<td>C</td>
<td>Average buffer width is 65 – 129 m.</td>
</tr>
<tr>
<td>D</td>
<td>Average buffer width is 0 – 64 m.</td>
</tr>
</tbody>
</table>
Buffer Condition

Definition: The condition of a buffer is assessed according to the extent and quality of its vegetation cover and the overall condition of its substrate. Evidence of direct impacts by people are excluded from this metric and included in the Stressor Checklist. Buffer conditions are assessed only for the portion of the wetland border that has already been identified or defined as buffer, based on Section 4.1.2 above. If there is no buffer, assign a score of D.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Alternative States</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Buffer for AA is dominated by native vegetation, has undisturbed soils, and is apparently subject to little or no human visitation.</td>
</tr>
<tr>
<td>B</td>
<td>Buffer for AA is characterized by an intermediate mix of native and non-native vegetation, but mostly undisturbed soils and is apparently subject to little or no human visitation.</td>
</tr>
<tr>
<td>C</td>
<td>Buffer for AA is characterized by substantial amounts of non-native vegetation AND there is at least a moderate degree of soil disturbance/compaction, and/or there is evidence of at least moderate intensity of human visitation.</td>
</tr>
<tr>
<td>D</td>
<td>Buffer for AA is characterized by barren ground and/or highly compacted or otherwise disturbed soils, and/or there is evidence of very intense human visitation.</td>
</tr>
</tbody>
</table>

Attribute 2: Hydrology

Water Source

Definition: Water Sources directly affect the extent, duration, and frequency of saturated or ponded conditions within an Assessment Area. Water Sources include the kinds of direct inputs of water into the AA as well as any diversions of water from the AA. Diversions are considered a water source because they affect the ability of the AA to function as a source of water for other habitats while also directly affecting the hydrology of the AA.

A water source is direct if it supplies water mainly to the AA, rather than to areas through which the water must flow to reach the AA. Natural, direct sources include rainfall, ground water discharge, and flooding of the AA due to high tides or naturally high riverine flows. Examples of unnatural, direct sources include stormdrains that empty directly into the AA or into an immediately adjacent area. For seeps and springs that occur at the toes of earthen dams, the reservoir behind the dams are direct water source. Indirect sources that should not be considered in this metric include large regional dams or urban storm drain systems that do not drain directly into the AA but that have systemic, ubiquitous effects on broad geographic areas of which the AA is a small part. For example, the salinity regimes of estuarine wetlands in San Francisco Bay are affected by dams in the Sierra Nevada, but these effects are not direct. But some of the same wetlands are directly affected by nearby discharges from sewage treatment facilities. Engineered hydrological controls, such as weirs, tide gates, flashboards, grade control structures, check dams, etc., can serve to demarcate the boundary of an AA (see Section 3.5), but they are not considered water sources.

The typical suite of natural water sources differs among the wetland types. The water for estuarine wetlands is by definition a combination of marine (i.e., tidal) and riverine (i.e., fluvial) sources. This metric is focused on the non-tidal water sources that account for the conditions during the growing season, regardless of the time of year when these sources exist. To assess water sources, the plant species composition of the wetland should be compared to what is expected, in terms of the position of the wetland along the salinity gradient of the estuary, as adjusted for the overall wetness of the water year. In general, altered sources are indicated by vegetation that is either more tolerant of saline conditions or less tolerant than would be expected. If the plant community is unexpectedly salt-tolerant, then an unnatural decrease in freshwater supply is indicated. Conversely, if the community is less salt-tolerant than expected, then an unnatural increase in freshwater is indicated.
### Table 4.9: Rating for Water Source.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Alternative States</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Freshwater sources that affect the dry season condition of the AA, such as its flow characteristics, hydroperiod, or salinity regime, are precipitation, groundwater, and/or natural runoff, or natural flow from an adjacent freshwater body, or the AA naturally lacks water in the dry season. There is no indication that dry season conditions are substantially controlled by artificial water sources.</td>
</tr>
<tr>
<td>B</td>
<td>Freshwater sources that affect the dry season condition of the AA are mostly natural, but also obviously include occasional or small effects of modified hydrology. Indicators of such anthropogenic inputs include developed land or irrigated agricultural land that comprises less than 20% of the immediate drainage basin within about 2 km upstream of the AA, or that is characterized by the presence of a few small stormdrains or scattered homes with septic systems. No large point sources or dams control the overall hydrology of the AA.</td>
</tr>
<tr>
<td>C</td>
<td>Freshwater sources that affect the dry season conditions of the AA are primarily urban runoff, direct irrigation, pumped water, artificially impounded water, water remaining after diversions, regulated releases of water through a dam, or other artificial hydrology. Indicators of substantial artificial hydrology include developed or irrigated agricultural land that comprises more than 20% of the immediate drainage basin within about 2 km upstream of the AA, or the presence of major point source discharges that obviously control the hydrology of the AA. OR Freshwater sources that affect the dry season conditions of the AA are substantially controlled by known diversions of water or other withdrawals directly from the AA, its encompassing wetland, or from its drainage basin.</td>
</tr>
<tr>
<td>D</td>
<td>Natural, freshwater sources that affect the dry season conditions of the AA have been eliminated based on the following indicators: impoundment of all possible wet season inflows, diversion of all dry-season inflow, predominance of xeric vegetation, etc.</td>
</tr>
</tbody>
</table>

### Hydroperiod or Channel Stability

**Definition:** Hydroperiod is the characteristic frequency and duration of inundation or saturation of a wetland during a typical year. The natural hydroperiod for estuarine wetlands is governed by the tides, and includes predictable variations in inundation regimes over days, weeks, months, and seasons. Depressional, lacustrine, playas, and riverine wetlands typically have daily variations in water height that are governed by diurnal increases in evapotranspiration and seasonal cycles that are governed by rainfall and runoff. Seeps and springs that depend on groundwater may have relatively slight seasonal variations in hydroperiod.

Channel stability only pertains to riverine wetlands. It is assessed as the degree of channel aggradation (i.e., net accumulation of sediment on the channel bed causing it to rise over time), or degradation (i.e., net loss of sediment from the bed causing it to be lower over time). There is much interest in channel entrenchment (i.e., the inability of flows in a channel to exceed the channel banks) and this is addressed in the Hydrologic Connectivity metric.

### Table 4.10: Field Indicators of Altered Hydroperiod.

<table>
<thead>
<tr>
<th>Direct Engineering Evidence</th>
<th>Indirect Ecological Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced Extent and Duration of Inundation or Saturation</td>
<td></td>
</tr>
<tr>
<td>□ Upstream spring boxes</td>
<td>□ Evidence of aquatic wildlife mortality</td>
</tr>
<tr>
<td>□ Impoundments</td>
<td>□ Encroachment of terrestrial vegetation</td>
</tr>
<tr>
<td>□ Pumps, diversions, ditching that move water <em>into</em> the wetland</td>
<td>□ Stress or mortality of hydrophytes</td>
</tr>
<tr>
<td></td>
<td>□ Compressed or reduced plant zonation</td>
</tr>
<tr>
<td>Increased Extent and Duration of Inundation or Saturation</td>
<td></td>
</tr>
<tr>
<td>□ Berms</td>
<td>□ Late-season vitality of annual vegetation</td>
</tr>
<tr>
<td>□ Dikes</td>
<td>□ Recently drowned riparian vegetation</td>
</tr>
<tr>
<td>□ Pumps, diversions, ditching that move water <em>into</em> the wetland</td>
<td>□ Extensive fine-grain deposits</td>
</tr>
</tbody>
</table>
Perennial Estuarine: The volume of water that flows into and from an estuarine wetland due to the changing stage of the tide is termed the “tidal prism.”

The tidal prism consists of inputs from both tidal (i.e., marine or estuarine) and non-tidal (e.g., fluvial or upland) sources. The timing, duration, and frequency of inundation of the wetland by these waters are collectively referred to the tidal hydroperiod.

Under natural conditions, increases in tidal prism tend to cause increases in inorganic sediments, which raise the tidal elevation of the wetland and thus reduces its hydroperiod. If the sediment supply is adequate, estuarine marshes tend to build upward in quasi-equilibrium with sea level rise.

A change in the hydroperiod of an estuarine wetland (i.e., a change in the tidal prism) can be inferred from changes in channel morphology, drainage network density, and the relative abundance of plants indicative of either high or low marsh. A preponderance of shrink-swell cracks or dried pannes on the wetland plain is indicative of decreased hydroperiod. In addition, inadequate tidal flushing may be indicated by algal blooms or by encroachment of freshwater vegetation. Dikes, levees, ponds, or ditches are indicators of an altered hydroperiod resulting from management for flood control, salt production, waterfowl hunting, mosquito control, etc. Table 4.12 provides narratives for rating Hydroperiod for perennial estuarine wetlands.

Seasonal Estuarine: The hydroperiod of a seasonal estuarine wetland can be highly variable due to interannual variations in freshwater inputs and occasional breaching of the tidal barrier.

For the purposes of CRAM, the fringing wetland of a seasonal estuary is assessed as a perennial estuarine wetland when its inlet is open, but is assessed as riverine wetland if its inlet is closed.

Hydroperiod alteration can be inferred from atypical wetting and drying patterns along the shoreline (e.g., a preponderance of shrink-swell cracks or dried pannes). Inadequate tidal flushing, or, in and systems, excessive freshwater input during the dry season may be indicated by algal blooms or by encroachment of freshwater vegetation. Dikes, levees, ponds, ditches, and tide-control structures are indicators of an altered hydroperiod resulting from management for flood control, salt production, waterfowl hunting, mosquito control, boating, etc. Table 4.13 provides narratives for rating Hydroperiod for seasonal estuarine wetlands.

Table 4.12: Rating of Hydroperiod for Perennial Estuarine wetlands.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Alternative States</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>AA is subject to the full tidal prism, with two daily tidal minima and maxima.</td>
</tr>
<tr>
<td>B</td>
<td>AA is subject to reduced, or muted, tidal prism, although two daily minima and maxima are observed.</td>
</tr>
<tr>
<td>C</td>
<td>AA is subject to muted tidal prism, with tidal fluctuations evident only in relation to extreme daily highs or spring tides.</td>
</tr>
<tr>
<td>D</td>
<td>AA is subject to muted tidal prism, plus there is inadequate drainage, such that the marsh plain tends to remain flooded during low tide.</td>
</tr>
</tbody>
</table>

Table 4.13: Rating of Hydroperiod for Seasonal Estuarine wetlands.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Alternative States</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>AA is subject to natural interannual tidal fluctuations (range may be severely muted or vary seasonally), and episodically has tidal inputs by natural breaching due to either fluvial flooding or storm surge.</td>
</tr>
<tr>
<td>B</td>
<td>AA is subject to tidal inputs more often than would be expected under natural circumstances, because of artificial breaching of the tidal inlet.</td>
</tr>
<tr>
<td>C</td>
<td>AA is subject to tidal inputs less often than would be expected under natural circumstances due to management of the inlet to prevent its opening.</td>
</tr>
<tr>
<td>D</td>
<td>AA is rarely subject to natural tidal inputs.</td>
</tr>
</tbody>
</table>
Hydrologic Connectivity

Definition: Hydrologic Connectivity describes the ability of water to flow into or out of the wetland, or to accommodate rising flood waters without dramatic changes in water level, which can result in stress to wetland plants and animals. This metric pertains only to Riverine, Estuarine, Vernal Pool Systems, Individual Vernal Pools, Depressional, and Playas.

This metric is scored by assessing the degree to which the lateral movement of flood waters or the associated upland transition zone of the AA and/or its encompassing wetland is restricted by unnatural features such as levees, sea walls, or road grades.

For estuarine wetlands, this metric should be scored by considering anthropogenic restrictions on the tidal hydrology. The percentage of restriction should be calculated only in consideration of those features (levees, dikes, seawalls, transportation infrastructure, or other fills) that restrict flood tides.

Table 4.15c: Rating of Hydrologic Connectivity for Estuarine, Depressional, Lacustrine, and Slope wetlands, Playas, Individual Vernal Pools, and Vernal Pool Systems.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Alternative States</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Rising water in the wetland that contains the AA has unrestricted access to adjacent areas, without levees or other obstructions to the lateral movement of flood waters.</td>
</tr>
<tr>
<td>B</td>
<td>There are unnatural features such as levees or road grades that limit the amount of adjacent transition zone or the lateral movement of flood waters, relative to what is expected for the setting. But, the limitations exist for less than 50% of the boundary of wetland that contains the AA. Restrictions may be intermittent along margins of the wetland, or they may occur only along one bank or shore of the wetland. Flood flows may exceed the obstructions, but drainage back to the wetland is obstructed.</td>
</tr>
<tr>
<td>C</td>
<td>The amount of adjacent transition zone or the lateral movement of flood waters is limited, relative to what is expected for the setting, by unnatural features, such as levees or road grades, for 50-90% of the wetland that contains the AA. Flood flows may exceed the obstructions, but drainage back to the wetland is obstructed.</td>
</tr>
<tr>
<td>D</td>
<td>The amount of adjacent transition zone or the lateral movement of flood waters is limited, relative to what is expected for the setting, by unnatural features, such as levees or road grades, for more than 90% of the wetland that contains the AA.</td>
</tr>
</tbody>
</table>

Attribute 3: Physical Structure

Structural Patch Richness

Definition: Patch richness is the number of different obvious types of physical surfaces or features that may provide habitat for aquatic, wetland, or riparian species. This metric is different from topographic complexity in that it addresses the number of different patch types, whereas topographic complexity evaluates the spatial arrangement and interpenetration of the types. Physical patches can be natural or unnatural.

Patch Type Definitions:

- **Animal mounds and burrows**: Many vertebrates make mounds or holes as a consequence of their foraging, denning, predation, or other behaviors. The resulting soil disturbance helps to redistribute soil nutrients and influences plant species composition and abundance. To be considered a patch type there should be evidence that a population of burrowing animals has occupied the Assessment Area. A single burrow or mound does not constitute a patch.

- **Bank slumps or undercut banks on channels or along shorelines**: A bank slump is a portion of a depositional, estuarine, or lacustrine bank that has broken free from the rest of the bank but has not eroded away. Undercuts are areas along the bank or shoreline of a wetland that have been excavated by waves or flowing water.

- **Cobble and boulders**: Cobble and boulders are rocks of different size categories. The long axis of cobble ranges from about 6 cm to about 25 cm. A boulder is any rock having a long axis greater than 25 cm. Submerged cobbles and boulders provide abundant habitat for aquatic macroinvertebrates and small fish. Exposed cobbles and boulders provide roosting habitat for birds and shelter for amphibians. They contribute to patterns of shade and light and air movement near the ground surface that affect local soil moisture gradients, deposition of seeds and debris, and overall substrate complexity.

- **Concentric or parallel high water marks**: Repeated variation in water level in a wetland can cause concentric zones in soil moisture, topographic slope, and chemistry that translate into visible zones of different vegetation types, greatly increasing overall ecological diversity. The variation in water level might be natural (e.g., seasonal) or anthropogenic.

- **Debris jams**: A debris jam is an accumulation of drift wood and other flotsam across a channel that partially or completely obstructs surface water flow.

- **Hummocks or sediment mounds**: Hummocks are mounds created by plants in slope wetlands, depressions, and along the banks and floodplains of fluvial and tidal systems. Hummocks are typically less than 1 m high. Sediment mounds are similar to hummocks but lack plant cover.

- **Islands (exposed at high-water stage)**: An island is an area of land above the usual high water level and, at least at times, surrounded by water in a riverine, lacustrine, estuarine, or playa system. Islands differ from hummocks and other mounds by being large enough to support trees or large shrubs.

- **Macroalgae and algal mats**: Macroalgae occurs on benthic sediments and on the water surface of all types of wetlands. Macroalgae are important primary producers, representing the base of the food web in some wetlands. Algal mats can provide abundant habitat for macro-invertebrates, amphibians, and small fishes.

- **Non-vegetated flats (sandflats, mudflats, gravel flats, etc.)**: A flat is a non-vegetated area of silt, clay, sand, shell hash, gravel, or cobble at least 10 m wide and at least 30 m long that adjoins the wetland.
### Table 4.4: Rating of Structural Patch Richness (based on results from workshops)

<table>
<thead>
<tr>
<th>Type</th>
<th>Rating</th>
<th>Example of Topographic Features</th>
<th>Examples of Topographic Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confined Riverine, System and Depressional</td>
<td>4-5</td>
<td>8-10</td>
<td>8-10</td>
</tr>
<tr>
<td>Confined Estuarine</td>
<td>3-6</td>
<td>5-7</td>
<td>6-7</td>
</tr>
<tr>
<td>Confined Slope</td>
<td>3-6</td>
<td>5-7</td>
<td>6-7</td>
</tr>
<tr>
<td>Confined Slope Wetlands</td>
<td>3-6</td>
<td>5-7</td>
<td>6-7</td>
</tr>
<tr>
<td>Confined Lacustrine</td>
<td>3-6</td>
<td>5-7</td>
<td>6-7</td>
</tr>
<tr>
<td>Confined Vernal Pools</td>
<td>3-6</td>
<td>5-7</td>
<td>6-7</td>
</tr>
<tr>
<td>Confined Playas</td>
<td>3-6</td>
<td>5-7</td>
<td>6-7</td>
</tr>
</tbody>
</table>

### Table 4.1: Typical indicators of Macro and Microtopographic Complexity

<table>
<thead>
<tr>
<th>Type</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confined Riverine, System and Depressional</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Confined Estuarine</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Confined Slope</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Confined Slope Wetlands</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Confined Lacustrine</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Confined Vernal Pools</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Confined Playas</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
</tbody>
</table>

### Topographic Complexity

Definition: Topographic complexity refers to the variety of domanics within a wetland due to physical, biologic, textural and other gradients.

Table 4.1: Typical indicators of Macro and Microtopographic Complexity

<table>
<thead>
<tr>
<th>Type</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confined Riverine, System and Depressional</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Confined Estuarine</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Confined Slope</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Confined Slope Wetlands</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Confined Lacustrine</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Confined Vernal Pools</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Confined Playas</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
</tbody>
</table>

### Table 4.2: Rating of Structural Patch Richness (based on results from workshops)

<table>
<thead>
<tr>
<th>Type</th>
<th>Rating</th>
<th>Example of Topographic Features</th>
<th>Examples of Topographic Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confined Riverine, System and Depressional</td>
<td>4-5</td>
<td>8-10</td>
<td>8-10</td>
</tr>
<tr>
<td>Confined Estuarine</td>
<td>3-6</td>
<td>5-7</td>
<td>6-7</td>
</tr>
<tr>
<td>Confined Slope</td>
<td>3-6</td>
<td>5-7</td>
<td>6-7</td>
</tr>
<tr>
<td>Confined Slope Wetlands</td>
<td>3-6</td>
<td>5-7</td>
<td>6-7</td>
</tr>
<tr>
<td>Confined Lacustrine</td>
<td>3-6</td>
<td>5-7</td>
<td>6-7</td>
</tr>
<tr>
<td>Confined Vernal Pools</td>
<td>3-6</td>
<td>5-7</td>
<td>6-7</td>
</tr>
<tr>
<td>Confined Playas</td>
<td>3-6</td>
<td>5-7</td>
<td>6-7</td>
</tr>
</tbody>
</table>
Figure 4.6: Scale-independent schematic profiles of Topographic Complexity.
Each profile A-D represents one-half of a characteristic cross-section through an AA. The right end of each profile represents either the buffer along the backshore of the wetland encompassing the AA or, if the AA is not contiguous with the buffer, then the right end of each profile represents the edge of the AA.

Table 4.1b: Rating of Topographic Complexity for all Estuarine Wetlands.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Alternative States (based on diagrams in Figure 4.6 above)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>The vegetated plain of the AA in cross-section has a variety of micro-topographic features created by plants, animal tracks, cracks, partially buried debris, retrogressing channels (filling-in with sediment and plants), natural levees along channels, potholes and pannes that together comprise a complex array of ups and downs resembling diagram A in Figure 4.6b.</td>
</tr>
<tr>
<td>B</td>
<td>The vegetated plain of the AA has a variety of micro-topographic features as described above for “A” but they are less abundant and/or they comprise less variability in elevation overall, as illustrated in diagram B of Figure 4.6b.</td>
</tr>
<tr>
<td>C</td>
<td>The vegetated plain of the AA has a variety of micro-topographic features as described above for “A” but lacks well-formed tidal channels that are well-drained during ebb tide. If channels exist, they mostly do not drain well or are filling-in with sediment. The plain overall resembles diagram C of Figure 4.6b.</td>
</tr>
<tr>
<td>D</td>
<td>The vegetated plain of the AA has little or no micro-topographic relief and few or no well-formed channels. The plain resembles diagram D of Figure 4.6b.</td>
</tr>
</tbody>
</table>

Attribute 4: Biotic Structure

Plant Community Metric

Definition: The Plant Community Metric is composed of three submetrics for each wetland type. Two of these sub-metrics, Number of Co-dominant Plants and Percent Invasion, are common to all wetland types. For all wetlands except Vernal Pools and Vernal Pool Systems, the Number of Plant Layers as defined for CRAM is also assessed. For Vernal Pools and Pool Systems, the Number of Plant layers submetric is replaced by the Native Species Richness submetric. A thorough reconnaissance of an AA is required to assess its condition using these submetrics. The assessment for each submetric is guided by a set of Plant Community Workshops. The Plant Community metric is calculated based on observations from these workshops.

A “plant” is defined as an individual of any species of tree, shrub, herb/forb, moss, fern, emergent, submerged, submergent or floating macrophyte, including non-native (exotic) plant species. For the purposes of CRAM, a plant “layer” is a stratum of vegetation indicated by a discreet canopy at a specified height that comprises at least 5% of the area of the AA where the layer is expected.

Non-native species owe their occurrence in California to the actions of people since shortly before EuroAmerican contact. “Invasive” species are non-native species that tend to dominate one or more plant layers within an AA. CRAM uses the California Invasive Plant Council (Cal-IPC) list to determine the invasive status of plants, with augmentation by regional experts.

Number of Plant Layers Present

To be counted in CRAM, a layer must cover at least 5% of the portion of the AA that is suitable for the layer. This would be the littoral zone of lakes and depressional wetlands for the one aquatic layer, called “floating.” The “short,” “medium,” and “tall” layers might be found throughout the non-aquatic areas of each wetland class, except in areas of exposed bedrock, mudflat, beaches, active point bars, etc. The “very tall” layer is usually expected to occur along the backshore, except in forested wetlands.

It is essential that the layers be identified by the actual plant heights (i.e., the approximate maximum heights) of plant species in the AA, regardless of the growth potential of the species. For example, a young sapling redwood between 0.5 m and 0.75 m tall would belong to the “tall” layer, even though in the future the same individual redwood might belong to the “very tall” layer. Some species might belong to multiple plant layers. For example, groves of red alders of all different ages and heights might collectively represent all four non-aquatic layers in a riverine AA. Riparian vines, such as wild grape, might also dominate all of the non-aquatic layers.
Layer definitions:

Floating Layer. This layer includes rooted aquatic macrophytes such as *Ruppia cirrhosa* (ditchgrass), *Ranunculus aquatilis* (water buttercup), and *Psideoconon phylicoides* (leafy pondweed) that create floating or buoyant canopies at or near the water surface that shade the water column. This layer also includes non-rooted aquatic plants such as *Lemna* spp. (duckweed) and *Eichhornia crassipes* (water hysicnthus) that form floating canopies.

Short Vegetation. This layer varies in maximum height among the wetland types, but is never taller than 50 cm. It includes small emergent vegetation and plants. It can include young forms of species that grow taller. Vegetation that is naturally short in its mature stage includes *Nasturium aquaticum* (watercress), small *Isoetes* (quillworts), *Dithbildi spathula* (saltgrass), *Juncus carnosus* (juncus), *Ranunculus flammula* (creeping buttercup), *Alisma* spp. (water plantain), *Sparganium* (burweeds), and *Sagittaria* spp. (arrowhead).

Medium Vegetation. This layer never exceeds 75 cm in height. It commonly includes emergent vegetation such as *California virginica* (pickelweed), *Atriptelea* spp. (saltbrush), rushes (*Juncus* spp.), and *Ranunculus crispus* (curly dock).

Tall Vegetation. This layer never exceeds 1.5 m in height. It usually includes the tallest emergent vegetation and the larger shrubs. Examples include *Tetraglochin lutea* (broad-leaved cattail), *Sycopsis californica* (beardbrush), *Rubus sericeus* (California blackberry), and *Baccharis pilularis* (creosote brush).

Very Tall Vegetation. This layer is reserved for shrubs, vines, and trees that are taller than 1.5 m. Examples include *Plantnauta raumosa* (western sycamore), *Populus fremontii* (Fremont cottonwood), *Alnus rubra* (red alder), *Sambucus nigra* (bitter elderberry), and *Corylus alba* (hazelnut).

Standing (upright) dead or senescent vegetation from the previous growing season can be used in addition to live vegetation to assess the number of plant layers present. However, the lengths of prostrate stems or shoots are disregarded. In other words, fallen vegetation should not be "held up" to determine the plant layer to which it belongs. The number of plant layers must be determined based on the way the vegetation presents itself in the field.

Appendix I: Flow Chart to Determine Plant Dominance

**Step 1: Determine the number of plant layers.** Estimate which possible layers comprise at least 5% of the portion of the AA that is suitable for supporting vascular vegetation.

- **< 5%**
  - It does not count as a layer, and is no longer considered in this analysis.

- **≥ 5%**
  - It counts as a layer.

**Step 2: Determine the co-dominant plant species in each layer.** For each layer, identify the species that represent at least 10% of the total area of plant cover.

- **< 10%**
  - It is not a “dominant” species, and is no longer considered in the analysis.

- **≥ 10%**
  - It is a “dominant” species.

**Step 3: Determine invasive status of co-dominant plant species.** For each plant layer, use the list of invasive species (Appendix IV) or local expertise to identify each co-dominant species that is invasive. eCRAM software will automatically identify known invasive species that are listed as co-dominants.
Plant Community Metric Worksheet 1 of 8: Plant layer heights for all wetland types.

<table>
<thead>
<tr>
<th>Wetland Type</th>
<th>Aquatic</th>
<th>Semi-aquatic and Riparian</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Floating</td>
<td>Short</td>
</tr>
<tr>
<td>Perennial Saline Estuarine</td>
<td>On Water Surface</td>
<td>&gt;0.3 m</td>
</tr>
<tr>
<td>Perennial Non-saline Estuarine, Seasonal Estuarine</td>
<td>On Water Surface</td>
<td>&gt;0.3 m</td>
</tr>
<tr>
<td>Lacustrine, Depressional and Non-confined Riverine</td>
<td>On Water Surface</td>
<td>&gt;0.5 m</td>
</tr>
<tr>
<td>Slope</td>
<td>NA</td>
<td>&lt;0.3 m</td>
</tr>
<tr>
<td>Confined Riverine</td>
<td>NA</td>
<td>&lt;0.5 m</td>
</tr>
</tbody>
</table>

Number of Co-dominant Species

For each plant layer in the AA, all species represented by living vegetation that comprises at least 10% relative cover within the layer are considered to be dominant. Only living vegetation in growth position is considered in this metric. Dead or senescent vegetation is disregarded.

Percent Invasion

The number of invasive co-dominant species for all plant layers combined is assessed as a percentage of the total number of co-dominants, based on the results of the Number of Co-dominant Species submetric. The invasive status for many California wetland and riparian plant species is based on the CalIPC list (Appendix IV). However, the best professional judgment of local experts may be used instead to determine whether or not a co-dominant species is invasive.

Table 4.19: Ratings for submetrics of Plant Community Metric.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Number of Plant Layers Present</th>
<th>Number of Co-dominant Species</th>
<th>Percent Invasion</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4 - 5</td>
<td>≥ 5</td>
<td>0 - 15%</td>
</tr>
<tr>
<td>B</td>
<td>2 - 3</td>
<td>4</td>
<td>16 - 30%</td>
</tr>
<tr>
<td>C</td>
<td>1</td>
<td>2 - 3</td>
<td>31 - 45%</td>
</tr>
<tr>
<td>D</td>
<td>0</td>
<td>0 - 1</td>
<td>46 - 100%</td>
</tr>
</tbody>
</table>

Perennial Non-Saline and Seasonal Estuarine Wetlands

<table>
<thead>
<tr>
<th>Rating</th>
<th>Number of Plant Layers Present</th>
<th>Number of Co-dominant Species</th>
<th>Percent Invasion</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4 - 5</td>
<td>≥ 2</td>
<td>0 - 20%</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
<td>5 - 6</td>
<td>21 - 35%</td>
</tr>
<tr>
<td>C</td>
<td>1 - 2</td>
<td>3 - 4</td>
<td>36 - 60%</td>
</tr>
<tr>
<td>D</td>
<td>0</td>
<td>0 - 2</td>
<td>61 - 100%</td>
</tr>
</tbody>
</table>
Horizontal Interspersion and Zonation

Definition: Horizontal biotic structure refers to the variety and interspersion of plant "zones." Plant zones are plant monocultures or obvious multi-species association that are arrayed along gradients of elevation, moisture, or other environmental factors that seem to affect the plant community organization in plan view. Interspersion is essentially a measure of the number of distinct plant zones and the amount of edge between them.

Table 4.20a: Rating of Horizontal Interspersion of Plant Zones for all AAs except Riverine and Vernal Pool Systems.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Alternative States (based on Figures 4.7, 4.8, and 4.10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>AA has a high degree of plan-view interspersion.</td>
</tr>
<tr>
<td>B</td>
<td>AA has a moderate degree of plan-view interspersion.</td>
</tr>
<tr>
<td>C</td>
<td>AA has a low degree of plan-view interspersion.</td>
</tr>
<tr>
<td>D</td>
<td>AA has essentially no plan-view interspersion.</td>
</tr>
</tbody>
</table>

Note: When using this metric, it is helpful to assign names of plant species or associations of species to the colored patches in Figure 4.10.
Vertical Biotic Structure

**Definition:** The vertical component of biotic structure consists of the interperssion and complexity of plant layers. The same plant layers used to assess the Plant Community Composition Metrics (see Section 4.4.2) are used to assess Vertical Biotic Structure. To be counted in CRAM, a layer must cover at least 5% of the portion of the AA that is suitable for the layer. This metric does not pertain to Vernal Pools, Vernal Pool Systems, or Playas.

Figure 4.12: Schematic diagrams of plant canopies and entrained litter used to assess Vertical Biotic Structure in all Estuarine wetlands, or in Depressional and Lacustrine wetlands dominated by emergent monocots or lacking Tall and Very Tall plant layers.

Table 4.22: Rating of Vertical Biotic Structure for wetlands dominated by emergent monocots or lacking Tall and Very Tall plant layers, especially Estuarine saline wetlands (see Figure 4.12).

<table>
<thead>
<tr>
<th>Rating</th>
<th>Alternative States</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Most of the vegetated plain of the AA has a dense canopy of living vegetation or entrained litter or detritus forming a “ceiling” of cover 10-20 cm of above the wetland surface that shades the surface and can provide abundant cover for wildlife.</td>
</tr>
<tr>
<td>B</td>
<td>Less than half of the vegetated plain of the AA has a dense canopy of vegetation or entrained litter as described in “A” above; OR Most of the vegetated plain has a dense canopy but the ceiling it forms is much less than 10-20 cm above the ground surface.</td>
</tr>
<tr>
<td>C</td>
<td>Less than half of the vegetated plain of the AA has a dense canopy of vegetation or entrained litter AND the ceiling it forms is much less than 10-20 cm above the ground surface.</td>
</tr>
<tr>
<td>D</td>
<td>Most of the AA lacks a dense canopy of living vegetation or entrained litter or detritus.</td>
</tr>
</tbody>
</table>

Guidelines to Complete the Stressor Checklist

**Definition:** A stressor, as defined for the purposes of the CRAM, is an anthropogenic perturbation within a wetland or its environmental setting that is likely to negatively impact the condition and function of the CRAM Assessment Area (AA). A disturbance is a natural phenomenon that affects the AA.

There are four underlying assumptions of the Stressor Checklist: (1) deviation from the best achievable condition can be explained by a single stressor or multiple stressors acting on the wetland; (2) increasing the number of stressors acting on the wetland causes a decline in its condition (there is no assumption as to whether this decline is additive (linear), multiplicative, or is best represented by some other non-linear mode); (3) increasing either the intensity or the proximity of the stressor results in a greater decline in condition; and (4) continuous or chronic stress increases the decline in condition.

The process to identify stressors is the same for all wetland types. For each CRAM attribute, a variety of possible stressors are listed. Their presence and likelihood of significantly affecting the AA are recorded in the Stressor Checklist Worksheet. For the Hydrology, Physical Structure, and Biotic Structure attributes, the focus is on stressors operating within the AA or within 50 m of the AA. For the Buffer and Landscape Context attribute, the focus is on stressors operating within 500 m of the AA. More distant stressors that have obvious, direct, controlling influences on the AA can also be noted.

<table>
<thead>
<tr>
<th>Has a major disturbance occurred at this wetland?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>If yes, was it a flood, fire, landslide, or other?</td>
<td>flood, fire, landslide, or other</td>
<td></td>
</tr>
<tr>
<td>If yes, then how severe is the disturbance?</td>
<td>likely to affect site next 5 or more years, likely to affect site next 3-5 years, likely to affect site next 1-2 years</td>
<td></td>
</tr>
<tr>
<td>If this wetland been converted from another type? If yes, then what was the previous type?</td>
<td>depressional, vernal pool, vernal pool system, non-tidal wetland, tidal wetland, estuarine, perennial saline wetland, perennial non-saline wetland, wet meadow, lacustrine, swamp, or spring, deserts, or playas</td>
<td></td>
</tr>
</tbody>
</table>

Table 5.1: Wetland disturbances and conversions.
### Stressor Checklist Worksheet

<table>
<thead>
<tr>
<th>HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)</th>
<th>Present and likely to have negative effect on AA</th>
<th>Significant negative effect on AA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point Source: (PS) discharges (POTW, other non-stormwater discharge)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-point Source (Non-PS) discharges (urban runoff, farm drainage)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow directions or unnatural inflows</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dams (reservoirs, detention basins, recharge basins)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow obstructions (culverts, paved stream crossings)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weir/drop structure, tide gates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dredged aid/channel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineers channel (riprap, armored channel bank, bed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dike/levees</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groundwater extraction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ditches (brow, agricultural drainage, mosquito control, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actively managed hydrology</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comments**

---

<table>
<thead>
<tr>
<th>PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)</th>
<th>Present and likely to have negative effect on AA</th>
<th>Significant negative effect on AA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filling or dumping of sediment or soils (N/A for restoration areas)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/compaction (N/A for restoration areas)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paving/Dicting (N/A for restoration areas)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource extraction (sediment, gravel, oil and/or gas)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetation management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excessive sediment or organic debris from watershed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excessive runoff from watershed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nutrient impaired (PS or Non-PS pollution)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy metal impaired (PS or Non-PS pollution)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pesticides or trace organics impaired (PS or Non-PS pollution)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bacteria and pathogens impaired (PS or Non-PS pollution)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comments**

---

<table>
<thead>
<tr>
<th>BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)</th>
<th>Present and likely to have negative effect on AA</th>
<th>Significant negative effect on AA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mowing, grazing, excessive herbivory (within AA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excessive human visitation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Predation and habitat destruction by non-native vertebrates (e.g., Uroplatus sp and domestic predators, such as feral pets)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tree cutting/ripping removal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Removal of woody debris</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment of non-native and nuisance plant species</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pesticide application or vector control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biological resource extraction or stocking (fisheries, aquaculture)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excessive organic debris in matrix (for vertical pools)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of vegetation management to conserve natural resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of treatment of invasive plants adjacent to AA or buffer</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comments**

---

<table>
<thead>
<tr>
<th>BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)</th>
<th>Present and likely to have negative effect on AA</th>
<th>Significant negative effect on AA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban residential</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial/commercial</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Military training/Air traffic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dams (or other major flow regulation or disruption)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irrigation/farming</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intensive row-crop agriculture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orchards/nurseries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial feedlots</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dairies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ranching (enclosed livestock grazing or horse paddock or feedlot)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation corridor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rangeland (livestock rangeland also managed for native vegetation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sports fields and urban parklands (golf courses, soccer fields, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passive recreation (hiking, biking, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active recreation (off-road vehicles, mountain biking, hunting, fishing)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical resource extraction (rock, sediment, oil/gas)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biological resource extraction (aquaculture, commercial fisheries)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comments**

---

35

---

36
### CRAM Score Guidelines

**Table 3.11: Steps to calculate attribute scores and AA scores.**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1: Calculate Metric Score</strong></td>
<td>For each Metric, convert the letter score into the corresponding numeric score: A=12, B=9, C=6 and D=3.</td>
</tr>
</tbody>
</table>
| **Step 2: Calculate raw Attribute Score** | For each Attribute, calculate the Raw Attribute Score as the sum of the numeric scores of the component Metrics, except in the following cases: 

- For Attribute 1 (Buffer and Landscape Context), the submetric scores relating to buffer are combined into an overall buffer score that is added to the score for the Landscape Connectivity metric, using the following formula: 
  \[
  \text{Buffer Context} \times \left( \frac{\% \text{ AA with Buffer}}{\text{Average Buffer Width}} \times \frac{1}{4} \right) + \text{Landscape Connectivity}
  \]

- Prior to calculating the Biotic Structure Raw Attribute Score, average the three Plant Community sub-metrics. 

- For vernal pool systems, first calculate the average score for all three Plant Community sub-metrics for each replicate pool, then average these scores across all six replicate pools, and then calculate the average Topographic Complexity score for all six replicates. |
| **Step 3: Calculate final Attribute Score** | For each Attribute, divide its Raw Attribute Score by its maximum possible score, which is 24 for Buffer and Landscape Context, 36 for Hydrology, 24 for Physical Structure, and 36 for Biotic Structure. |
| **Step 4: Calculate the AA Score** | Calculate the AA score by averaging the Final Attribute Scores. Round the average to the nearest whole integer. |
### Appendix C. CRAM Assessment Scores

<table>
<thead>
<tr>
<th>AA name</th>
<th>AA 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetland sub-type</td>
<td>Seasonal Estuarine</td>
</tr>
<tr>
<td>AA category</td>
<td>Impacted</td>
</tr>
</tbody>
</table>

#### Landscape Context

<table>
<thead>
<tr>
<th>Landscape connectivity</th>
<th>Scores</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>q=30%, E=66%, W=46%, N=9%, Ave=38%, C</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Percent of AA with undisturbed edge</td>
<td>12</td>
<td>100%, A</td>
</tr>
<tr>
<td>Average width of adjacent undisturbed areas</td>
<td>9</td>
<td>42, 83, 243, 200, 160, 250, 240, 55, Ave=159, B</td>
</tr>
<tr>
<td>Condition of adjacent undisturbed area</td>
<td>9</td>
<td>B</td>
</tr>
<tr>
<td>Attribute score</td>
<td>16.4</td>
<td>68.3%</td>
</tr>
</tbody>
</table>

#### Hydrology

<table>
<thead>
<tr>
<th>Water source</th>
<th>Scores</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>water pump, deep well</td>
<td>6</td>
<td>B</td>
</tr>
<tr>
<td>Hydroperiod</td>
<td>3</td>
<td>rarely receives tidal inputs, D</td>
</tr>
<tr>
<td>Hydrologic connectivity</td>
<td>12</td>
<td>AA is unrestricted, A</td>
</tr>
<tr>
<td>Attribute score</td>
<td>21</td>
<td>58.3%</td>
</tr>
</tbody>
</table>

#### Physical Structure

<table>
<thead>
<tr>
<th>Structural patch richness</th>
<th>Scores</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 patch types present, B</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Topographic complexity</td>
<td>12</td>
<td>many types and large variations, A</td>
</tr>
<tr>
<td>Attribute score</td>
<td>21</td>
<td>87.5%</td>
</tr>
</tbody>
</table>

#### Biotic Structure

<table>
<thead>
<tr>
<th>Number of plant layers present</th>
<th>Scores</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 layers present, B</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Number of co-dominant species</td>
<td>12</td>
<td>7 co-dominant plant species, A</td>
</tr>
<tr>
<td>Percent invasion</td>
<td>6</td>
<td>3 invasive species, 42%, C</td>
</tr>
<tr>
<td>Plant Community Metric</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Horizontal dispersion</td>
<td>9</td>
<td>field assessment, B</td>
</tr>
<tr>
<td>Vertical biotic structure</td>
<td>12</td>
<td>&lt;90% vegetated, &gt;20cm, A</td>
</tr>
<tr>
<td>Attribute score</td>
<td>30</td>
<td>83.3%</td>
</tr>
</tbody>
</table>

**OVERALL SCORE** 73.7%

---

### Appendix C. CRAM Assessment Scores

<table>
<thead>
<tr>
<th>AA name</th>
<th>AA 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetland sub-type</td>
<td>Seasonal Estuarine</td>
</tr>
<tr>
<td>AA category</td>
<td>Impacted</td>
</tr>
</tbody>
</table>

#### Landscape Context

<table>
<thead>
<tr>
<th>Landscape connectivity</th>
<th>Scores</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>E=48%, S=20%, W=8%, N=5%, Ave=20%, D</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Percent of AA with undisturbed edge</td>
<td>12</td>
<td>90%, A</td>
</tr>
<tr>
<td>Average width of adjacent undisturbed areas</td>
<td>6</td>
<td>42, 94, 110, 97, 250, 70, 39, 41, Ave=92.9, C</td>
</tr>
<tr>
<td>Condition of adjacent undisturbed area</td>
<td>9</td>
<td>B</td>
</tr>
<tr>
<td>Attribute score</td>
<td>12.4</td>
<td>51.6%</td>
</tr>
</tbody>
</table>

#### Hydrology

<table>
<thead>
<tr>
<th>Water source</th>
<th>Scores</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>storm water culvert and precip, C</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Hydroperiod</td>
<td>3</td>
<td>valve shuts out tidal influence, D</td>
</tr>
<tr>
<td>Hydrologic connectivity</td>
<td>6</td>
<td>&lt;75% confined, C</td>
</tr>
<tr>
<td>Attribute score</td>
<td>15</td>
<td>41.7%</td>
</tr>
</tbody>
</table>

#### Physical Structure

<table>
<thead>
<tr>
<th>Structural patch richness</th>
<th>Scores</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 patch types present, C</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Topographic complexity</td>
<td>9</td>
<td>sparse topographic features, B</td>
</tr>
<tr>
<td>Attribute score</td>
<td>15</td>
<td>62.5%</td>
</tr>
</tbody>
</table>

#### Biotic Structure

<table>
<thead>
<tr>
<th>Number of plant layers present</th>
<th>Scores</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 layers present, B</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Number of co-dominant species</td>
<td>12</td>
<td>9 co-dominant species, A</td>
</tr>
<tr>
<td>Percent Invasion</td>
<td>6</td>
<td>5 invasive species, 56%, C</td>
</tr>
<tr>
<td>Plant Community Metric</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Horizontal dispersion</td>
<td>6</td>
<td>field assessment, C</td>
</tr>
<tr>
<td>Vertical biotic structure</td>
<td>12</td>
<td>&lt;90% vegetated, &gt;20cm, A</td>
</tr>
<tr>
<td>Attribute score</td>
<td>27</td>
<td>75.0%</td>
</tr>
</tbody>
</table>

**OVERALL SCORE** 57.8%
<table>
<thead>
<tr>
<th>Attribute/Score</th>
<th>Overall Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant Community</td>
<td>6</td>
</tr>
<tr>
<td>Percent of Undisturbed Edges</td>
<td>6</td>
</tr>
<tr>
<td>Landscape Connectivity</td>
<td>6</td>
</tr>
<tr>
<td>Condition of Adjacent Undisturbed Area</td>
<td>6</td>
</tr>
<tr>
<td>Percent of AA</td>
<td>6</td>
</tr>
<tr>
<td>E=25%; I=35%; S=35%</td>
<td>6</td>
</tr>
<tr>
<td>AA Type</td>
<td>6</td>
</tr>
<tr>
<td>Comments</td>
<td>6</td>
</tr>
</tbody>
</table>

**Comments:**
- The plant community score is 6, indicating a well-developed plant community.
- The percent of undisturbed edges is 6, showing a good number of edges with minimal disturbance.
- Landscape connectivity is rated 6, suggesting strong connectivity within the landscape.
- The condition of adjacent undisturbed areas is rated 6, indicating excellent conditions.
- The percent of AA is 6, with 25% E, 35% I, and 35% S.
- The AA type is unspecified.

**Overall Score:** 6

### Appendix C: CMA Assessment Scores

<table>
<thead>
<tr>
<th>Season</th>
<th>Overall Score</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Spring</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Fall</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

**Overall Comments:**
- Overall, the assessment indicates a favorable condition with high scores in most categories.
- Further detailed analysis is recommended for specific areas requiring improvement.

---

**Comment Letter 19**

- Addressed specific concerns and recommendations for improvement.
- Highlighted areas for additional site visits and monitoring.

---

**Landscape Context:**
- Evaluated with regard to surrounding landscape influences and connectivity.

---

**Wetland Type:**
- Evaluated based on wetland type classification and specific site conditions.

---

**Landscape Type:**
- Evaluated with respect to landscape typology and geographical context.
Top: Example of wetland landscape context: public roads and residential development
Bottom: Overview of West Wetland looking west
Photographs taken October 5, 2007

Top: Overview of East Wetland showing Eucalyptus plantings along wetland edge and freshwater species to the east
Bottom: Overview of East #2 Wetland showing cattail dominance and pampas grass along wetland edge
Photographs taken October 6, 2007
Comment Letter 19

Top: Example of ruderal plant community along the wetland edge of East #2 Wetland
Bottom: Valved (slide flap gate) pipe outlet to San Rafael Bay

Photographs taken October 6, 2007
April 8, 2008
Revised April 11, 2008

Mr. Brian Peer
Dutra Materials
1000 Point San Pedro Road
San Rafael, CA 94901

Subject: DEIR February 2008
San Rafael Rock Quarry
San Rafael, California

GEOTECHNICAL COMMENTS ON DEIR

References:

2. ENGEIO Incorporated; Supplemental Geotechnical Data Report, Proposed Changes to Mining Plan, San Rafael Quarry; April 11, 2005.

3. ESA Associates; Draft Environmental Impact Report, San Rafael Rock Quarry, Amended Reclamation Plan and Amended Surface Mining and Quarrying Permit, Marin County Community Development Agency; February 2008.

Dear Mr. Peer:

As requested, we have reviewed Sections 4.4 (Geology, Soils and Seismicity), 4.5 (Hydrology and Water Quality) and Appendix K (Geotechnical and Geological Technical Memoranda) of the Draft Environmental impact report (DEIR) for the San Rafael Rock Quarry (Reference 3). We have prepared this letter to present our geotechnical comments on the information in the DEIR. Our comments are based on the technical information in our previously published geotechnical reports (References 1 and 2).

The ENGEIO reports, in support of the Amended Reclamation Plan of 2004 went through a comprehensive review process with the State Office of Mine Reclamation (OMR) during 2005. The OMR review process included review of the technical content of the report by OMR staff and several meetings at OMR offices and at the site. Reference 2 was prepared incorporating OMR comments based on consensus with OMR technical staff.
DEIR SECTION 4.4

Section 4.4 of the DEIR, titled “Geology, Soils and Seismicity” presents a description of the site geologic setting and an interpretation of the more detailed technical data published in References 1 and 2. The intent of this section of the DEIR is to evaluate whether the proposed 2004 Amended Reclamation Plan (ARP) would result in potential adverse impacts related to local geology, soil conditions, or seismicity. The DEIR discusses three potentially significant impacts:

- **R4.4-1**: Prior to the completion of site reclamation, the project site could be subject to slope instability hazards, including landslides, debris flows, and rockfalls caused by seismic or non-seismic mechanisms.

- **Impact R4.4-2**: Soil erosion of exposed cut or fill slopes, native slopes with removed vegetation, and soil stockpiles could result in soil erosion and loss of topsoil.

- **Impact R4.4-3**: Unstable slopes or soils could adversely affect post-reclamation land uses of the Quarry site.

The DEIR presents mitigation measures for each potentially significant impact and concludes that, after implementation of the proposed mitigation measures, each of the potentially significant impacts would be reduced to less-than-significant impacts. The proposed mitigation measures would include additional geotechnical characterization and design studies following the end of mining activities, appropriate geotechnical design and construction methods for second-used development and review and monitoring by County personnel. The proposed mitigation measures are consistent with the recommendations of References 1 and 2 and with typical practices for construction of commercial and residential developments in the Bay Area.

DEIR SECTION 4.5

The DEIR discusses three potentially significant impacts related to geotechnical issues:

- **Impact R4.5-2**: Grading associated with the proposed project would increase the potential for eroded sediments to degrade the quality of surface water sources including the San Francisco Bay.

- **Impact R4.5-8**: The project reclamation and post-reclamation activities would result in an increase in the possibility of inundation by a mudflow, seiche, tsunami, or sea-level rise.

- **Impact R4.5-10**: Post-reclamation development could produce stormwater runoff that would result in a degradation of surface water quality.
The DEIR proposes mitigation measures for R4.5-2 and R4.5-10 that would require water-quality protection measures that are typical for commercial and residential development projects in the Bay Area. Mitigation for R4.5-8 calls for modeling the potential effects of inundation by a sea, tsunami, or sea level rise prior to implementation of a Phase 4 reclamation plan. The DEIR concludes that, after implementation of the proposed mitigation measures, each of the potentially significant impacts would be reduced to less-than-significant impacts.

DEIR APPENDIX K

Appendix K of the DEIR consist of a technical memoranda prepared by Seidelman Associates, titled “Geologic Issues Associated with the Enlargement and Eventual Reclamation of the San Rafael Rock Quarry, Point San Pedro, California”. The Seidelman memo raises concerns around the selection of seismic coefficients and PGA values and recommends a probabilistic approach to evaluation of seismic slope stability hazards:

SEIDELMAN MEMORANDA, PARAGRAPHS 2 AND 3, “DISCUSSION”

In selecting seismic parameters, a mean earthquake magnitude for the site was selected as a magnitude 6.77. Furthermore, a peak ground acceleration of 0.60 was used to obtain a seismic coefficient of 0.14. Based on the consultant’s experience, a seismic coefficient of .15 was settled upon for all stability calculations involving the quarry slopes.

We are concerned that these seismic parameters are not representative of an extreme earthquake event and therefore, they may underestimate the seismic effects on the quarry cut-slopes. Implicit in the report’s finding is a design earthquake for quarry operations that is similar to the design earthquake for the fully developed and rehabilitated marina/residential development. In our opinion, it would be beneficial to evaluate the slope stability both before and after reclamation of the site, utilizing various seismic values and indicating the relative probabilities of their occurrence. The term “mean earthquake magnitude” may not provide sufficient understanding of the variation in seismic loading that is possible over a long time period. The site’s future exposure to earthquakes during quarry operations appears to be far shorter than its future exposure to earthquakes as a marina/housing development. Thus, a probabilistic analysis of earthquake risk resulting from the two land uses occurring over different time periods, with different standards of “acceptable risk”, almost certainly requires different earthquake parameters, or at least a range of earthquake parameters. It would be useful to take the present analyses and determine what magnitude earthquake would be sufficient on the Hayward or San Andreas Fault to cause safety factors of the fully developed quarry to fail to unity.

The concept of acceptable risk has long been defined in California as a locally established standard that falls under the umbrella of State standards. Local communities in the development
of the Seismic Safety and Safety Elements for the general plan are supposed to define within State Building Code guidelines, the level of risk that is acceptable to the community. Traditionally, the acceptable risk has been a function of the activity i.e. schools, hospitals and emergency facilities have the most stringent design criteria and lowest levels of acceptable risk. Quarries and mining operations have generally operated at a substantially higher level of risk. What we are questioning here, is the use of apparently uniform criteria for design earthquakes applied to extremely different land use activities.

In the “Estimation of Seismic Parameters” section of Reference 2, we describe how we selected a PGA of 0.60 with a 10 percent probability of exceedance in a 50-year return interval based on the probabilistic method. This selection method incorporates all seismic sources in the site vicinity, including the Hayward, Rodgers-Creek and San Andreas faults. Estimation of design PGA values for commercial and residential projects is typically based on the probabilistic method, and the probability of exceedance of 10 percent in 50 years is also typically used for such projects. Likewise, our assumptions for the post-mining second-use slope stability analyses were in keeping with the typical standard of care, i.e. we assumed that the minimum required factors of safety should be 1.5 for static and 1.15 (not 1.1 as stated by Seidelman) for earthquake loading conditions. Tables 4 and 5 of Reference 2 make a clear distinction between the required factors of safety for mining and for post-mining static and seismic conditions. None of the calculated factors of safety fall below the minimum required values. The seismic analyses were based on a seismic coefficient of 0.15 as noted by Seidelman. Selection of seismic coefficients is typically based on engineering judgment and experience as well as the typical standard of care for geotechnical practice. As described in detail in Reference 2, we feel that our selection of seismic coefficient of 0.15 and a required seismic factor of safety of 1.15 were reasonable and conservative for residential and commercial projects in the Bay Area and are typical of the geotechnical standard of practice for such projects.

In our experience, where a more rigorous (than pseudo-static analysis) evaluation of seismic slope performance is desired, it has become common geotechnical practice to perform a deformation analysis. As part of Reference 2, ENGEO performed a seismic deformation analysis, (“Newmark Analysis” section of the report) based on methods typically used at the time the report was published (Makdisi & Seed, 1978; SCEC, 2002). The slope deformations calculated from the analyses were negligible. The procedures used by geotechnical engineers for slope deformation analyses continue to evolve, and it is anticipated that, prior to the final design of the project, improved and more advanced analysis methods will be available.

As noted in Reference 2, Newmark displacement analyses are intended to evaluate large-scale slope failures. Possible bench-scale slope movements are addressed by the quarry pit design, which incorporates safety benches and specifies maximum incremental slope inclinations. Reference 2 points out that the design of second-use facilities should consider possible localized bench instability in the design of improvements near the pit brow. The most appropriate time to
evaluate such considerations will be close the end of mining, when the site-specific details of mitigation required for any proposed improvements near the quarry brow can be based on an examination of exposed rock conditions at final grades.

SEIDELMAN MEMORANDA “EARTHQUAKE-INDUCED SEICHE AND TSUNAMI”

There is no discussion of a seismic seiche originating within the marina harbor or within San Francisco Bay. Wave generation programs are available to evaluate seiche events, given the dimensions of the basin and an earthquake event.

It was not within the scope of Reference 2 to address tsunami or seiche hazards. As discussed above, the proposed EIR mitigation measure for Impact R4.5-8 appears to be appropriate.

SEIDELMAN MEMORANDA “UNCONSOLIDATED FILLS”

The project geotechnical reports identify areas of unconsolidated fill that range in thickness from a few feet to up to nearly 60 feet. The fills are located in areas slated for eventual development as part of the reclamation project in the post-quarry era. The geotechnical reports leave the matter of the unconsolidated fills to future studies more directly associated with rehabilitation after quarry operations are terminated. Extensive areas of unconsolidated fills are likely to require grading operations to excavate and recompact quarry waste soils. We are not certain as to the total volume of material. However, the amount of work associated with modifying the quarry waste disposal areas presents a notable impact for consideration at this time. More information is required from the developer concerning the volume and location of these deposits. An isopac of fill thicknesses would display the extent of this problem. There is no impact on quarry operations related to unconsolidated quarry waste fill.

Geotechnical mitigation measures will be a significant consideration for any development in existing fill areas. Mitigation of the existing quarry spoil fills will most likely consist of a combination of in-situ densification, localized removal and recompaction, and appropriate foundation design. These considerations are common to most bayside second-use developments, since bay margin filling was a common practice in the first half of the twentieth century. Mitigation of compressible fills and bay margin soils is well-understood and the required construction methods are in common use throughout the Bay Area.

CONCLUSIONS

The proposed CEQA mitigation measures set forth in the DEIR appear to appropriately consider the site conditions and the typical state of geotechnical practice in the Bay Area. The geotechnical concerns expressed by Seidelman in Appendix K of the DEIR do not appear to have fully considered the information provided in Reference 2. Specifically, ENGEQ performed a
probabilistic analysis to evaluate ground shaking levels for project design, with assumed levels of probability that are typical for residential and commercial projects. Likewise, a clear distinction was made between the levels of risk that are appropriate for mining and second-use development. The seismic coefficients used for analyses are commonly accepted for the type of second-use project proposed for the SRRQ. A deformation analysis was performed in keeping with current geotechnical standards for 2005. The results of analyses indicate that seismic slope stability risks are within limits that are typically acceptable for residential and commercial construction. The proposed CEQA mitigation measures recommend further studies at a later date, in keeping with the recommendations of Reference 2. In our opinion, the future studies recommended in the DEIR text are appropriate, and the conclusion that the geotechnical impacts can be reduced to less-than significant levels is valid.

We are pleased to provide our services to you on this project and look forward to consulting further with you and your design team.

Very truly yours,

ENGEO Incorporated

Philip J. Stuecheli, CEG
pjs/smce

cc: Sandra Friedman, CSW/Steuber-Stroeh (e-mail only)
    Chris Locke, Dutra Materials (e-mail only)
    Lee Selma, Dutra Materials (e-mail only)
Comment Letter 19

10 April 2008

Al Cornwell
CSW/Stuber-Stroeh Engineering
790 De Long Ave.
Novato, CA 94945

Subject: DEIR Review
Project: SRRO Amended Quarry Permit
RGDL #: 07-077-1

Dear Al,

As you know Rosen Goldberg Der & Lewitz, Inc. (RGDL) has been involved in noise analysis in and around San Rafael Rock Quarry (Quarry) over the past four years. During that time we have conducted noise monitoring, evaluated noise mitigation measures and reviewed some of the noise monitoring data provided by Marin County. In addition, Alan Rosen and I participated in noise measurements for a 2002 evaluation of the noise environment surrounding the Quarry while employed by another acoustical consulting company.

At your request we have reviewed the portions of the San Rafael Rock Quarry ARP and AQP DEIR related to noise impact. The following summarizes our comments:

1. Noise Attenuation Measures Implemented by the Quarry

As part of its analysis, the DEIR highlights the efforts that the quarry has recently undertaken to reduce operational noise for the benefit of the neighboring residential communities. These efforts include the use of rubberized barge feeders and transfer boxes as well as the installation of directional/reduced noise back-up alarms on all rolling stock.

The aforementioned noise control treatments address two major noise sources (barge loading and back-up alarms) that have been identified in the DEIR, the June 2007 Initial Study, and previous noise measurement studies. For example, noise measurements conducted in 2006 for the DEIR identified conveyor loading as a dominant noise source at the Quarry. Back-up alarms on mobile equipment were noted as a secondary noise source in the 2006 measurements.

It should be noted that the treatments to the barge loading equipment and the back-up alarms were implemented after the ambient noise measurements for the DEIR were conducted in 2006 and, therefore, their mitigating effects are not reflected in DEIR Table 4.7-4.
Barge Loading Treatment

The noise control treatment of the barge loading equipment consisted of a thick rubber lining applied to the metal surfaces that rocks normally hit as they are directed onto and off of the barge loading conveyor belt. These metal surfaces include the hopper that loads the conveyor belt and the “bangboard” which directs the stream of rocks leaving the conveyor belt. We conducted before and after noise measurements and found that the rubber lining reduced these elements of the barge loading noise (see attached letter dated 17 September 2007).

Also, we understand that the Quarry is converting its steel deck barges to concrete deck barges. We would expect this to reduce noise by dampening the sound of rocks hitting the barge deck.

Back-up Alarm Treatment

DEIR Mitigation Measure R4.7-1a describes the retrofitting of all rolling vehicles at the Quarry with broadband back-up alarms. We have heard the new alarms during our site visits to the quarry. These alarms do not have the characteristic high pitched, “beep beep beep” sound of a traditional backup beeper. Instead, they have a broadband sound that sounds like “shh shh shh.” We expect that these newer backup alarms tend to be less noticeable at the nearby land uses. This conclusion is supported by testimonials from operators of other industrial facilities that have installed these backup alarms and have experienced a reduction or elimination of noise complaints (Brigade Electronics website, 2008).

2. Limits on Hours of Operation and Noise Levels

The proposed amendments to the Surface Mining and Quarry Permit contain limits on hours of operation and noise levels at the quarry’s property boundary. These limits are essentially the same as those contained in the 15 July 2004 Court Order. The fact that these limits would be continued with the Amended Quarry Permit tends to support the DEIR’s finding in Impact 4.7-5 that future quarry operations are not expected to produce noise that exceeds the current noise exposure at nearby residences.

This concludes our current comments. Please contact us if you have any questions.

Sincerely,

Harold S. Goldberg, P.E.
Principal
Rosen Goldberg Der & Lewitz, Inc.
Aimi Dutra Krause  
The Dutra Group  
1000 Point San Pedro Road  
San Rafael, CA  94901

Subject: Barge Loading Noise Reduction Treatments  
Project: San Rafael Rock Quarry Noise Monitoring  
RGDL #: 04-056-1

Dear Aimi,

This letter addresses the noise reduction provided by the treatments to the barge loading equipment. The treatments consisted of covering the metal surfaces of the hopper and the “bangboard” with thick (approximately 5-inches) rubber lining. The purpose of the rubber is to cushion the impact of rocks (e.g. rip rap) on the metal surfaces. On 13 August 2007, we made acoustical measurements of the barge loading after the rubber lining treatments had been implemented. Comparisons were made to noise measurements and observations made in February 2007, before the treatments.

The bangboard is located at the end of the conveyor belt that drops the rocks onto the barge. It is used to direct the stream of falling rocks into piles along the centerline of the barge. The rubber lining made the sound of the rocks hitting the bangboard indistinguishable from the sound of the rocks hitting the pile on the barge. This is in contrast to our observations of loading activities before the treatment when the bangboard was a distinctly noticeable noise source with a “metallic” quality. The measurements show a decrease in the median noise level of up to 2 dBA after the treatments as measured at a distance of about 250 feet from the bangboard. Although the noise contribution of the bangboard has likely been reduced more than this amount by installation of the rubber lining, the other noise sources (such as the rocks hitting the pile on the barge and the diesel engine of the front end loader) tend to limit the measured noise reduction.

The hopper is located at the start of the conveyor belt. A front end loader fills the hopper with shovelfuls of rocks. The effect of the treatment was less apparent at the hopper because the sound of the rocks hitting the sides of the hopper is mixed with the sound of the rocks hitting each other. The measurements show a reduction in the maximum noise level of about 4 dBA after the treatments as measured at a distance of about 330 feet from the hopper. This reduction may also be influenced by acoustical shielding provided by rock stockpiles east of the hopper that were taller.
during the "after treatment" measurements than during the "before treatment" measurements.

This concludes our current comments. Please call if you have any questions.

Sincerely,

[Signature]

Harold S. Goldberg, P.E.
Principal
Rosen Goldberg Der & Lewitz, Inc.
Measurements of Barge Loading at the “Barge” Belt

Location: End of “Swoop” Belt, 250 ft north of Barge Belt and about 25 ft above the water
About 330 feet northeast of Hopper at start of Barge Belt
Equipment: Larson Davis Model 820 and 824.

Rip Rap hilling bangboard, Crushing Plant off

<table>
<thead>
<tr>
<th>Event Description</th>
<th>Date</th>
<th>Time</th>
<th>Median Leq(5 sec) dBA</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before Rubber Lining on Bangboard</td>
<td>14-Feb-07</td>
<td>6:10 PM</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>After Rubber Lining of Bangboard</td>
<td>17-Aug-07</td>
<td>9:14 AM</td>
<td>71</td>
<td>2 decrease</td>
</tr>
</tbody>
</table>

Front End Loader Dumping Rip Rap into Hopper at start of Barge Belt

<table>
<thead>
<tr>
<th>Event Description</th>
<th>Date</th>
<th>Time</th>
<th>Typical Lmax (slow), dBA</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before Rubber Lining on Hopper</td>
<td>14-Feb-07</td>
<td>18:00 - 19:00</td>
<td>79</td>
<td></td>
</tr>
<tr>
<td>After Rubber Lining on Hopper (rock pile just blocks line of sight between hopper and SLM)</td>
<td>17-Aug-07</td>
<td>8:00 - 9:30 AM</td>
<td>75</td>
<td>4 decrease</td>
</tr>
</tbody>
</table>
Comment Letter 19: CSW/Stuber-Stroeh Engineering Group
(Applicant’s Representative)

19-1 This comment reviews the recent legal and administrative processes leading up to the preparation of this EIR. This description largely mirrors that contained in Section 3.2, History of the Projects, in Chapter 3, Project Description.

19-2 This comment provides information that was already contained in the Draft EIR. See Section 3.1.1, Regional Setting, in Chapter 3, Project Description. See also Master Response 12 in Section 7.2 of this document.

19-3 This comment outlines the organization of this comment letter, which includes 7 attachments.

19-4 This is a general comment that does not require a response.

19-5 The first paragraph of this comment is preamble and requires no response. The first bullet point in the list suggests an alteration to the project description to avoid causing a significant unavoidable impact (Impact R4.2-1). This constitutes new information; however, pursuant to CEQA Guidelines §15088.5 (a), this new information does not require recirculation of the Draft EIR, because it does not result in a new or more severe impact, but rather introduces a new project element that is intended to avoid a significant impact identified in the Draft EIR, and the applicant has agreed to implement it. See Master Response 1 in Section 7.2 of this document for more detail on this new information, and how it affects the environmental analysis.

19-6 This comment appears to address Impact R4.2-2. Impact R4.2-2 analyzes the effects of reclamation grading that was not specified in ARP82, and which is therefore considered “new” for the purposes of the EIR analysis. The comment suggests that the applicant will modify the project to avoid this impact. This constitutes new information. See Master Response 1 in Section 7.2 of this document.

19-7 This comment appears to address Impact C4.2-12 (cumulative health risks of past, present, and foreseeable future projects). Please refer to Master Response 5 in Section 7.2 of this document.

19-8 This comment appears to address Impact R4.5-6. The suggestion that this impact can be mitigated with an engineered aeration or circulation system constitutes new information. Please refer to Master Responses 1 and 7 in Section 7.2 of this document.

19-9 This comment appears to address Impact C4.6-7. Please refer to Master Response 9 in Section 7.2 of this document.

19-10 CEQA requires consideration of cumulative effects of past, current, and foreseeable future impacts (CEQA Guidelines §§15065(a)(3); 15355, and 15130(a)(1)). The HRA
conducted for this EIR is consistent with this requirement. Neither the BAAQMD guidelines for health risk assessments (BAAQMD, 2005) nor the OEHHA guidance document (OEHHA, 2005) speaks specifically to inclusion of past exposures in a cumulative HRA performed for a CEQA analysis. A conclusion that a project may have a significant unavoidable impact, either cumulatively with other projects or directly related to the project only, does not preclude approval of the project, but only requires that the decision-making body adopt a statement of overriding considerations, per CEQA Guidelines §15093. Please see also Master Responses 3, Baseline and 5, Health Risk Assessment, in Section 7.2, Master Responses.

19-11 This is a general comment. The issues raised in this comment are addressed more specifically in other comments in this comment letter, and responded to below.

19-12 The Draft EIR is a combined EIR for two closely related projects at the San Rafael Rock Quarry (SRRQ): an Amended Reclamation Plan (ARP04) and an Amended Surface Mining and Quarrying Permit (AQP). As noted in the comment, the applicant requested, pursuant to the CEQA case law, that Marin County conduct environmental review for ARP04 and the AQP as separate projects. The Draft EIR, therefore, separately evaluates the potential for each project to result in adverse effects on the physical environment and evaluates the adverse cumulative effects of both projects combined. Analysis of the two separate but related projects has been combined in a single EIR document in order to enable an expeditious and efficient public review process. The CEQA Guidelines §15165 authorizes the lead agency to prepare a single EIR for two or more separate projects where “one project is one of several similar projects” even when they are not part of the same project.

The project applications were determined complete in January 2005 for both the AQP and ARP04. The County’s Environmental Coordinator determined on preliminary review that an EIR would clearly be required for both the ARP04 and AQP projects. The applicant agreed to proceed directly with preparation of a full scope EIR for ARP04 without first preparing an Initial Study, as provided in CEQA. However, the applicant did not similarly agree to proceed directly to an EIR for the AQP. Consequently, the County prepared an Initial Study for the AQP and subsequently determined on the basis of the Initial Study that an EIR was also required for the AQP.

In El Dorado County Taxpayers for Quality Growth v. County of El Dorado (2004) 122 Cal. App. 4th 1591, the Court of Appeal held that a reclamation plan and the operation of a quarry should not be considered a single project for CEQA purposes. In that case there was no application pending for amending the operating permit so this case is not applicable to the current situation. As noted above, however, the CEQA Guidelines authorize the lead agency to prepare a single EIR for two or more separate projects where “one project is one of several similar projects” even when they are not part of the same project (CEQA Guidelines §15165). The ARP and AQP fit this description. Thus, it is within the County’s discretion to prepare a combined EIR for both projects, despite the El Dorado case.
19-13 This comment claims to identify a legal flaw in the cumulative analysis of the Draft EIR. The CEQA Guidelines state that an EIR must examine whether a project, “has possible environmental effects that are individually limited but cumulatively considerable. ‘Cumulatively considerable’ means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.” (CEQA Guidelines §15065(a)(3)). The cumulative analysis in the Draft EIR follows this guidance. For each cumulative impact, the Draft EIR clearly states which project contributes to the impact, and to what degree. See, for example, Table 4.2-16, which accompanies Impact C4.2-9 (cumulative cancer risks of the AQP and ARP combined), and Table 4.2-17, which accompanies Impact C4.2-10 (cumulative chronic health risks of the AQP and ARP combined), as well as the separate consideration of the contribution of each of the two projects to the cumulative impact described in the discussion of these impacts.

19-14 This is a general comment. The specific issues raised in this comment are discussed in greater detail and specificity in subsequent comments within this comment letter, and responded to below.

19-15 Specific changes from baseline conditions associated with the AQP are described in full in Chapter 3, Project Description, and summarized in Table 3-10 in that chapter.

19-16 Table 2-1 in Chapter 2, Summary (which is the same as Table 3-9 in Chapter 3, Project Description) was confirmed as correct by the applicant during the preparation of the Draft EIR. A change to the proposed hours for maintenance activities would constitute a change to the project and would likely result in the identification of new or more severe impacts. In further communications with the applicant subsequent to receipt of this comment letter, the applicant has confirmed that Table 2-1 and Table 3-9 accurately reflect the proposed hours of operation for the Quarry under the AQP.

19-17 Please refer to Master Response 4 in Section 7.2 of this document.

19-18 As is clearly stated in the introduction to the Draft EIR (Chapter 1, Section 1.1), the two projects are analyzed separately in the document, and will require separate approvals.

19-19 It is unclear what the commenter is suggesting by having the EIR “adopt” the Marin County Superior Court finding. This is a statement of fact being reported in the Draft EIR. Findings regarding any significant impacts identified in a certified EIR must be adopted by the CEQA lead agency prior to approval of the project under consideration (CEQA Guidelines §15091).

19-20 Approval of the ARP does not authorize re-use of the property. The second to last objective on page 3-25 in Chapter 3, Project Description, provides a sufficient and appropriate objective related to post-reclamation use of the site.
As noted in the discussion of baseline for the AQP (page 3-65 through 3-70 in Chapter 3, Project Description), ARP82 states that “noise-generating operations are generally limited to daylight hours on weekdays, except in times of emergency.” This is interpreted to be a reflection both of physical conditions at that time (around 1982), as well as an intent by the Quarry at that time to maintain this self-imposed limitation on hours of operation. This is further interpreted to mean that noise-generating activities may occasionally occur at night.

Please see the response to comment 19-73, below.

Impact P4.1-9 (Proposed nighttime operations would introduce new sources of light and glare) is properly stated, given the baseline for the AQP (see response to comment 19-21, above, as well as Master Response 3 in Section 7.2 of this document), and Mitigation Measure P4.1-9 is necessary to mitigate it.

The health risk assessment contained in Section 4.2, Air Quality, is consistent with the CEQA Guidelines requirements for discussion of cumulative impacts (CEQA Guidelines §15130).

While several of the nearest residences, including those in the location of the most exposed individual, were not built until the 1990s, most of the Peacock Gap Neighborhood was already built in 1982; therefore, while the cumulative health impacts discussed in Impact 4.2-12 are somewhat overstated in that fewer residents were subjected to toxic air contaminants from Quarry operations during the full time period considered, the overall conclusion remains valid. See Figure 4.2-8 in Section 4.2, Air Quality, which shows large areas of the Peacock Gap neighborhood have a greater than 10 in a million risk of additional cancer cases.

Regarding exposure assumptions, please see the response to comment 19-100.

This comment amplifies comments 19-5 and 19-6. Please see the responses to those comments, as well as Master Response 1 in Section 7.2 of this document.

This comment does not question or modify the conclusions reached in the Draft EIR regarding health risks associated with Crystalline Silica. See also Master Response 5 in Section 7.2 of this document.

While it is likely that aggregate materials would need to be sourced from more distant locations if they were not available from SRRQ, and while it is a fact that such materials are currently being imported from Canada to the Bay Area, the quantification of greenhouse gas emissions and other impacts associated with such a scenario would require many assumptions, and is therefore considered speculative and beyond the scope of this EIR.
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19-28 The SMARA requirements to plan for reclamation and eventually reclaim surface mines are described in the Draft EIR. See for example Section 3.2.2, Current Regulatory Requirements and Process in Chapter 3, Project Description. These requirements do not exempt reclamation plans and amended reclamation plans from environmental review under CEQA.

19-29 As ARP82 lacks specificity regarding reclamation grading activities, such as material volumes, schedule, and equipment, a direct comparison of air quality emissions and impacts between ARP82 and ARP04 is impossible. The Draft EIR provides the most complete and consistent analysis possible, without venturing into speculation, given this paucity of baseline information. See also Master Response 3 in Section 7.2 of this document, and the response to comment 2-3, above.

19-30 Most of the points made in this comment are to note that the applicant has already voluntarily implemented the cited mitigation measures. Please note that, should the EIR be certified and the projects approved, all mitigation measures will become conditions of approval or will otherwise become enforceable provisions of the Quarry’s permits. Regarding Mitigation Measure R4.2-1g, the basis for the commenter’s contention that it is infeasible to use a B-80 blend in heavy equipment is unclear in the comment. Additional correspondence with the applicant reveals that use of biodiesel blends greater than B-70 could void engine manufacturers’ warranties (Peer, 2009). Note, however, that this mitigation measure is written broadly to enable use of other alternative fuels and engine technologies that will achieve similar emissions reductions.

19-31 The baseline for determining the significance of project-associated greenhouse gas emissions and contributions to global warming is discussed on page 4.2-29 in Section 4.2, Air Quality. See also Master Response 6 in Section 7.2 of this document.

19-32 Please refer to the response to comment 19-30.

19-33 As noted in Table 3-10 in Chapter 3, Project Description, the application for the AQP proposes no limits on production levels. To ensure that the environmental analysis is properly conservative (that is, that it provides worst case estimates of impacts given the uncertainties surrounding the project), the EIR preparers selected the 20 percent figure as an estimate of the potential increase in annual production in the absence of a limit. This is a fair, reasonable, and conservative assumption based on historic production levels at SRRQ. To assume no increase in production in the absence of a limit would risk underestimating the severity of impacts associated with future Quarry operations under the AQP.

19-34 Please refer to the responses to comments 19-30 and 19-33.

19-35 Please refer to the response to comment 19-33.

19-36 Please refer to the response to comment 19-33.
19-37 The thresholds of significance for emissions related to greenhouse gas emissions are stated in Section 4.2, Air Quality, on page 4.2-29. Mitigation Measure P4.2-7e is properly stated; the applicant must demonstrate how the Quarry will reduce greenhouse gas emissions to a level 15 percent below 1990 levels. See also Master Response 6 in Section 7.2 of this document.

19-38 The health risk assessment presented in Section 4.2, Air Quality, does separately quantify and report the contribution of each of the two projects to health risks. See, for example, Table 4.2-16 and Table 4.2-17, which show pollutants from reclamation activities as distinct line items. The relative contribution of emissions from the AQP and ARP are also discussed in each of the health risk impacts.

19-39 The new EPA rule cited by the commenter applies to new and rebuilt marine diesel engines, but not existing engines already in service (USEPA, 2008). Therefore the assumptions used regarding diesel emissions are proper.

19-40 All results of the health risk assessment show the incremental increase over baseline conditions associated with the projects.

19-41 Please refer to the responses to comments 19-30 and 19-34.

19-42 Please refer to response to comment 19-24.

19-43 Please refer to response to comment 19-106, below.

19-44 The suggested change to the text of the Draft EIR is unnecessarily precise. The text is adequate as originally written. The point is to initiate and maintain tidal inundation of the marshes. The details would be contained in the Wetland Compensation and Monitoring Plan, which is described in Impact R4.3-5. See also Master Response 10, Marshes, in Section 7.2, Master Responses.

19-45 The use of an aeration or mixing system in the flooded Main Quarry Bowl constitutes new information. Please refer to Master Responses 1 and 7 in Section 7.2 of this document.

19-46 Impacts 4.3-13 and 4.3-15 both identify potential impacts to special status species that may occur if mining continues under the AQP. Since the Quarry has no permits that allow it to “take” special status species (such as an Incidental Take Permit or Habitat Conservation Plan), this potential is considered a significant impact. Impact 4.3-17 identifies a less-than-significant impact to marsh habitat associated with the AQP. The conclusion of less than significant is due to the additional protections of marsh habitat contained in the application for the AQP.

19-47 Please refer to Master Response 10 in Section 7.2 of this document.

19-48 This comment merely confirms information contained in the Draft EIR and requires no response.
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19-49 This comment also confirms information contained in the Draft EIR and requires no response.

19-50 The correct reference is to Mitigation Measure R4.5-2b. The text of the EIR is therefore changed as follows:

*Mitigation Measure R4.4-2b:* The project applicant shall incorporate into the grading and construction specifications provisions requiring that all phases of construction implement best management practices (BMPs) to reduce and eliminate soil erosion and loss of topsoil. The contractor shall implement these BMPs, and the contractor shall be responsible for the inspection and maintenance of the BMPs through all phases of reclamation.

*Mitigation Measure R4.5-2b* in Section 4.5, Hydrology and Water Quality, also contains measures that would serve to further mitigate potential erosion effects.

This and other errata in the Draft EIR are corrected in Master Response 2 in Section 7.2 of this document.

19-51 As previously stated, the proposal to aerate or mix water in the flooded Main Quarry Bowl to avoid water quality problems constitutes new information not included in the application for the ARP. Please see Master Response 1 in Section 7.2 of this document. While currently no source of freshwater to fill the Main Quarry Bowl has been identified, this does not render this alternative infeasible. As pointed out by another commenter (comment 1-3), stratification leading to anoxic conditions in a freshwater reservoir would not be an issue, as long as this would not affect beneficial uses of the reservoir. See further discussion in Master Responses 4 and 7 in Section 7.2 of this document.

19-52 The first paragraph on page 4.6-3 of the Draft EIR is corrected as follows:

*The nearest residences to the project site are the single-family homes and condominiums of the Marin Bay Park development within the Peacock Gap Neighborhood. This development is located immediately north of Cantera Way (the entrance road to McNear’s Beach County Park) near the site’s northern boundary. Other nearby residences include the single-family homes, condominiums along Heritage Drive, and the single-family homes on San Marino Drive and on single-family homes and condominiums along Chapel Cove Drive, north of Point San Pedro Road opposite the Quarry site.*

19-53 County policy is to apply both the policies contained in the old Countywide Plan and also the Countywide Update to projects undergoing CEQA review, if the publication of the Draft EIR came after the Countywide Plan Update was adopted in November of 2007.

19-54 The last paragraph on page 4.6-19 in Section 4.6, Land Use and Planning, notes that, “SMARA was enacted in 1975 to limit new development in areas with significant mineral deposits.”
19-55 As noted in the Draft EIR, Mitigation Measure R4.6-3a is proposed as part of the project. The comment regarding Mitigation Measure R4.6-3b is noted. Regarding Mitigation Measure R4.6-3d, posting notice on the Quarry’s website constitutes notification of the public at large. The comment regarding Mitigation Measures R4.6-5a and R4.6-5b is addressed in the response to comment 19-5 and in Master Response 1 in Section 7.2 of this document.

19-56 The comment regarding Mitigation Measure R4.6-6a is noted. The comment regarding Mitigation Measure R4.6-6b is addressed in the response to comment 19-33. To further clarify Mitigation Measure R4.6-6b, the text is modified as follows:

**Mitigation Measure P4.6-6b:** Quarry operations shall be limited to the levels of intensity extant in 1982, at the time that the Quarry became a legal nonconforming use. This will include the following:

- Maximum annual production shall be limited to the level of production in 1982, i.e., 1,473,000 tons per year;
- Operations shall be limited to those in place in 1982, i.e., noise-generating operations will be limited to daylight hours on weekdays, except during a declared emergency;
- Blasting shall be limited to approximately an annual (calendar year) average of two times per week (104 times per year).

19-57 Phased reclamation is consistent with the requirements of SMARA, particularly Public Resources Code §2772(c)(6), which states that a reclamation plan must include, “A description of, and a plan for, the type of surface mining to be employed, and a time schedule that will provide for the completion of surface mining on each segment of the mined lands so that reclamation can be initiated at the earliest possible time on those portions of the mined lands that will not be subject to further disturbance by the surface mining operation.”

Regarding combining the cumulative impact analysis of the two projects in one impact statement, this is compatible with the CEQA Guidelines requirements for cumulative impact analyses, as discussed in the response to comment 19-13. To further clarify the contribution of each of the two projects to Impact C4.6-7, the text of the impact is modified as follows:

**Impact C4.6-7:** Continuing operation of the Quarry under the proposed Amended Surface Mining and Quarrying Permit and simultaneous phased reclamation grading under the Amended Reclamation Plan would result in continuing incompatibility with neighboring residential and recreational land uses (Significant).

The County has received numerous complaints from residents of the Peacock Gap neighborhood (including Marin Bay Court) regarding noise, blast vibration, dust, soot, and truck traffic from existing mining operations. Such complaints related to
site operations provide evidence that current site operations are incompatible with neighboring residential land uses, regardless of whether SRRQ is meeting existing permit and regulatory standards. While any one of these may be a mere annoyance, together and cumulatively they create a fundamental incompatibility between the Quarry and the surrounding land uses, resulting in a significant, cumulative impact. Mitigation Measures P4.6-6a and b, and measures identified in the Section 4.7, Noise and Section 4.2, Air Quality, would reduce this impact to the extent feasible. However, given the close proximity of the Quarry to the adjacent residential neighborhoods, no feasible measures appear to be available to reduce the incompatibility of land uses during the estimated 15-17 years of quarry operations and phased reclamation grading under the proposed 2004 Amended Reclamation Plan. Although the Quarry use as a legal non-conforming use in a designated Significant Mineral Resource Area renders the use generally consistent with land use policies, the cumulative considerable physical impacts associated with continued long term land use incompatibilities result in a significant unavoidable cumulative impact. Both the ARP and AQP projects would contribute to a cumulatively considerable extent to this impact.

19-58 The use of rubberized element to the barge loading system, and the use of broad-band backup beepers on mobile equipment, are noted in the text of Impact P4.7-5 in the Draft EIR. However, for the purposes of clarification, the text of the Draft EIR on page 4.7-11 is modified as follows:

**Noise Environment Monitoring at Existing Sensitive Receptors**

To establish the existing noise setting of sensitive land uses near the Quarry, independent noise data was collected by ESA as a part of this environmental analysis. Noise monitoring was conducted at six exterior locations during the daytime when activity at the Quarry included excavation, loading of trucks and loading of barges, as well as blasting events at three locations (ST-4, ST-5 and ST-8). Noise monitoring locations are presented in Figure 4.7-3. Table 4.7-4 presents the results of this noise monitoring effort. Noise monitoring records and calculations are presented in Appendix B. It should be noted that noise monitoring conducted by ESA preceded the implementation by the Quarry of several noise reduction measures, including installation of a rubber lining applied to the metal surfaces associated with the barge loading and unloading conveyors; and use of broad-band backup beepers on mobile equipment. These measures have likely reduced noise from Quarry operations at nearby sensitive receptors; noise levels reported in the following section are therefore likely greater than those currently experienced.

19-59 Please refer to Master Response 11. Regarding noise levels for ST-7, please note that in the text of this section of the Draft EIR, all noise levels have been rounded to the nearest whole number.
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19-60 The point of the referenced passage (Vibration Monitoring Data) is to note that monitored blast vibrations have been below the recommended limits of the U.S. Bureau of Mines. The mention of the single monitored event with a PPV .01 in/sec below this limit is for informational purposes only, and does not lead to a conclusion later in the Noise and Vibration section of a significant impact. The history of complaints is not used as a basis for a conclusion of significance with regards to noise or vibration impacts of Quarry operations.

19-61 Impact R4.7-1 is considered significant and unavoidable for the reasons stated in the Draft EIR.

19-62 Please refer to the responses to comments 19-30 and 19-58.

19-63 As noted in the text of Impact P4.7-7, the results of a 1982 report of noise and vibration are used to establish the baseline against which project-related changes are measured.

19-64 The comment apparently refers to an erroneous reference on page 4.7-31, not page 4.7-28. The correct reference, within the “Level of Significance with Mitigation” section on page 4.7-31, is to Impact 4.6-7, not Impact 4.6-1. The text of this section is revised as follows:

**Level of Significance with Mitigation**

The above measures will ensure that blasting at SRRQ will not cause structural damage to nearby residential buildings. These measures will also reduce to the extent practical the disturbing effects of blasting on the Quarry’s neighbors. It is likely, however, that such effects will continue. The level of continuing impact may be considered below the threshold of significance; the inevitable and ongoing disturbance of neighbors is another aspect of the incompatibility of the Quarry with surrounding land uses, as discussed in Impact 4.6-4 4.6-7 in Section 4.6, Land Use and Planning.

Please see also Master Response 2 in Section 7.2 of this document.

19-65 Please see the responses to comments 19-30 and 19-63.

19-66 Please see the response to comment 19-64.

19-67 Please see the response to comment 19-63.

19-68 Impact C4.7-8 is found to be less than significant. Cumulative impacts must be considered in an EIR.

19-69 Comment noted.
19-70 The County finds that Mitigation Measure P4.8-3b is feasible and necessary to reduce Impact P4.8-3 (Transport, storage, and use of explosives could result in accidental explosions or exposure to hazardous substances) to less than significant.

19-71 The following text is added to Page 4.9-4 of Section 4.9, Public Services, Utilities, and Energy:

There are currently two operating septic systems which serve the residential quarters on the project site for which permits were issued in 1983 or later. The systems are both standard gravity systems with leach fields. One of the systems serves two residential quarters, a main house and guest house. There is also a second guest cottage that is served by its own tank and leach field. The Quarry constructed a new caretaker’s residence with septic tank and leachfield that was completed with required County permits in 2007. The operational lifetime for septic systems is generally thought to be 20 years. The septic systems currently serving the site passed an evaluation by the Marin County Environmental Health Services Department in 2004. An application has been filed for upgrades which would include the installation of a new system on the main house.

19-72 Please note that CEQA requires consideration of cumulative impacts. The Draft EIR finds Impact C4.10-3 to be less than significant.

19-73 A cultural resources survey was not performed at the time that ARP82 was being considered for approval in 1982. Furthermore, the circa 1935 U.S. Army Signal House was not yet 50 years old at the time that ARP82 was being considered, and so was not eligible for inclusion on the National Register of Historic Places. The cultural resources survey conducted for this EIR in 2007 identified the Signal House as an historic resource; therefore, its destruction would be a significant impact, and Mitigation Measure R4.12-5a is necessary to reduce this impact to less than significant.

19-74 Please refer to the response to comment 19-13. The referenced discussion of the proposed Haystack Landing facility provided factual information regarding impacts identified in the Draft EIR for that facility.

19-75 The commenter appears to be making an argument that some or all of the alternatives presented in the Draft EIR should be considered infeasible because they may be economically infeasible. No additional information is, however, presented to support this contention.

19-76 Please see the response to comment 19-20.

19-77 The discussion of hydrology and water quality impacts of alternatives and comparison with those of the project are included in the Draft EIR on pages 6-8 and 6-9, and in Table 6-1. These discussions and comparisons meet the requirements of CEQA (CEQA Guidelines §15126.6(d)).
19-78  Please refer to Master Response 4 in Section 7.2 of this document.

19-79  Please see response to comment 19-33.

19-80  The discussion of air quality impacts of the alternatives to the AQP on pages 6-27 and 6-28 notes that the Barge Only Alternative would result in increased emissions from tug boats. That discussion, as well as the discussion of traffic impacts of AQP alternatives on page 6-28 in Chapter 6, Alternatives, are amended as shown below. See also Master Response 4 in Section 7.2, Master Responses.

**Air Quality**

The project is expected to have significant unavoidable air quality impacts, including increased emissions of criteria air pollutants and toxic air contaminants (TACs) that would exceed BAAQMD significance thresholds and pose a health risk to neighbors of SRRQ. The No Project/Status Quo Alternative would likely have similar impacts. The Mitigated Alternative would reduce, but not eliminate these impacts, while the Reduced Alternative can be expected to reduce the severity of air quality impacts associated with Quarry operations further, perhaps below the significance threshold. The Reduced Project Alternative, however, result in the increased use of aggregate materials brought from a greater distance than SRRO (such as Canada), which would have adverse consequences for air quality, including increased emissions of criteria air pollutants, toxic air contaminants, and greenhouse gases both within the Bay Area air basin and beyond.

The Barge Only Alternative would eliminate that portion of air quality impacts associated with use of heavy-duty diesel trucks for transport of materials directly from SRRQ, but would increase the emissions from tug boats. Still, these emissions would be expected to have a lesser health risk impact on Quarry neighbors than emissions from trucks, since the barge loading and transport are more remote from sensitive receptors. The Barge Only Alternative may, however, not result in the elimination of truck trips and truck-related emissions generated by the Quarry overall, but merely their transfer to another location, since the Quarry would likely barge some materials to another facility where they would be transferred to trucks for transport to the point of use. Therefore, the Barge Only Alternative may cause air quality and traffic impacts that are equal to, or possibly greater than, those of the project and potentially result in geographically broader ranging truck traffic, air quality, and other effects in the region beyond Marin County. The elimination of trucks from the Quarry would also eliminate transport of products from SRRO within most areas of Marin not accessible by barge.

**Transportation and Traffic**

The project is not expected to result in significant traffic impacts. The No Project Alternative would result in more truck traffic, and may cause a significant traffic
impact. The Mitigated Alternative would have the same effect as the project, since truck levels are the same. The Reduced Project Alternative would further reduce traffic impacts, and the Barge Only Alternative could be expected to eliminate any local traffic-related impacts of quarrying operations. The Barge Only Alternative may, however, result not in the elimination of truck traffic, but merely the displacement of traffic to another location, since the Quarry would likely barge some materials to another facility where they would be transferred to trucks for transport to the point of use. Therefore, the Barge Only Alternative could result in a significant traffic impact, while the project would have none.

19-81 Project objectives for the ARP are enumerated in Chapter 3, Project Description (page 3-25), based on the applicant’s stated objectives, as they appear in Appendix H (see Volume III).

19-82 Please see the response to comment 19-80 and also Master Response 4 in Section 7.2 of this document.

19-83 This is not a comment on the Draft EIR, but rather a review of legal and administrative processes related to the Quarry’s Surface Mining and Quarrying Permit and Amended Reclamation Plan. This information is also presented in the Chapter 3, Project Description.

19-84 Please see the response to comment 19-12.

19-85 Please see Master Response 3 in Section 7.2 of this document for a response to this comment.

19-86 The particular requirements of SMARA do not supplant or limit the lead agency’s duty under CEQA to conduct a through analysis of impacts associated with proposed reclamation plans. Whether or not an adequate buffer was planned for in the Peacock Gap Neighborhood Plan (see Master Response 9, Land Use Compatibility, in Section 7.2, Master Responses for more on this point), evidence in the record clearly indicates that a conflict currently exists between the Quarry and neighboring land uses, as stated in the Draft EIR, Impact C4.6-7 (Continuing operation of the Quarry… and simultaneous phased reclamation grading… would result in continuing incompatibility with neighboring residential and recreational land uses). Therefore, the conclusion that the proposed ARP and AQP would both make a considerable contribution to a significant cumulative impact is supported.

19-87 Please see the response to comment 19-33.

19-88 The change in physical conditions that underlies Impact C4.6-7 (Continuing operation of the Quarry… and simultaneous phased reclamation grading… would result in continuing incompatibility with neighboring residential and recreational land uses) is the continuation of mining operations for an additional 15-17 years that would occur under
ARP04, as well as reclamation grading that would occur under ARP04. The Air Quality impacts alluded to by this comment appear to be Impact R4.2-1 (phased reclamation grading occurring simultaneously with ongoing mining operations would cause a significant impact), and Impact R4.2-2 (Phase IV reclamation grading, which would occur both during mining and after cessation of mining, would also cause emissions in excess of air quality thresholds of significance). The new project element causing the physical changes described in Impact R4.2-1 is that phased reclamation grading would occur at the same time as mining operations. Impact R4.2-2 only examines the effects of reclamation grading not contemplated in ARP82 and therefore is consistent with CEQA requirements.

19-89 Since ARP04 would enable the Quarry to continue to mine for an additional 15-17 years, the effects of the continuation of Quarry operations beyond that previously contemplated and permitted must be considered in conjunction with past Quarry operations.

19-90 Please see response to comment 19-24.

19-91 Section 4.6, Land Use and Planning, details how and why the proposed projects could exceed restrictions on nonconforming uses, and the physical effects that would result in significant impacts (Impact R4.6-5: Activities associated with the phased implementation of the reclamation plan would conflict with County Code Title 22… restrictions on nonconforming uses; and Impact P4.6-6: The Amended Surface Mining and Quarrying Permit would allow for an intensification of quarry operations beyond 1982 levels….). Therefore, the conclusions regarding significance for these impacts is warranted and the corresponding mitigation measures are required.

19-92 The Draft EIR finds that blast vibrations would cause continued disturbance of neighbors of the Quarry, and that such disturbance would exceed the effects of blasting in 1982 (Impact P4.7-7 in Section 4.7, Noise and Vibration). Therefore the conclusions of significance is warranted and the corresponding mitigation measures are required.

19-93 The selection of alternatives in the Draft EIR is consistent with the CEQA Guidelines with regard to economic feasibility and ability to meet project objectives:

An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives (CEQA Guidelines §15126.6(a); emphasis added).

…the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly ( CEQA Guidelines §15126.6(b); emphasis added).
In the absence of specific information from the applicant demonstrating the economic infeasibility of the alternatives presented in the Draft EIR, it is assumed that they are feasible, even if more costly than the projects and even if they are not capable of meeting all of the projects’ objectives.

Regarding likely environmental effects of alternatives, see also the response to comment 19-80; see also Master Response 4 in Section 7.2 of this document.

19-94 This comment addresses merits of the projects, not environmental effects. Please refer to Master Response 12 in Section 7.2 of this document.

19-95 Please refer to response to comment 21-1; see also comment 19-96.

19-96 This letter from Deputy County Counsel James Flageollet to John Edgcomb, counsel representing the Point San Pedro Road Coalition, is apparently included in support of the commenter’s contentions made in comment 19-95.

19-97 The Reporter’s Transcript of Case Management Conference, Wednesday, April 6, 2005 in the case of Point San Pedro Road Coalition, et al. vs. San Rafael Rock Quarry, Inc., is apparently included in support of the commenter’s contentions made in comment 19-95.

19-98 This comment is preamble to those that follow; the points raised in this comment are more thoroughly stated in the following comments.

19-99 This comment is preamble to those that follow; the points raised in this comment are more thoroughly stated in the following comments.

19-100 Regarding the approach to cumulative health risk impacts presented in the Draft EIR, please refer to the response to comment 19-24, above.

Consistent with OEHHA’s Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (OEHHA, 2003), the health risk assessment uses conservative assumptions regarding emissions, dispersal, exposure, and toxicity to ensure that it does not underestimate the risk to public health from exposure to toxic air contaminants:

OEHHA has striven to use the best science available in developing these risk assessment guidelines. However, there is a great deal of uncertainty associated with the process of risk assessment. The uncertainty arises from lack of data in many areas necessitating the use of assumptions. The assumptions used in these guidelines are designed to err on the side of health protection in order to avoid underestimation of risk to the public. Sources of uncertainty, which may either overestimate or underestimate risk, include: 1) extrapolation of toxicity data in animals to humans, 2) uncertainty in the estimation of emissions, 3) uncertainty in the air dispersion models, and 4) uncertainty in the exposure estimates.

(OEHHA, 2003, p. 1-4; emphasis added)
The assumptions regarding continuous residence and time spent at home, while conservative, are consistent with OEHHA Hot Spot Guidance, and serve both to provide a basis for estimating the cumulative health risk effects of past operations with planned future operations and reclamation, and also to compare the health risks from past operations, as depicted in Figure 4.2-8, with future risks, as depicted in Figure 4.2-5.

With regards to the point that many residences within the areas of highest exposure were not built until the late 1980s or 1990s: while this is true, many residences had been built prior to the beginning of the study period (1982) in the area of exposure above 10 per million, as shown in Figure 4.2-8 in Section 4.2, Air Quality. This includes most of the Peacock Gap Neighborhood and the houses along Point San Pedro Road. Still, to clarify this point, a footnote has been added to Figure 4.2-8, and the text of Impact 4.2-12 is revised as shown below; note that this does not alter the conclusion of “significant and unavoidable” for Impact C4.2-12. In addition, the discussion in this impact of the potential for cumulative chronic and acute impacts is revised for consistency.

**Impact C4.2-12:** Toxic air contaminants emitted from past Quarry operations, in conjunction with planned future operations under the Amended Surface Mining and Quarrying Permit (as well as currently unplanned but reasonably foreseeable future operations), reclamation activities under the Amended Reclamation Plan, and post-reclamation land uses could cause significant cumulative health effects (Significant).

The HRA modeled past exposure to TACs from past Quarry operations from 1982, when ARP82 was approved, through 2007. Emissions were estimated based on known or estimated rates of production and shipment of quarry products, and on published emission factors for the period modeled. The same receptor locations and types used for the modeling of future (AQP and ARP-related) emissions were used for past emissions, though it should be noted that several residences, including those on Heritage Drive and Marin Bay Park Court, were not built until the late 1980s or early 1990s. As with the modeling of future emissions, the modeling of past emissions examined only quarry-related emissions in isolation from regional and other local sources.

As shown in Figure 4.2-8, cancer risks from past operations (1982-2007) were well in excess of the significance threshold of 10 cancer cases per million exposed individuals over a broad area of the neighborhoods around SRRQ. The highest incremental increase in cancer risk (at the MEI, located to the northeast of the Quarry), was 109 cancer cases per million exposed population. Since the area where the MEI is located, that is, in the Marin Bay Park development, was not developed until the late 1980s or early 1990s, no individuals would actually have been exposed to this high a risk. Somewhat lower rates, still in excess of the 10 in a million threshold, were calculated for receptor locations along Point San Pedro Road and throughout the Peacock Gap neighborhood; note in Figure 4.2-8 the area within the 10-50 category. Emissions from quarry operations prior to 1982 were not estimated, nor their health risk effects modeled, but these earlier emissions would have added to
the cancer risk depicted in the figure. The higher rate of cancer risk from past emissions (relative to future risk) is due to the higher rates of DPM emissions from diesel trucks and on-site mobile equipment in the past: as indicated in Figure 4.2-3, a greater portion of the emissions (and therefore the contribution to cancer health risks) occurred earlier in the period modeled, and both the rate of emissions and their contribution to cancer health risks declined over the period modeled. It should be noted that this decline in the emission rates of diesel equipment, and therefore the cancer health effects of exposure, likely mirrored a similar trend throughout the Bay Area region and the entire state (and nation). Thus, it can be assumed that exposure levels and cancer health effects in past years from other sources (non-quarry operations) were also much higher than present levels.

Impact C4.2-9 describes the incremental increase in cancer risk associated with future emissions from the proposed ARP and AQP. As stated in that impact discussion, without mitigation the rate of incremental increase is estimated to be 14.2 additional cancer cases per million exposed individuals at the site of the MEI; with mitigation (Mitigation Measures C4.2-9a, b, and c) the rate declines to 7.4. While this latter figure is below the significance threshold for the future projects, the addition of the risk values for future exposure to the levels calculated for past exposure would result in an increase in the cancer risk in areas already exposed to a rate of over ten additional cancer cases per million exposed population, as well as an increase in the area with this level of exposure, at the site of the MEI for the exposure period 1982-2024. Even with mitigation, therefore, the AQP and ARP projects would make a considerable contribution to a significant cancer health risk that is to cumulative considerable significant cancer health risk. Furthermore, while the ARP currently under consideration would provide sufficient resource for mining through approximately 2024, SRRQ could in the future again seek to amend its reclamation plan to allow for additional mining. It is reasonably foreseeable that the level of operations would be similar to those currently proposed, and that they would result in additional cancer health risk; however, since the rate of DPM emissions will continue to decline (see Figure 4.2-3), the additional cancer risk associated with any future operations beyond that envisioned in the currently proposed ARP would likely be quite small. Taken together, past, current, and reasonably foreseeable future cumulative cancer risks are considered significant. Post-reclamation land-uses are anticipated to include residential, commercial, and open space, as well as the development of a marina. None of these uses and associated transportation are likely to result in emissions of toxic air contaminants in quantities that would cause substantial cancer or non-cancer health risks. However, the possibility of future use of the site for a ferry landing could result in continued exposure of neighbors of the site, as well as future residents of the site, to emissions from marine equipment. While it would be speculative to estimate the level of emissions from future ferry operations, they may be expected to be similar to tugboat emissions associated with Quarry operations.
As part of the HRA, past chronic and acute non-cancer health risks were also modeled, based on information and assumptions regarding past operations for the period 1982-2007. Results were similar to those reached for future chronic and acute effects, as discussed in Impacts C4.2-10 and C4.2-11: the highest acute HI value was also 1.0, and the highest chronic HI value was 0.77 (compared to 0.61 for the future projects). The somewhat higher value for past chronic exposure, relative to future exposure, is due to an assumption of increased effectiveness of future dust control measures under the AQP.

As previously discussed, acute risks are calculated based on the highest 1-hour exposure; exposures below the significance threshold do not combine in a cumulative manner. Chronic effects are based on the highest 1-year exposure. Exposures resulting in an HI below the significance threshold are considered not to cause chronic health risks; therefore, the level of past exposure to quarry emissions does not add to future exposure in a cumulative manner. Since project-related chronic and acute health risks are below significant (see Impacts C4.2-10 and C4.23-11), the cumulative impact is also less than significant.

**Mitigation:** No additional mitigation is available to further reduce the cancer health risks from the current projects or from reasonably foreseeable future projects, beyond those stated in Mitigation Measures C4.2-9a, b, and c. This cumulative impact is therefore considered significant and unavoidable.

The HRA modeling conducted for the Draft EIR assumed use of conventional marine diesel (distillate) fuel in tug boats. Just prior to publication of the Draft EIR, ESA received information from SRRQ that in fact low-sulfur red diesel #2 is used (Peer, 2008). This fuel type has a lower sulfur content than assumed in the model run conducted for the Draft EIR. The HRA results in the Draft EIR therefore reflect higher DPM and SOx emissions from tugs than actually occurs. Use of low-sulfur diesel fuel in the modeling results in emissions estimates of 0.86 tons per year of DPM from tugboats operating within the modeling domain, vs. 1.23 tons per year with use of conventional marine diesel. These corrected emission rates are reflected in the revised text and tables in Section 4.2, Air Quality.

With regard to the breathing rate, the Draft EIR Attachment B of Appendix D incorrectly stated that the HRA used the 95th percentile breathing rate. The 80th percentile breathing rate was in fact used in the analysis in accordance with OEHHA’ Hot Spot Guidance (OEHHA, 2003) and BAAQMD HRA guidelines (BAAQMD, 2005). The text of Appendix D has been corrected to reflect the correct breathing rate used in the HRA analysis.

19-101 Please see the response to comment 2-3.

19-102 The information provided in this comment supports the findings and conclusion of less than significant reached in the Draft EIR with regard to health risks posed by crystalline
silica emissions (see Impact C4.2-10: Reclamation activities… and Quarry operations… would result in emissions of toxic air contaminants, including crystalline silica, that would increase chronic health impacts). The results of the applicant’s laboratory analysis of duplicate rock samples indicate a somewhat lower crystalline silica content of Quarry rock than found in the laboratory analysis of samples taken by ESA, but does not call into question the conclusions reached in the Draft EIR regarding health risk from crystalline silica exposure.

19-103 The calculations of greenhouse gas emissions associated with Quarry operations presented in this comment and in the referenced tables (see comment 19-104) differ from those in the Draft EIR (which tend to use more conservative assumptions, resulting in higher emissions). Comparison of greenhouse gas emissions from SRRQ with emissions related to transport from other quarries is considered speculative and beyond the scope of the EIR. See the response to comment 19-80, above, and also Master Response 6 in Section 7.2 of this document.

19-104 This comment includes references used by Environ in their comments (comments 19-98 through 19-103) as well as tables referred to in several of those comments.

19-105 This comment is an introduction to those that follow and notes that in general the commenters found the Biological Resources section to be ‘…thorough and largely accurate…’ and that the commenters did not ‘…..substantially disagree with the nature of the impacts set forth or with their identified significance.’

19-106 Some of the suggested changes to the biological resources setting section in Section 4.3 of the Draft EIR are unnecessarily precise. The text is generally adequate as originally written. The point is to convey to the reader, decision-maker, layperson, and scientist alike, the biological resources setting, as well as impacts generated by the project, and proposed mitigation measures, so that the reader can come to an informed opinion about impacts of the proposed project. The Draft EIR, as the commenters themselves note in comment 19-105, generally accomplishes its mission.

The commenter states that current standard scientific and English names for wildlife should be used, and suggests several changes to the nomenclature used in the Draft EIR. For many biological resources, however, there is more than one ‘standard’ source, and there is no universally accepted nomenclature. That said, we will address many but not all of the sub-comments relating to name changes that are grouped under comment 19-106. Some outdated species names were used in the Draft EIR, and where the EIR did not provide a scientific name for a species we provide it below. However, in cases where we use a different authority or source that disagrees with the commenter’s, we will not make the suggested changes. Using the same format the commenter used, the text of the biological resources Setting section in Section 4.3 of the Draft EIR is revised, below.
The commenter also states that a portion of the eucalyptus woodland in the SW Quadrant was omitted from Figure 4.3-1 and was shown as Barren/Ruderal instead. As of ESA’s site visit of August 6, 2006, this eucalyptus stand had been removed.

Text revisions appear below:

**Page 4.3-5: Non-native grassland.** ..... Non-native annual grasslands, as well as the mixed perennial grasslands described below, can provide refuge for reptiles such as western fence lizard (Sceloporus occidentalis), southern alligator lizard (Elgaria multicarinata), and gopher snake (Pituophis catanifer melanoleucus) as well as grassland birds such as mourning dove (Zenaida macroura).

**Page 4.3-5: Coastal scrub.** ......The understory can include mugwort (Artemisia douglasiana), dudleya (Dudleya sp.) and indian paintbrush (Castilleja affinis ssp. affinis), with native perennial grasses, such as foothill needlegrass, and ferns, including goldback fern (Pentagramma Pityrogramma triangularis) occurring in openings in the overstory.

Coastal scrub provides nesting and foraging habitat for various birds, including spotted towhee (Pipilo maculatus) and California towhee (Pipilo crissalis), common bushtit (Psaltrirparus minimus), western scrub jay (Aphelocoma coerulescens), and California quail (Callipepla californica).

**Page 4.3-6: Coast live oak woodland.** ......In general, oak woodland communities in the area can support an abundant assortment of common reptiles, amphibians, and small mammals such as western skink (Eumeces skiltonianus), Pacific chorus frog (Pseudacris Hyla regilla), southern northern alligator lizard (Elegaria coerulea), gopher snake (Pituophis melanoleucus), California Pacific slender salamander (Batrachoseps attenuatus), and dusky-footed woodrat (Neotoma fuscipes). Resident and migratory bird species found in oak woodlands include spotted towhee, brown creeper (Certhia americana), oak titmouse (Baeolophus Parus inornatus), Hutton’s vireo (Vireo huttoni), western scrub jay, northern flicker (Colaptes auratus), dark-eyed junco (Junco hyemalis), downy woodpecker (Picoides pubescens), and orange-crowned warbler (Vermivora celata). These areas may also provide important roosting habitat for Myotis bat species, which can roost in hollow trees and crevices in bark. Raptors that breed and nest in local woodland communities include red-tailed hawk (Buteo jamaicensis), sharp-shinned hawk (Accipiter striatus), Cooper’s hawk (Accipiter cooperii), white-tailed kite, and others. The woodlands at SRRQ are known to support wild turkey (Meleagris gallopavo) and California mule deer (Odocoileus hemionus californicus).

**Eucalyptus woodland.** ......Eucalyptus may also provide roosting and nursery sites for several bat species, including fringed myotis (Myotis thysanodes) and long eared myotis (Myotis evotis), as well as Monarch butterflies (Danaus plexippus).
**Freshwater seep.** Seep habitat with perennial water can provide an important source of water for animals during the dry season, including amphibians such as slender salamander and Pacific chorus frog, California mule deer, raccoon (Procyon lotor), and a wide variety of birds.

**Page 4.3-7: Freshwater marsh.** These marshes support cattails (Typha latifolia), pennyroyal (Mentha pulegium), tules (Scirpus sp.), and arroyo willow (Salix lasiolepis). Species commonly associated with freshwater marsh include pied-billed grebes (Podilymbus podiceps), great blue herons (Ardea herodias), great egrets (Ardea alba), American coot (Fulica americana), black phoebe (Sayornis nigricans), red-winged blackbird (Agelalus phoeniceus), marsh wrens (Cistothorus palustris), song sparrows (Melospiza melodia), raccoons, and California voles (Microtus californicus).

**Page 4.3-8: Brackish marsh and salt marsh.** Marsh vegetation in the SRRQ may provide nesting and foraging opportunities and cover for water birds and small mammals, including mallards (Anas platyrhynchos), green-winged teals (Anas crecca), great blue herons, great egrets, marsh wrens, San Pablo song sparrows (Melospiza melodia samuelis), red-winged blackbirds, raccoons (Procyon lotor), and California voles. Raptors that are typical of brackish marsh habitats include northern harrier (Circus cyaneus), red-tailed hawk, white-tailed kite, and American kestrel. Recent protocol-level surveys for California clapper rail (Rallus longirostris obsoletus) were carried out in the SRRQ marshes (ISP, 2004) and the species was not detected. California black rail (Laterallus jamaicensis) do not generally occur in smaller marshes in close proximity to urban uses (PRBO, 2002).

**Seasonal wetland.** There are five small seasonal wetlands located at SRRQ. These are shown on Figure 4.3-1 and are located in the northwestern corner of the property, adjacent to the bricky road.

**Page 4.3-8: Open water.** The commenter has comments numbered 1 through 5 under this heading. Responses to each are as follows:

1. The heading on p. 4.3-6 is revised as follows for clarity:

   **Freshwater Wetland and Open Water Habitat**

2. & 5. The description of open water habitat and the scientific name of California red-legged frog are revised as follows:

   Open water habitat occurs in the process ponds in the NW Quadrant of SRRQ. These ponds likely provide habitat for aquatic invertebrates and may provide habitat for California red-legged frog (*Rana aurora*, = *R. aurora draytonii*) and northwestern pond turtle (*Actinemys marmorata marmorata*). These ponds also likely provide foraging habitat for bats and water birds. While California red-legged frog would not be expected to use aquatic habitat located at the bottom of the Main
Quarry Bowl in the SE Quadrant due to the extreme disturbance that occurs there, open water habitat also occurs in a process water pond located in the SW Quadrant (see Figure 4.3-1). This water body is unvegetated and surrounded by highly disturbed barren and ruderal habitat, with active mining currently taking place on South Hill to the west. Even so, the species has been observed using similar habitat under similar conditions and therefore the use of the unvegetated process water pond in the SW Quadrant by California red-legged frog cannot be ruled out.

3. & 4. The commenter also states that they mapped five non-jurisdictional open water ponds in the NE and SE Quadrants. ESA has mapped all of the open water ponds that we located during our site visits in Figure 4.3-1 in Section 4.3, Biological Resources. Of the two ponds mapped by LSA in the NE Quadrant, ESA mapped one as a seasonal wetland (see Figure 4.3-1) and found no sign of the other. ESA noted no ponds in the SE Quadrant during site surveys (with the exception of the Main Quarry Bowl) and examination of recent aerial photos shows no ponds currently in that area.

The following additional text changes are made pursuant to this comment:

Page 4.3-9: Open Water Estuarine Habitat. ...... Non-native fish species in the estuary include striped bass (Morone saxatilis), largemouth bass (Micropterus salmoides), threadfin shad (Dorosoma petenense), and yellowfin gobies (Acanthogobius flavimanus).

Page 4.3-11: California Wetland Definition. The commenter states that discussion of State regulatory policy should not be discussed under a heading (Waters of the United States on p. 4.3-9) that implies discussion of federal policies. The Draft EIR is not discussing policies here at all but definitions. The heading on p. 4.3-9 is revised as follows to provide clarification on this point:

Waters of the United States and of the State: Definitions

Page 4.3-12: Special-status Species. The commenter has several comments under this heading. Responses to each are as follows:

1. The commenter points out that Table E-1 is incorrectly cited throughout the Special-status Species section. The section is revised to correct this as follows on p. 4.3-12:

The special status species list presented in Table E-1 A-1 in Appendix E includes species for which potential habitat (i.e. general habitat types) occurs within or in the vicinity of the various project sites. Species determined to have low potential to occur at SRRQ are listed in Table E-1 A-1 in Appendix E with the reasoning behind the determination and are not expected to occur at SRRQ. Species observed or with a moderate to high potential to occur at SRRQ are discussed in detail below.
Species Assessed in Detail

Potential impacts of the project on special status species were assessed based on the literature review, professional judgment, and the following criteria:

1) A determination of susceptibility. This determination is a three-level process that evaluated for each species: a) potential occurrence in the study area (generally, the terrestrial and aquatic habitats of the project site); b) potential occurrence within the project footprint; or, c) absence from either the study area or proposed construction sites. If the species was determined unlikely to be found in the study area, for example, if no potential habitat exists for the species in the project vicinity, then the species was given no further consideration.

2) If a species was determined to have the potential to occur in the project study area, further analyses were made of life history and habitat requirements, as well as the suitability of habitat for the species found within the study area or its immediate vicinity. The results of this determination for each species are provided in the “Potential for Occurrence” column of Table E-1.4 in Appendix E.

3) If suitable habitat was determined present within the proposed project vicinity and the species has been documented as observed within the project area or has at least a moderate potential to occur, additional analysis considered whether the species would be impacted by the project. Both direct effects (e.g., displacement of habitat) and indirect effects (e.g. noise) were considered. In addition, life history and habitat requirements were evaluated to ascertain the likelihood and severity of impact.

Of the special-status plants and animals presented in Table E-1.4 in Appendix E, along with the regulatory basis for their status, only the following species, which were observed or determined to have a moderate to high potential to occur within the project vicinity, were fully considered in the impact analysis:

2. Although general habitat types that are noted as supporting special-status plants may occur at a project site, it does not necessarily follow that they actually provide suitable habitat for a given species. There are many reasons that a grassland may not support a specific plant—for example, annual grasslands with a dense cover of annual grasses and/or a thick buildup of thatch rarely support more than a few, if any, native annual species because most native annuals cannot germinate or compete for light and nutrients under such conditions. On the other hand, native bulbiferous plants may persist for quite some time under such conditions, but even these tend to disappear from sites that no longer resemble historical conditions. By the same token, a densely canopied oak woodland or scrub stand is highly unlikely to support understory species that cannot tolerate shaded conditions. While we agree that a species may be present on a site, even though no nearby occurrences have been documented, or the site is outside its known distribution, there must still be suitable habitat for the species at the site in order for it to be present. While we use certain criteria to evaluate the potential for occurrence of a given species, these criteria are not considered independent from one another, as the commenter’s analysis suggests. In addition, we consider other factor’s such as the dates of nearby occurrences (are they recent or historical?) and the actual
nature of site disturbances. There are very few special-status plant species that occur in disturbed areas—most seem to require relatively intact, native plant communities. Our final determinations of potential for occurrences come out of a synthesis of all of these considerations. Therefore, we stand by our determinations as to whether or not suitable habitat is present and do not feel it necessary to require specific surveys for all of the plant species included in Table E-1.

3. See above response.

4. The commenter is incorrect: San Francisco gumplant (Grindelia hirsutula var. maritima) does not occur in brackish or salt marsh habitat. The species occurs instead on sandy or serpentine soils on open coastal bluffs and slopes in scrub and grassland habitat (see CNPS Online Inventory and CNDB). Nonetheless, because these general habitat types do occur within the project area, Table E-1 is revised below under the response to comment 19-114.

The commenter further asserts that surveys should be required for this species. ESA disagrees, there are few areas of potential habitat available and these were all inspected, either by LSA biologists and/or by ESA’s biologist. The species was not observed and, as it is a perennial species, is unlikely to have colonized the project area in the intervening time period.

Page 4.3-24: State Policies and Regulations. Comment noted. There is no standard for the information included in the Regulatory Setting section of an EIR. The language used in the Draft EIR is consistent with the current standards of practice for EIRs and is adequate.

Page 4.3-24: Bay Conservation and Development Commission. Comment noted. See above.

19-107 This comment suggests development of a ‘Biological Impacts Map.’ The text in the setting, impact statements, and mitigation measures adequately describes the locations of biological resources and the impacts described. A map is unnecessary.

19-108 See response to comment 19-106 for comments relating to surveys for all plant species listed in Table E-1.

Depending on the size of the mitigation site and assuming high quality installation and site maintenance, it is reasonable and customary to require a survey to ascertain the absence of invasive plant species. This is a typical California Department of Fish and Game requirement. Mitigation Measure R4.3-3c is revised to define the term ‘invasive plant species’ as follows:

- A five-year restoration mitigation and monitoring program will be developed and implemented. Appropriate performance standards will include, but are not limited to: a 75 percent survival rate of restoration plantings or plant cover; absence of invasive plant species (any species listed on the California Invasive Plant Council’s California Invasive Plant Inventory); and a functioning, self-sustaining plant community at the end of five years.
Mitigation Measure R4.3-4e is revised to define the term ‘invasive plant species’ as follows:

**Mitigation Measure R4.3-4e:** The project proponent shall develop and implement a five-year monitoring program for any required replacement plantings, as specified in Mitigation Measure R4.3-4c. The performance standards for tree replacement include all of the following: 75 percent survival rate of restoration plantings; absence of invasive plant species (any species listed on the California Invasive Plant Council’s California Invasive Plant Inventory); and self-sustaining trees at the end of five years. If these criteria are not met, the applicant shall re-plant and success shall again be assessed after five years.

The commenter suggests a heading change in the following Impact Statement for clarification and it has been revised as follows:

**Impact R4.3-5:** Reclamation activities as well as post-reclamation development could result in substantial adverse effects on wetlands and waters of the U.S. under the jurisdiction of the Army Corps of Engineers, waters of the State under the jurisdiction of California Department of Fish and Game or the Regional Water Quality Control Board, and waters and land under Bay Conservation and Development Commission and State Lands Commission jurisdiction, and would be inconsistent with standards established for the Baylands Corridor in the Countywide Plan update (Significant).

As described above in the biological resources setting, a variety of wetlands and other waters of the U.S. under the regulatory jurisdiction of the USACE, CDFG, RWQCB, BCDC, and the State Lands Commission occur at or in the immediate vicinity of SRRQ. A number of proposed activities under ARP04 have the potential to impact jurisdictional waters at SRRQ. Impacts could include the following:

**Shoreline Work and Tidal Open Water Area**

Any work along the shoreline and within 100 feet inland of the mean high tide line would be subject to restrictions imposed by BCDC. Reclamation work, primarily in Phase 4, will involve constructing the future channel and connecting the Main Quarry Bowl to the Bay, demolition of buildings and extensive grading in the SE Quadrant within BCDC shoreline jurisdiction. Impacts would primarily consist of potential adverse effects on water quality from sedimentation or other debris during grading and dredging, as well as during construction of new structures and roads. ARP04’s “Standards for Protecting Sensitive Habitats” include maintaining a 100 foot setback for post-reclamation commercial activity adjacent to the water in areas not currently part of the barge loading, long dock, and brickyard activities.

Tidal open water areas in and around SRRQ fall under the jurisdiction of BCDC, USACE, and the State Lands Commission. Construction activities that occur within
open water areas could result in impacts to water quality from dredging or pile driving activities associated with modification of existing piers and installation of new in-water structures, such as the proposed marina and ferry terminal. Potential impacts include sedimentation in the Bay adjacent to the construction areas.

**Diked Tidal Marshes**

Under all four reclamation phases, potential impacts could include discharge of fill or eroded sediment into wetlands as well as potential discharge of toxic materials. The NW Quadrant salt marshes are currently cut off from tidal influence, as they likely have been for over 100 years, and have undergone conversion to brackish marsh in some areas, especially at their eastern end, as the only hydrologic input consists of fresh water....

The commenter further suggests a listing of potentially jurisdictional freshwater features that would be directly removed or altered by the project on p. 4.3-33. The Draft EIR already mentions some of these features. Since this is a programmatic analysis and the Draft EIR suggests measures to avoid and minimize impacts to wetlands it may be possible that some of these features will be avoided during reclamation.

With regards to the feasibility of setbacks, encroachment into the setbacks would result in inconsistency with Countywide Plan policies, as well as the potential for significant biological impacts. The Board of Supervisors cannot approve a project that is inconsistent with Countywide Plan policies. Therefore, if aspects of the proposed Amended Reclamation Plan would encroach into the setbacks, then the Plan would have to be re-written to ensure that it could be approved.

19-111 With respect to Mitigation Measure R4.3-8 the commenter states that all open water areas (with the exception of the Main Quarry Bowl), whether they are vegetated or not or are located in active mining areas should be included in red-legged frog habitat assessments and surveys. See response to comment 19-106. In addition, Impact and Mitigation Measure R4.3-8 are revised as follows:

**Impact R4.3-8:** Reclamation activities conducted in the vicinity of the process water ponds in the NW and SW Quadrants have the potential to adversely impact California red-legged frog (Significant).

Reclamation activities as well as post-reclamation development occurring in the vicinity of the process water ponds in the NW and SW Quadrants have the potential to impact California red-legged frog (CRLF), should they be present at SRRQ. ARP04 includes surveys for CRLF in its “Standards for Preserving Sensitive Habitat Areas,” to be conducted prior to filing for grading permits for each reclamation phase, as well as undefined setbacks to be established in the site’s Development Plan. Mitigation Measure R4.3-8b details the CRLF survey procedure and setbacks that would be required by USFWS if frogs were found to be present or assumed to be present during reclamation as well as development.
Mitigation Measures Proposed as Part of the Project

Mitigation Measure R4.3-8a: ARP04 includes surveys for CRLF in its “Standards for Preserving Sensitive Habitat Areas,” to be conducted prior to filing for grading permits for each reclamation phase, as well as undefined setbacks to be established in the site’s Development Plan.

Mitigation Measures Identified in this Report

Mitigation Measure R4.3-8b: The applicant shall conduct reclamation and post-reclamation development activities in and around the process water ponds in the NW and SW Quadrants in a manner that avoids take of CRLF through surveys to determine whether the species is present, and, if so, to reduce the risk of take of individuals of the species, as specified below. Specifically, the following measures shall be implemented:

- The project proponent shall retain a qualified biologist to conduct a habitat assessment for CRLF according to U.S. Fish and Wildlife Service (USFWS) guidelines prior to filing for grading permits for Reclamation Phase 1. The habitat assessment shall be submitted to USFWS for review. If, following the review of the habitat assessment, USFWS recommends protocol-level field surveys, then the project sponsor shall conduct protocol-level field surveys for CRLF within aquatic habitat that provides potential breeding habitat (the process water ponds in the NW and SW Quadrants) on the project site.

19-112 Please see response to comment 19-106.

19-113 With respect to Mitigation Measure P4.3-13 the commenter states that all open water areas (with the exception of pond in the Main Quarry Bowl), whether they are vegetated or not, or are located in active mining areas, should be included in California red-legged frog habitat assessments and surveys. See response to comment 19-106. In addition, Impact and Mitigation Measure P4.3-13 are revised as follows:

Impact P4.3-13: Continued operations at the Quarry under an Amended Surface Mining and Quarrying Permit could adversely affect California red-legged frogs should they occur at the Quarry site (Significant).

The two process ponds in the NW and SW Quadrants (shown as “Freshwater marsh” and “Open water” in Figure 4.3-1) provide aquatic habitat and freshwater emergent marsh that may support California red-legged frog (CRLF). Other areas mapped as open water on Figure 4.3-1 do not support emergent vegetation and are therefore not considered suitable habitat for CRLF. ARP04 acknowledges the potential presence of CRLF in the ponds and states that the ponds will continue to be used for process water as required by Quarry operations. Currently none of the process ponds are used for Quarry operations. Water is pumped from the large pond in the southeast corner of the NW Quadrant to be used in McNear’s Brickyard operations. Although the pumps are screened, pumping of water out of the ponds could result in entrainment and mortality of CRLF larvae, tadpoles, and adult frogs should the
screens not be maintained on a regular basis and fail. The ponds are fed by direct precipitation and runoff. Although the Quarry has BMPs in place, such as hay wattles and silt screens, to protect the quality of water entering the ponds and the marshes, runoff could still result in the introduction of sediment or toxins that could have adverse effects on all life-stages of CRLF. Existing Quarry and brickyard operations do not entail the removal of cattails, tules, and other freshwater marsh vegetation occurring along the margins as part of pond maintenance. However, such actions might be necessary during future operations in order to maintain water capacity, which could result in direct mortality of frogs and reduce available cover, increasing their chances of predation. Since these actions have the potential to result in significant adverse impacts on CRLF, Mitigation Measure P4.3-13 is specified below to reduce those impacts to less than significant levels.

**Mitigation Measures Proposed as Part of the Project**

None.

**Mitigation Measures Identified in this Report**

**Mitigation Measure P4.3-13:** The applicant shall conduct Quarry operations in a manner that avoids take of California red-legged frog. This mitigation measure shall be implemented through the following:

- As a condition of approval of the AQP by the County, and prior to any site disturbing activity within 300 feet of the ponds or fresh water marsh, the applicant shall retain a qualified biologist to conduct a habitat assessment for CRLF according to U.S. Fish and Wildlife Service (USFWS) guidelines. The habitat assessment shall be submitted to USFWS for review. If, following the review of the habitat assessment, USFWS recommends protocol-level field surveys, then the project sponsor shall conduct protocol-level field surveys for CRLF within aquatic habitat that provides potential breeding habitat (the process ponds in the NW and SW Quadrants) on the project site. The project proponent shall provide the County with the results of the habitat assessment, USFWS review, and protocol-level surveys, if required, prior to any site disturbing activity within 300 feet of the subject areas.

- If no CRLF are found during the habitat assessment or protocol level surveys, then with the concurrence of USFWS, no further mitigation shall be required.

- If, as a result of the habitat assessment or protocol level surveys, CRLF are found to inhabit the process ponds in the NW or SW Quadrant, the project proponent shall initiate informal consultation with the USFWS to determine the need for formal consultation and preparation of a Biological Assessment and Biological Opinion (required by the Federal Endangered Species Act). Consultation will consider whether or not continued use of the process ponds in the NW and/or SW Quadrants is possible without take of CRLF and whether or not a take permit would be required for continued use.
Mitigation Monitoring and Reporting

Draft Mitigation Monitoring Measure P4.3-13: The Department of Public Works shall verify that a CRLF habitat assessment and protocol-level surveys, if required, have been completed and reviewed by USFWS prior to site disturbing activity within 30 feet of the three process water ponds or the freshwater marsh.

**Level of Significance after Mitigation**

Implementation of Mitigation Measure P4.3-13 will mitigate potential impacts on CRLF to less than significant levels.

19-114 The commenter points out several errors in Table E-1 in Appendix E, which is revised as follows:

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Listing Status</th>
<th>Potential for Species Occurrence Within the Project Area</th>
<th>Period of Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ANIMALS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>California tiger salamander</td>
<td>Ambystoma californiense</td>
<td>FE/CSC</td>
<td>Wintering sites occur in grasslands occupied by burrowing mammals; breed in ponds and vernal pools</td>
<td>Winter rains and March-April</td>
</tr>
<tr>
<td>Short-tailed albatross</td>
<td>Diomedea albatrus</td>
<td>FE/--</td>
<td>Pelagic bird with breeding colonies limited to 2 Japanese islands.</td>
<td>June-October</td>
</tr>
<tr>
<td>Long-eared myotis</td>
<td>Myotis evotis</td>
<td>FSC/--</td>
<td>Inhabits woodlands and forests up to approximately 8,200 feet in elevation; roosts in crevices and snags</td>
<td>March–August</td>
</tr>
<tr>
<td>Fringed myotis</td>
<td>Myotis thysanodes</td>
<td>FSC/--</td>
<td>Inhabits a variety of woodland habitats, roosts in crevices or caves, and forages over water and open habitats</td>
<td>March–August</td>
</tr>
<tr>
<td><strong>PLANTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>San Francisco gumplant</td>
<td><em>Grindelia hirsutula var. maritima</em></td>
<td>--/--/List 1B.2</td>
<td>Occupies sandy or serpentine soils on coastal bluffs and slopes in coastal scrub or valley and foothill grassland.</td>
<td>June-September</td>
</tr>
</tbody>
</table>

2 Key to listing status codes can be found at the end of Table E-1.
19-115 This section of the comment letter provides the references the commenters used in their review of the Draft EIR.

19-116 This comment and the one that follows respond to a peer review, conducted by Coast and Harbor Engineering (CHE) as part of the EIR analysis, of the Harbor Feasibility Study prepared by Moffat and Nichols Engineers (M&N) on behalf of the applicant. The peer review is included as Appendix I in Volume III. CHE prepared responses to comments 19-116, and 19-117. The individual comments within the table that comprises most of comment 19-116 and all of comment 19-117 are numbered for ease of reference; responses refer to these numbers, summarize each “item,” and provide a response.

CHE reiterates that we agree, as we did during the original review, with the major conclusions presented in the M&N Feasibility Study Report. Specifically, CHE agrees that construction of the marina is technically feasible; however, the M&N report contains uncertainties and speculative information rendering it insufficient to support final design of the marina. It is assumed that additional details on design of the marina will be provided as part of the Final Development Plan, which is due to be submitted by the applicant three years prior to the anticipated cessation of mining.

**Item 1 - Jetties would not be expected to negatively impact adjacent shorelines.**

CHE does not argue with the M&N statement that significant negative impacts to the adjacent shorelines are not likely to occur due to construction of the entrance jetties. However, for a project of this magnitude it should be expected that at least some very basic quantification of these predictions based on observations of beach material sizes, wave conditions, etc, should be provided prior to design and construction. In addition, several contradictory statements in the M&N report should be removed to avoid confusion.

For example, the following statement is from the original M&N report: “The sand and mudflats immediately adjacent to the proposed entrance channel will not migrate into the entrance channel as long as short entrance jetties are constructed on either side of the proposed entrance”. One may conclude that if no short jetties are constructed, sand and silt will migrate to the entrance channel and subsequently be removed from the system by dredging operations. If sand migrates into the entrance channel then this is evidence of possible impacts to shoreline stability.

Another example of a contradictory statement relates to the description (in the original M&N report) of formation the mudflats in Reach 3 and 4: “Most of sediment deposition within Reaches 3 and 4 is the suspended sediment from the water column”. This statement conflicts with the M&N statement: “The jetties are recommended to prevent mudflat migration from reaches adjacent to the entrance.” Jetties will not significantly alter the deposition of fine sediment from the water column, and thus will not preclude migration of mud flats.
Item 2 - The sedimentation rate in the entrance channel is expected to vary from several inches to about one foot per year.

CHE concurs with M&N estimates that sedimentation rates seaward from the dredged channel (deeper than approximately 10 ft, MLLW, where the depth difference is only 2 feet) would be in the range of several inches to one foot per year. However, where (and once) the dredged cut occurs, the rate of sedimentation will increase due to slope adjustment. Specifically, greater sedimentation should be expected in the channel near the tips of the jetty (at original depth 5 ft, MLLW). At the tip of the jetties there will be a 7-foot depth difference between the channel and surrounding areas, which as M&N noted experience strong tidal currents moving along the mudflats (transporting significant mud volumes), and these currents move directly across the channel. This situation will result in increased sedimentation, particularly during the first several years due to the channel slope adjustment process. This last effect (channel slope adjustment) is well known and has been observed in the majority of newly dredged channels. CHE believes that increasing the sedimentation rate estimates for the entrance channel to the marina does not compromise marina feasibility.

Item 3 - Harbor water quality can be maintained by preventing the discharge of pollutants into the harbor basin through the use of recognized Best Management Practices (BMPs).

CHE’s comment regarding water quality was related not to runoff, but to the stratification issue that M&N notes at the end of their response. We understand thorough analysis of this factor is out of the scope of M&N’s work at this time. Please refer to Master Response 7 in Section 7.2 of this document for more information on this point.

Item 4 - A portion of the increased costs associated with marina float and anchoring system construction and maintenance will be offset by the lack of initial and future maintenance dredging requirements.

It appears that M&N agrees with CHE’s comment.

Item 5 - The existing quarry product loading pier could be modified to serve as a passenger loading facility for commuter ferry service within San Francisco Bay.

It appears that M&N agrees with CHE’s comment that information in the M&N report is insufficient for evaluation of the possible modification of the loading pier for use as a commuter ferry terminal. It is assumed that the feasibility of a commuter ferry terminal will be considered at the time of preparation of the Final Development Plan for post-reclamation use of the site.

19-117 The following responses were prepared by Coast and Harbor Engineering (CHE); see the introduction to the prior response.
Item 6 - The average hourly wind speed at SRRQ is 11 mph.

It appears that M&N agrees with CHE’s comment that insufficient information was presented on wind data in the report to allow its use for any purpose, including boating feasibility, since no boating feasibility analysis was presented using this information. This is another topic that will have to be further investigated in conjunction with preparation of the Final Development Plan for post-reclamation use of the Quarry site.

Items 7-10: wind and wind waves.

Same response as Item 6. These are all environmental parameters that are presented without any basis or source, and are not used in any type of analysis. These topics will have to be further investigated in conjunction with preparation of the Final Development Plan for post-reclamation use of the Quarry site.

Item 11 - The dredged material is characterized as mostly silt or clay, which indicates that no active sand transport processes (either longshore or cross-shore) occur in the vicinity.

CHE concurs with M&N that the lack of sand in the dredged berth at the site may be an indicator of the lack of sand transport at the ambient depth surrounding the berth. However, this observation (lack of sand in dredged berth) does not provide information regarding cross-shore sediment transport.

Item 12 - The coarser material on the beach is likely a relic of artificially placed fill material, and some of it may also be coming from erosion of the embankments which is transported around the point by the predominant south waves.

It appears that M&N agrees with CHE’s comment regarding contribution from armoring effect on the formation of coarse beach material.

Item 13 - The sand and mudflats immediately adjacent to the proposed entrance channel will not migrate into the entrance channel, as long as short entrance jetties are constructed on either side of the proposed channel. The proposed jetties should extend to a depth of approximately 5 feet below MLLW (8 feet below NGVD).

CHE does not have sufficient information to agree or disagree with the M&N report statement regarding mechanics of mudflats migration into the channel, or the importance of extending the jetties to depth 5 ft (MLLW). However, M&N states that mudflat formation and migration in the area are mostly due to suspended sediment deposition. If that is the case, then construction of the jetties cannot be justified because they will not prevent mudflat migration into the channel. M&N should clarify this contradiction.

Item 14 - The proposed jetties will not cause an adverse effect on the adjacent shoreline.

Please see Item 1.
Item 15 - Since the water depths are so great within the harbor basin, the opposite may be preferable (minimize the size of the entrance channel so as to keep currents high enough to limit sediment deposition from occurring within the entrance channel).

It appears that M&N agrees with CHE’s comment that channel dimensions (width and also depth) should take into account the water quality effects in the marina.

Item 16 - A design entrance channel water depth of 12 feet below MLLW (15 feet below NGVD), 2H:1V side slopes, and an entrance channel width of 75 feet at the design depth are recommended.

It appears that M&N agrees with CHE’s comment that channel dimensions (width and also depth) should take into account the water quality effects in the marina.

Item 17 - The maximum tidal current is estimated to be approximately 0.67 feet/second in the entrance channel.

It appears that both CHE and M&N agree that information provided on current velocities in the M&N report is limited and does not allow any sediment re-suspension analysis. CHE understands this was beyond the scope of M&N’s analysis and suggests evaluation of numerical modeling results developed as part of the EIR (see Appendix I in Volume III), or more detailed sedimentation studies, prior to design and construction of the entrance channel.

Item 18 - The associated maximum bottom shear stress (the force per unit area exerted by tidal currents over the bottom) is estimated to be 0.00082 lbs/ft$^2$.

It appears that both CHE and M&N agree that estimated shear stress in the M&N report may not be a reliable value for analysis of sedimentation/scouring processes in the channel. CHE understands this was beyond the scope of M&N’s analysis and suggests evaluation of numerical modeling results developed as part of the EIR, or more detailed sedimentation studies, prior to design and construction of the entrance channel.

Item 19 - For typical San Francisco Bay mud, the critical shear stress for deposition (the minimum amount of shear stress required to keep the sediment particles in suspension) ranges from 0.001~0.002 lbs/ft$^2$ and the critical shear stress for erosion (the amount of shear stress required to initiate bottom sediment particle motion) is usually greater than 0.002 lbs/ft$^2$.

CHE concurs with the M&N response that the EIR ADCIRC modeling may be a useful tool to determine bottom shear stress in the channel. CHE understands this was beyond the scope of M&N’s analysis and suggests evaluation of numerical modeling results developed as part of the EIR, or more detailed sedimentation studies, prior to design and construction of the entrance channel.
Item 20 - A maximum wave height of 5 feet could occur in the vicinity of the project site.

A statistical definition of “maximum wave height” typically is required for conditions of even depth-limited waves. A statistical definition allows for matching height with an appropriate wave period and also for evaluating risks associated with the project (project design life). In addition, the entrance channel depth is sufficient to allow 5-ft waves to penetrate inside without breaking. Detailed wave information with appropriately defined return periods should be developed, including transformation into the harbor, prior to design and construction.

Item 21 - The total volume for the proposed harbor is estimated at 12,570 acre-feet below NGVD datum.

M&N agrees with CHE’s comment.

Item 22 - The diurnal tidal prism (the volume difference between the MHHW and MLLW) is calculated as 352 acre-feet.

CHE agrees that it is typical for coastal engineers to use tidal stations with longer records. However, the large difference between CHE’s estimate and M&N’s estimate is not due to tidal record length. M&N states that the Chevron Oil Pier data, which M&N states has a record length of 5 years, was used to develop the tidal prism. Chevron Oil Pier datums are based on 8 years of data (1995-2002), and based on those 8 years of data, the MHHW tidal elevation at Chevron Oil Pier is 6.049 feet (MLLW). The area of the marina is approximately 46.4 acres (at MSL), therefore the tidal prism is 280 acre-feet, less than 1.8% difference from the 275 acre-feet estimate by CHE, and 20% different from the 350 acre-feet presented in the original M&N report. M&N’s original tidal prism calculations appear insufficiently accurate for harbor design.

Item 23 - For completely mixed conditions (mixing takes place evenly throughout the basin and in the tidal range), the flushing time would be about 35.7 tidal cycles (18.5 days).

M&N appears to agree that CHE’s comment is reasonable, however their statement presented in the response is incorrect due to the error described in Item 22 above. M&N’s tidal prism calculations should not be used as a basis for determining flushing time.

Item 24 - For the potential long residence times in the harbor, controlling pollutant discharge will therefore be critical to maintaining water quality. Harbor water quality can be maintained by preventing the discharge of pollutants into the harbor basin through the use of recognized Best Management Practices (BMPs).

Regarding water quality in the flooded Main Quarry Bowl, please see Master Response 7 in Section 7.2 of this document.
### Item 25 - A potential marina in the SRRQ site would be able to be constructed and anchored similar to a freshwater marina at an inland lake with a few exceptions.

It appears that M&N agrees with CHE’s comment.

19-118 Regarding stratification of the Main Quarry Bowl after it is flooded, please refer to Master Response 7 in Section 7.2 of this document.

19-119 This comment is preamble to those that follow.

19-120 Please refer to Master Response 10 in Section 7.2 of this document.

19-121 Please refer to Master Response 7 in Section 7.2 of this document.

19-122 The Wetlands Habitat Quality Assessment for the San Rafael Rock Quarry produced by WRA in December 2007 is included as part of the comment package. This document was received and reviewed by ESA in January, 2008, in preparation of the Draft EIR.

19-123 This comment is preamble to those that follow.

19-124 This comment reviews the significant impacts identified in Draft EIR Section 4.4, Geology, Soils and Seismicity, and Section 4.5, Hydrology and Water Quality.

19-125 The issues raised in this comment were largely resolved during discussions between ENGEIO and the EIR preparers, including Mr. Seidelman, during preparation of the Draft EIR. The resolution of these issues is reflected in Mitigation Measure R4.4-1 in Section 4.4, Geology, Soils, and Seismicity, which requires the applicant to include as part of the project recommendations from the Supplemental Geotechnical Data Report Proposed Changes to Mining Plan, by ENGEIO. These recommendations are considered sufficient to mitigate Impact R4.4-1 (slope instability hazards) to less than significant.

19-126 This comment reviews and concurs with the need for Mitigation Measure R4.5-8 (a requirement for the Quarry to model potential effects of a tsunami or seiche event, and anticipated sea level rise).

19-127 The issues raised in this comment were largely resolved during discussions between ENGEIO and the EIR preparers, including Mr. Seidelman, during preparation of the Draft EIR. The resolution of these issues is reflected in Mitigation Measures R4.4-3a, b, and c in Section 4.4, Geology, Soils, and Seismicity.

19-128 Please see the response to comment 19-25, above.

19-129 This comment discusses noise abatement measures implemented by the Quarry in 2007 and states that their mitigating effects are not reflected in Table 4.7-4 in Section 4.7, Noise and Vibration in the Draft EIR. These measures include the installation of directional/reduced noise back-up alarms, application of noise dampening materials onto
loading surfaces and the possible conversion (as yet not implemented) of barge surfaces from steel to concrete.

It is acknowledged that the noise abatement measures were not included in the baseline noise measurements performed for the AQP Initial Study and for the combined AQP and ARP Draft EIR. The Draft EIR identifies only a less than significant impact related to Quarry operations under the AQP (Impact P4.7-6). The Draft EIR does, however, identify a significant impact from noise associated with construction of the proposed berm in the NE Quadrant; the use of broadband back-up beepers is identified as a "mitigation measures proposed as part of the project" (Mitigation Measure R4.7-1a), and is necessary to reduce this impact to less than significant.

19-130 This comment concurs with the Draft EIR finding that restrictions contained in the proposed AQP regarding hours of operation and acceptable noise levels would not be expected to result in future noise levels that exceed those currently experienced by sensitive receptors.

19-131 This comment discusses the monitored results of noise abatement measures implemented by the Quarry in 2007. These measures include the application of noise dampening materials onto barge loading equipment. For the reasons stated in the response to comment 19-129, noise abatement features implemented subsequent to October of 2006 are not considered a part of the environmental baseline and therefore represent potential mitigation measures for the purposes of environmental review under the Draft EIR.
April 14, 2008

Tim Haddad
Environmental Coordinator
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, CA 94903-4157

Re: San Rafael Rock Quarry

Dear Mr. Haddad,

It has come to our attention that the Marin County Board of Supervisors will be conducting a public hearing to review comments regarding the County’s draft EIR relating to the San Rafael Rock Quarry (SRRQ).

The California Central Valley Flood Control Association was established in 1926 to promote the common interests of its membership in maintaining effective flood control systems in California’s Central Valley for the protection of life, property and the environment. We represent over 70 members including reclamation, flood control, levee, drainage and similar special districts, cities, counties, and other public corporations. The delta levee system protects homes, businesses, human life and the future economic stability in these communities. The Delta levees also protect the state’s water conveyance system that is vital to the state and global economy.

SRRQ is a unique resource that provides rock materials to carry out preventative and emergency maintenance on the delta levee system. Not only does the SRRQ provide the primary source of materials needed, it is also the only source for marine-based activities and the only quarry in Northern California with direct loading access to barges. Marine-based equipment is often the only way to access levee repair sites.

The delta levee system, home and business owners, members of the surrounding communities are dependent on the use of rock bank protection and the loss of the SRRQ will make it extremely difficult to maintain the delta levee system in an efficient and cost effective manner.

In conclusion, we would like to convey the importance of keeping SRRQ an active mining operation as vital to the public safety of Central Valley residents. Prohibiting SRRQ from conducting business would detrimentally affect millions of people, including those who are in opposition of keeping SRRQ an active business.

Sincerely,

Melinda Terry, Executive Director
Comment Letter 20: California Central Valley Flood Control Association

20-1 This comment discusses the importance of the San Rafael Rock Quarry in providing essential construction materials for maintenance and improvement of flood control facilities in the Sacramento-San Joaquin Delta. See Master Response 12.
March 17, 2008

Tim Haddad
Environmental Coordinator
Marin County
Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, California 94903-4157

Re: Comments of Counsel for Point San Pedro Road Coalition on Draft Environmental Impact Report for the San Rafael Rock Quarry’s Proposed 2004 Amended Reclamation Plan

Dear Mr. Haddad:

These comments on certain legal issues regarding the 2004 Amended Reclamation Plan (“04ARP”) are submitted by counsel on behalf of the Point San Pedro Road Coalition (“Coalition”), a non-profit organization concerned about the environment of the peninsula on which the San Rafael Rock Quarry (“SRRQ”) is located. The Coalition contend again now, as they have contended since the 2004 Amended Reclamation Plan (“04ARP”) was submitted, that the project is illegal as proposed and cannot be approved. The draft Environmental Impact Report (“DEIR”) should reflect this fact, but does not. Accordingly, the DEIR must be amended before it is approved. These comments are submitted for consideration by the Marin County Board of Supervisors in advance of the scheduled March 25, 2008 public hearing on the DEIR.

Specifically, the proposed dumping of over 2 million cubic yards of overburden and other mining waste (pond fines) site wide, including hundreds of thousands of cubic yards of materials adjacent to the McNears Beach County Park and the Marin Bay Park residential development is expressly prohibited by Judge Sutro’s April 19, 2004 Order (Attachment 1 hereto). Most of this material will be later removed, requiring extensive double-handling and resulting noise and dust generation and other negative visual impacts throughout the remaining life of the SRRQ. The Coalition has described this proposal as “dead on arrival” since it was first proposed and has warned the SRRQ repeatedly not to proceed with it. This DEIR should be the end of the line for this proposal. We are disappointed the draft environmental impact report (“DEIR”) does not expressly find, as it must, that Judge Sutro’s April 19, 2004 Order prohibiting this proposed massive dumping project is a “baseline” condition with which the proposal must comply. In that regard, the DEIR is flawed and should be re-written to include the Court’s prohibition as a baseline condition. While we applaud the conclusion of the DEIR that the proposed project has
serious adverse environmental impacts and that the best alternative is to prohibit the disposal of overburden and pond fines in the northeast quadrant, this “alternative” should be a legal requirement, not a mere option to be considered.

Moreover, the 04ARP proposes scraping the vegetation off a ridge top just south of the McNear Brick facility that the SRRQ promised in its 1982 Amended Reclamation Plan (“82ARP”) would be maintained in its “natural state” and to grade a portion of South Hill that the 82ARP also indicates will be preserved in a natural state. Other areas to be preserved in a natural state are also slightly modified. See and compare DEIR Figures 3-5 and 3-7, attached hereto as Attachments 2 and 3 (the areas to be preserved in natural state are highlighted in Figure 3-5). As a result of the SRRQ’s 1982 promise, Judge Sutro’s April 19, 2004 Order required this ridge top and this area of South Hill, and all the other areas, to be “preserved in [their] natural state.” Again, the DEIR should have identified this aspect of the Court’s Order protecting these areas as a baseline condition and concluded that all areas identified as “Preserve in Natural State” cannot be modified in any manner by the SRRQ. The DEIR must be corrected to identify this baseline requirement and reject the proposed scraping off of this ridge top, the grading of this area of South Hill, and the other modifications proposed by the SRRQ to all of these areas to be preserved in their natural state.

Finally, the Coalition notes that the SRRQ’s proposed construction of a huge 5.9 acre, 15 foot high “surcharge berm” (i.e.: building pad) just north of the existing McNear Brick facility is another illegal expansion of a non-conforming use. Moreover, construction of this huge new building pad is part of a future development project that is not even before the County for approval. In effect, the SRRQ is proposing to commence construction of a commercial/residential project that has not even been proposed. This aspect of the 04ARP is not reclamation, but the commencement of the future development of the site. Such piecemeal construction of the future development project should not be permitted in the guise of a reclamation plan. The DEIR should note this further violation of the baseline conditions to which the SRRQ is subject that would also prevent this illegal expansion of a non-conforming use.

As a result of these legal deficiencies in the 04ARP, and in the DEIR for failing to note and address the fact that that these aspects of the proposed project violate the baseline conditions to which the SRRQ is subject, the Coalition requests the Board of Supervisors to reject the current DEIR and to request County staff to revise it accordingly. Where any comment by the Coalition does not result in such changes, the County must provide a specific written response to these comments, as required under CEQA. See 14 Cal. Code Regs. § 15088.
The Proposal In The 04ARP To Mix Stockpiled Pond Fines With Overburden And Build A Huge Berm In The NE Quadrant Violates the April 19, 2004 Order And Is Illegal.

The SRRQ’s proposed 04ARP, if approved, would violate the Court’s April 19, 2004 Order. On April 19, 2004, Marin Superior Court Judge Suto held that SRRQ’s industrial use of the SRRQ became non-conforming when the property was rezoned by the County at the SRRQ’s request on November 9, 1982. As a consequence, Judge Suto determined that the SRRQ’s scope of use of the property is limited to the industrial uses being conducted on the property when it became a non-conforming use in 1982. The Court looked to the 82ARP submitted by the previous owners of the property, Basalt, to determine the allowed scope of the non-conforming use. The Court found that the SRRQ’s current use has a “substantially different and adverse impact on the neighborhood” than it did in 1982 and that certain SRRQ activities constituted an illegal expansion of the non-conforming use in violation of Marin County Code § 22.78.010 and must be enjoined. The Court further found that SRRQ’s substantial deviation from the 82ARP violated Public Resources Code § 2777, Chapter 23.06 of the Marin County Code, and the Peacock Gap Neighborhood Plan.

The Court’s April 19, 2004 Order specifically enjoined the SRRQ from depositing any overburden, tailings, dredged material or other waste materials in the Brick Resource Area (the northeast quadrant) depicted in Figure 1 of the 82ARP. The Coalition has long asserted the prospective illegality of ARP04 to the County, the SRRQ and this Court, since it is in fact nothing more than a “Cut and Fill Plan” in which the SRRQ, in direct contravention of paragraph 6 of the Order, proposes to stockpile, grade and then subsequently remove hundreds of thousands of tons of overburden and pond tailings (“fines”) in or from the Northeast Quadrant of the SRRQ. The Order flatly enjoins all such activities, providing in relevant part:

“6. Defendant Quarry is enjoined from depositing any overburden, tailings, dredged material or other waste materials in the Brick Resource Area (the Northeast Quadrant) depicted in Figure 1 of the 1982 Amended Reclamation Plan (attached hereto as Exhibit 1).” (Emphasis added).

The Court correctly enjoined such activities since the Coalition proved at trial that no such activities occurred in the Northeast Quadrant prior to 1982, when the SRRQ became non-conforming. Therefore, no such activity could be permitted after 1982, since such activities would constitute an illegal expansion of the non-conforming use.
However, the SRRQ’s 04ARP proposes to “mix pond fines with overburden in the NE Quadrant to produce material for engineered fills for reclamation purposes”, “construct a berm approximately 70 feet above existing grade, 300 feet wide by 600 feet long, along the northern property line in the NE Quadrant during Phase 1, to provide a visual and sound screen”, maintain the berm “until the completion of other reclamation activities in the NE Quadrant” and then remove the berm, all in direct violation of the Court’s order. Consistent with SMARA §2730, pond fines are considered mining waste. The Court clearly ordered that mining waste cannot be deposited in the northeast quadrant. The SRRQ is trying to end-run the Court’s prohibition against this expansion of the SRRQ’s use by re-naming its proposed massive cut and fill and grading operations as “reclamation.” Yet, the facts clearly show that the proposed activities have little to do with reclamation and everything to do with expanding the use of the Northeast Quadrant of the SRRQ (illegally) to act as a stockpile area for overburden and pond fines that the SRRQ plans to place in that location solely for its own convenience, not because it is needed for reclamation purposes. The proof is that nearly all of the overburden and pond fines to be placed in the Northeast Quadrant in “Phases 1-3” as described in ARP04 are subsequently removed in Phase 4 and placed elsewhere on the site.

Not only is this proposal illegal, the DEIR indicates it would create noise, dust and visual impacts on the SRRQ’s residential and County Park neighbors. The SRRQ tries to justify its proposal by claiming it is for reclamation purposes and to provide a visual and sound screen. These proposed continued waste disposal activities, however, are flatly illegal no matter how the SRRQ (or the County) characterizes them. In light of the Court’s April 19, 2004 Order finding that the SRRQ has no vested right to deposit overburden or other waste materials in the Brick Resource Area, and that such past operations were illegal expansions of the SRRQ’s non-conforming use, the SRRQ’s proposal to continue these waste disposal operations in 04ARP is a zoning violation, a violation of this Court’s April 19, 2004 Order, and simply outrageous. The County should not even be reviewing this illegal proposal in the DEIR. At a minimum, the DEIR should identify the Court’s prohibition as a baseline condition and reject outright this aspect of the 04ARP.

The Coalition is not alone in this position. The County’s own legal consultant, the land use firm of Shute, Mihaly & Weinberger, concurs with the Coalition’s position in this regard. In his December 21, 2005 letter to the County, Clement Shute states that “[w]e agree [with the Coalition] that the baseline should not include any dumping of any material in the northeast
quadrant] since the Statement of Decision at p. 16 finds that use of that area as a dumping ground is, in effect, not part of SRRQ’s vested right arising from its non-conforming status because such dumping occurred after the quarry attained non-conforming status.” (See Attachment 4 hereto). This effectively rebuts any other interpretation that would allow such dumping to occur in the guise of “reclamation.” However, the DEIR fails to mention the Shute, Mihaly & Weinberger legal analysis. The final EIR should incorporate Shute, Mihaly & Weinberger’s December 21, 2005 letter, its conclusion, and find that this aspect of the 04ARP violates that baseline condition.

An alternatives analysis is at the heart of the purpose of an EIR. See Pub. Res. Code § 21102. An EIR must analyze a range of reasonable alternatives to a project that would feasibly attain most basic objectives while avoiding or substantially lessening a project’s significant impacts. See 14 Cal. Code Regs. § 15126.6(a). An EIR “must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives.” 14 Cal. Code Regs. § 15126.6(a). The DEIR discusses numerous mitigated alternatives for the SRRQ’s proposed 04ARP. A mitigated alternative to the SRRQ’s illegal proposal to continue waste disposal activities in the northeast quadrant that the Coalition supports includes not using the northeast quadrant as a staging area for storage and processing of materials for phased reclamation grading. Under that alternative, the proposed 70 foot high mega-berm, 300 feet wide by 600 feet long, would not be constructed. Instead of illegally depositing waste in the northeast quadrant, the mitigated alternative proposes depositing any excess overburden, pond fines, or other mining wastes in the main quarry bowl. The Coalition fully supports this alternative as both a legal alternative and one that mitigates the serious environmental impacts to which County park users and the residents of Marin Bay Park would otherwise be subject.

The Proposals In The 04ARP To Remove Woodlands From a Ridge Top, Grade a Southern Extension of South Hill, And Modify Other Areas Required To Be Preserved In A Natural State Is A Further Violation of the Court’s Order and a Baseline Condition.

The SRRQ’s proposed 04ARP, if approved, would violate the Court’s April 19, 2004 Order in at least two other ways. First, the 04ARP proposes removing the woodlands off a ridge top just south of the McNear Brick facility in the southwest quadrant that the 82ARP provided would be maintained in its “natural state.” (See and compare attached DEIR Figures 3-5 and 3-7.) Second, the 04ARP proposes to grade an area of South Hill that the 82ARP also provided
would be maintained in its “natural state.” (Ibid.) Other areas required to maintained in their natural state are also modified in ARP04.

The Court’s April 19, 2004 Order requires that this ridge top and this area of South Hill, and various other areas identified in the 82ARP be “preserved in [their] natural state.” Again, the DEIR should have identified this aspect of the Court’s Order protecting these areas as a baseline condition and stated that none of these areas can be modified by the SRRQ going forward either for mining, “reclamation,” or development purposes. The DEIR must be corrected to identify and incorporate these baseline requirements and reject the illegal removal of woodlands and other grading and modifications of these areas proposed in the 04ARP.

The Proposal In The 04ARP To Construct A 5.9 Acre “Surcharge Berm” 15 Feet High In The Northwest Quadrant To Enable Post-Reclamation Use of This Area For Structures Is An Illegal Expansion Of A Non-Conforming Use.

The 04ARP proposes to construct another huge 5.9 acre “boomerang-shaped” surcharge berm, 15 feet high, constructed of overburden and pond fine wastes, in the northwest quadrant of the property, in front of the current McNear Brick facility. See DEIR Fig. 3-11 (see Attachment 5 hereto). There is no evidence in the 82ARP or anywhere else that Basalt has used this large 5.9 acre area for disposal of overburden in the past, or that Basalt intended to create a huge “building pad” in the northwest quadrant to enable post-reclamation commercial/residential development of the area. Therefore, this proposal in the ARP is an illegal expansion of a non-conforming use that should be noted as such in the DEIR. It will also create a significant visual disturbance to the current view of the McNear Brick facility from Point San Pedro Road. Furthermore, how is construction of a huge building pad designed to consolidate underlying Bay muds to enable commercial and residential development part of reclamation? Instead, it appears simply to be part of the construction of a proposed development and should not be included in a reclamation plan. Accordingly, this aspect of the plan should also be rejected by the DEIR as an illegal expansion of a non-conforming use and an untimely and inappropriate piecemeal approach to a future proposed development that is not part of the 04ARP project before the County. Only actions that are designed to properly reclaim the property and not ones designed to commence the future commercial and residential development of the property, should be considered.
The Coalition will be submitting additional comments regarding the DEIR’s evaluation of the negative environmental impacts that would result from the currently proposed 04ARP and the proposed Amended Quarry Permit.

Very truly yours,

[Signature]

John D. Judge
415.399.1555
judge@j ordinanceslaw.com

Attachments (1-5)
ATTACHMENT 1

SUPERIOR COURT OF CALIFORNIA
COUNTY OF MARIN

POINT SAN PEDRO ROAD COALITION, a California Corporation, JONATHAN DIPALMA, Individually, and on Behalf of All Those Similarly Situated,
Plaintiffs,
v.
SAM RAFAEL ROCK QUARRY, INC., and DOES 1 - 500,
Defendants.

COUNTY OF MARIN, a Political Subdivision of the State of California,
Plaintiffs,
v.
SAM RAFAEL ROCK QUARRY, INC. and DOES 1 through 20, inclusive,
Defendants.

Case No. CV 014584
(Consolidated with No. CV 014616, No. CV014602 and No. CV014618)

[Proposed] ORDER

Hearing Date: April 6, 2004
Time: 9:00 a.m.
Dept. H
Judge: Hon. John A. Sutro, Jr.

Case No. CV 014602
Comment Letter 21

PEOPLE OF THE STATE OF CALIFORNIA,
Plaintiff,
v.
SAN RAFAEL ROCK QUARRY, INC., et al.,
Defendants.

AMANDA METCALF,
Plaintiff,
v.
SAN RAFAEL ROCK QUARRY, INC., et al.,
Defendants.

Case No. CV 014610

Case No. CV 014618

A trial in this bifurcated matter was held on July 17, 18, 21, 24 and 25, 2003. John
Edgcomb and Mary Wilke, of the Law Office of John D. Edgcomb, appeared for plaintiff Point
San Pedro East Coalition; Amanda Metcalf, of the Law Offices of Amanda Metcalf, appeared
for plaintiff Amanda Metcalf; Jan Flagollet appeared for plaintiff County of Marin ("County");
Harriett Pollak and Roima Lerner appeared for plaintiff People of the State of California; and
John Taylor and Derek Cole, of Taylor & Wiley, appeared on behalf of defendant San Rafael
Rock Quarry ("SRRQ").

The Court announced its tentative ruling from the bench on January 20, 2004. With the
exception of Roima Lerner and Derek Cole, who were not present, and James Wiley, who
appeared on behalf of the defendant, counsel was the same.

The Court has reviewed the pre trial briefs filed by the parties, has ruled on the parties’
pre-trial in limine motions, has heard the testimony offered and the exhibits entered into .

[PROPOSED] ORDER

21-8 cont.

21-8 cont.

Evidence, and has reviewed the extensive post-trial briefs filed by the parties. As set forth in
more detail in the Statement of Decision issued herewith, this Court finds:

1. Defendant SRRQ’s industrial use of its property located at 1000 Point San Pedro
Road, San Rafael, California, API No. 18-3-010-09, 15, 16, and 52 (the “quarry property”), became
non-conforming when the quarry property was re-zoned by the County on November 9, 1982.

To determine the current scope of defendant SRRQ’s right to continue its industrial uses on the
quarry property, this Court applies the California Supreme Court’s decision in Hanson Brothers
Enter., Inc. v. Board of Supervisors, 12 Cal. 4th 533, 556 (1996), including the three part test set
forth in Town of Wolcott v. Smith, 556 A.2d 755, 759 (N.H. 1989), which was cited in Hanson
Brothers, supra. Pursuant to that test, the Court finds that the evidence shows that at the time
the quarry property became non-conforming, defendant SRRQ’s predecessor in interest, Basalt,
had manifest an intent to quarry the Main Pit to the extent doing so is profitable (i.e., without
respect to duration or the depth of its Main Pit), but that Basalt manifested no intent to mine
South Hill only to the limited extent reflected in the 1982 Amended Reclamation Plan and to not
mine other areas that Basalt agreed would be preserved in their natural state. Moreover, under
the third prong of the three-part test set forth in Town of Wolcott v. Smith, 556 A.2d 755, 759
(N.H. 1989), the Court finds that defendant SRRQ’s activities now have a “substantially different
and adverse impact on the neighborhood” than they did in 1982. The Court further finds that
certain activities engaged in by defendant SRRQ on the quarry property between 1986 and now
exceed the scope of Basalt’s use of the quarry property in 1982 and should be enjoined. Because
of these findings, the Court finds that defendant SRRQ has exceeded the permissible scope of its
non-conforming use in violation of Marin County Code § 22.78.010.

[PROPOSED] ORDER
2. The Court further finds that defendant SRRQ has undertaken a substantial
development from the 1982 Reclamation Plan, in violation of Public Resources Code § 2777,
Chapter 23,06 of the Marin County Code, and the Peacock Gap Neighborhood Plan.

Accordingly, IT IS ORDERED:
1. The above referenced violations constitute an “unlawful” act under the Uniform
Competition Law, Business and Professions Code § 17200. The Court therefore grants relief
under the following causes of action (as numbered in the complaint):
   a. People of the State of California: 2
   b. County of Marin: 11
   c. Point San Pedro Road Coalition: 1

2. Defendant SRRQ is enjoined from conducting any further mining operations at the
quarry property, provided that the operative effect of the foregoing injunction shall be suspended
forthwith if the defendants show, upon motion and good
cause shown, that the quarry property is not used for the purposes
in violation of state law and for the County and other interested agencies to act
upon said complaint.

3. Defendant SRRQ is enjoined from conducting any further quarrying outside of the
southeast and southwest quadrants of the quarry property as labeled in Fig. 1 to the 1982
Amended Reclamation Plan (attached hereto as Exhibit 1).

4. Defendant SRRQ is enjoined from quarrying at South Hill (the southwest quadrant)
beyond what is described in the 1982 Amended Reclamation Plan.

[PROPOSED ORDER]

5. Defendant SRRQ is enjoined from mining, grading, and depositing materials,
overburden, tailings, dredged material or other waste materials in the five (5) areas labeled
"PRESERVE IN NATURAL STATE" in Figure 4 of the 1982 Amended Reclamation Plan for
the Property (attached hereto as Exhibit 2).

6. Defendant SRRQ is enjoined from depositing any overburden, tailings, dredged
material or other waste materials in the Strick Resource Area (the northeast quadrant) depicted in
Figure 1 of the 1982 Amended Reclamation Plan (attached hereto as Exhibit 1).

7. Defendant SRRQ is enjoined from permitting more than 250 Truck Trips in or out of
the quarry property per day, and any Truck Trip by trucks with a capacity greater than
approximately 25 tons is prohibited.

8. Defendant SRRQ is enjoined from permitting Truck Trips into or out of the quarry
property from 7:00 a.m. or after 5:00 p.m., Monday through Friday, and all Truck Trips on
Saturday, Sunday or federal or state holidays, are prohibited.

9. Defendant SRRQ is enjoined from importing onto the quarry property the following
materials: (i) waste; (ii) used asphaltic concrete or concrete for recycling; and (iii) dredged non-
metallic materials.

10. Unless and until a further amended reclamation plan is submitted to and approved by
the lead agency regulating proposed expanded quarrying, defendant SRRQ:
   a. is enjoined from quarrying outside the final footprint, contours and -200’ MSL
depth reflected in the 1982 Amended Reclamation Plan, thereby avoiding further illegal
substantial deviation from the approved 1982 Amended Reclamation Plan;

11. A "Truck Trip" is each trip by a truck with a capacity of approximately 25 tons, empty or
laden, into or out of the quarry property (i.e., a "round trip" is two Truck Trips).
Comment Letter 21

...shall provide a topographical map and an accompanying report to the Marin County Department of Public Works within 60 days of this Order and by January 31 of each year thereafter, consistent with the conditional approval of defendant's 1982 Amended Reclamation Plan, and such maps and reports shall be made available by the County for public inspection.

11. Enforcement: To ensure timely and effective monitoring and enforcement of the aforementioned order, the Court further orders that:

a. within 60 days of this Order, defendant SRRO shall pay for the installation and maintenance of a computerized truck counting system to be embedded or installed in all entrance/exit roads to and from the quarry property and shall require all trucks counting at Truck Trips entering and leaving the Property to pass over these systems and provide the County with exclusive access to the system to download the data, which the County shall download and post on the County's website not less frequently than once per month (SRRO to pay for any required upgrade of the County's website for this purpose). If it is determined that such a system will not be feasible because it might, for instance, not be able to distinguish ordinary parcel delivery trucks and other heavy vehicles from trucks used to deliver or retrieve raw materials to and from the Quarry property – the parties shall agree on another suitable counting mechanism or other enabling procedure that meets the intent of this condition.

11. Penalties: Defendant SRRO is ordered to pay a penalty in the amount of $2,500 for its violation of Business and Professions Code § 17200 et seq., as alleged in the actions brought by the People of the State of California and by Marin County.

12. Further Administrative Proceeding and Retention of Jurisdiction. Additional matters, including those discussed in the Statement of Decision accompanying this Order, should be reviewed and a licensed engineer by the County through the proper administrative means. It may be appropriate for the Court to review the matter of whether the quarry should continue to be operated and, if so, how, after these issues have been addressed more thoroughly through the administrative process. This Court retains jurisdiction of this matter for the purpose of resolving issues, including those addressed but left unresolved in the Statement of Decision issued herewith, until and until this Court orders otherwise.

This order is not a final judgment for purposes of appeal. A case management conference (CMC) is set for May 6, 2004 to discuss all outstanding issues.

Date: 4/13/04

[Signature]

Superior Court Judge
MEMORANDUM

TO: E. Clement Shute, Jr., Shute Nicola & Weisberg
Chris Locken, Paulin Dever & Arnaud LLP
Yelp Allen, Chairman, Point San Pedro Road Coalition Environmental Committee

FROM: Rachel Warren, Environmental Planner

RE: San Rafael Rock Quarry environmental review baseline opinion

DATE: January 15, 2006

Two correspondence were submitted to the County that addressed the environmental review baselines of the San Rafael Rock Quarry (SRQ) Amended Reclamation Plan and the Amended Quarry Permit in December 2005 submitted by the attorneys for SRQ, and a letter dated November 26, 2005 submitted by the Point San Pedro Road Coalition. In response, the County's consultant CEQA-export attorney, E. Clement Shute, prepared a legal opinion as to the appropriate baseline for environmental review of the SRQ projects.

The aforementioned submittals are enclosed. If you have any questions, please contact me at 499-6563.

CC: Susan J. Adams, Supervisor
Eric Steiger, Dept. of Public Works
Dan Bucella, Environmental Services Associates
Jim Bugg, County Counsel
Tim Hard, Environmental Coordinator
Tim Haddad
December 21, 2005
Page 2

between allowed truck trips under the 1982 amended reclamation plan and those that would be generated by the AQI. The impact of this increment of trips would be measured against existing traffic conditions.

Legal Context

"The litigation referred to above involves an action brought by the Attorney General, Marin County and neighbors of the quarry against SRRQ. This resulted in a Statement of Decision ordered by the Court on April 12, 2004 which, for present purposes, determined that SRRQ has a vested right to allow the quarry resources to the depth of economic feasibility and for as long as it takes to exhaust the resource. The Court also determined that SRRQ had exhausted the range of its vested right and violated certain provisions of state and local law. Id. at 30-32, 34. The Court entered orders on April 19, 2004 and July 15, 2004 which established interim operating conditions which would remain in effect until the necessary permits and approvals have been obtained from Marin County. Copies of these orders are attached.

Discussion

Both an EIR and an Initial Study must include a description of the "environmental setting" of the project. Cal. Code Regs. tit. 14 [hereafter "CEQA Guidelines"] §§ 15063(b)(3), 15125(a). The "environmental setting" is defined as "the physical environmental conditions in the vicinity of the project, to the extent that the nature of the project is such that the proposed action is the cause of the change in the environmental conditions." CEQA Guidelines § 15125(a). Whether a lead agency uses this formulation, or instead exercises its discretion to adopt a different baseline method, its decision must be supported by substantial evidence. (Fallbrook County Water District v. Superior Court (2000) 87 Cal. App. 4th 1770, 1776 ["evaluating whether there is substantial evidence to support County's decision not to deviate from the norm"].) Save Our Peninsula v. City of Pacifica (1999) 77 Cal. App. 4th 99, 120 [holding that a baseline method must be "supported by reasonable analysis and evidence in the record."]

1. In this letter, we were asked to provide guidance on whether remote activities (outside) were included in the Initial Study. See page 5, infra, for that discussion.

2. For the Initial Study, the environmental conditions existing at the time the study is performed are to be baseline at 1:1:17.

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Tim Haddad
December 21, 2005

Dear Tim:

You have asked this firm to provide guidance on "baseline" issues in connection with the application of San Rafael Rock Quarry, Inc. (SRRQ) for an Amended Reclamation Plan (ARP) and Amended Quarry Permit (AQI). An EIR is in preparation for the ARP and an Initial Study is in preparation for the AQI. This process arises out of litigation involving the quarry. Consist of Hawaii v. City of San Rafael Rock Quarry, Inc., Case No. CV 014602. In preparing this letter, we have considered the newly-released dated December 8, 2005 submitted by attorneys for SRRQ and the letter dated November 28, 2005 submitted by the Point San Pedro Road Coalition.

In summary for the ARP, the impacts of the project are those which would occur due to the changes proposed in the ARP as compared to the approved December 6, 1982 amended reclamation plan. These impacts would be evaluated in relation to the existing environment on the date of the Notice of Preparation (October 26, 2005).

In summary for the AQI, the impacts of the project are those which would occur due to the changes proposed in the AQI as compared to the permitted uses and activities occurring at the time the quarry became a non-conforming use (November 9, 1983). The impacts of these changes would be evaluated in relation to the existing environment at the time of preparation of the Initial Study. For example, truck trips would be measured against the difference..."
Comment Letter 21

Tim Haddad
December 21, 2005
Page 3

A project applicant's existing entitlement to use its property is properly considered part of the "environmental setting." In City of Ventura v. County of Ventura (1999) 70 Cal. App. 4th 238, the Court of Appeal held that an EIR properly considered a quarry operator's existing mining entitlement as part of the "environmental setting." In that case, the quarry had been operating under a 1976 conditional use permit authorizing extraction of 1.8 million tons of aggregate per year, which could have generated 810 truck trips per day. (Id., at 241.) The EIR for the 1976 permit, however, stated that the project was generating only 120 actual daily truck trips. (Id., at 241.) In 1993, a new owner acquired the site and applied for a new permit allowing expanded operations, but the old permit expired while the application was under review. (Id.) The quarry operator and the County then entered into a compliance agreement allowing continued operations pending a decision on the application. (Id.) After the County approved the extension and amended the original authorization, the County brought suit, arguing in part that the EIR improperly considered the 810 daily truck trips authorized by the 1976 permit as the "baseline" for analysis of the new project's impact. (Id., at 242.) The Court rejected this argument, holding that "the trial court determined that the mines operators at full capacity pursuant to the entitlement...appropriately provided a baseline by the compliance agreement." (Id., at 242-43.)

The analysis presented here is analogous. SIRQ is operating under an "existing entitlement" to 1,862 annual reclaim restoration plans and a right to mine at the levels permitted in 1983. The quarry became a legal nonconforming use. Like the compliance agreement in City of Ventura, the legal entitlement and order issued here have extended these entitlements, subject to certain conditions. Accordingly, it is proper to consider these entitlements and the "environmental setting" existing at the time of issuance of the NOP and preparation of the Initial Study.

ARPs

Regarding the ARPs, the baseline consists of the uses and activities which are within the area of CQ's non-conforming use. Pages 11 through 16 of the Statement of Decision discusses the operating conditions of those non-conforming uses. For evaluation of other impacts, such as cumulative impacts, the environmental setting of the Initial Study is the baseline.

The Appendix B comment from counsel for SIRQ, dated December 8, 2005, suggests that the scope of the non-conforming use is specified by the Court's orders of April 19, 2004 and July 15, 2004 which establish interim operating conditions. For two reasons, we do not agree that all of the conditions imposed by the Court are met. First, we have been informed by the County Counsel that it was not the purpose of the County to adopt the interim 1982 conditions when it formulated the interim operating conditions. Second, from the text of the orders regarding those conditions, there is no evidence they were intended to apply to the quarry's 1982 baseline for non-conforming status.

However, we do believe that the Statement of Decision at pages 11-16, as amended specticularly, is very useful in establishing the context of the non-conforming use which is the baseline. Further, we disagree with counsel for SIRQ that certain of the interim operating conditions do not carry over from the Court's determinations regarding the scope of the non-conforming use. These are conditions numbered 5, 6, 7, 8, 9, and 10 of the April 15, 2004 Order.
Comment Letter 21

December 21, 2005

Page 5

Additional Point Concerning Remote Activities of SRQ:

We have also been asked to determine whether any remote activities of SRQ in connection with its excavation must be considered and evaluated in the Initial Study for the AQP. Under CEQA, "project" means "the whole, of an action" that may cause a physical change in the environment. (CEQA Guidelines § 15374(a) [emphasis added].) In an EIR, "[a]ll phases of a project may be described when evaluating its impact on the environment: planning, acquisition, self-equivalent, and operational." (CEQA Guidelines § 15126.) The courts have invalidated EIRs for failing to discuss reasonably foreseeable future activities related to projects and the lesser and greater efforts of contractors. (See, e.g., People ex rel. Gehring v. Imperial Irrigation Dist. (1983) 144 CA3d 576, 599 [holding EIR inadequate for failing to discuss self-equivalent of development of research site]; Santa Clara County Water Dist. v. County of Orange (1991) 195 CA3d 811, 829-830 [holding EIR for sand and gravel mine facility for failing to discuss construction and environmental impact of additional water delivery facilities needed for operation].)

In their December 8, 2005 comment, counsel for SRQ argues that remote activities will be linked to the granted right to mine and are therefore outside the scope of the Initial Study. We do not see any quia tainability a bright line. The remote activities (e.g., the self-equivalent aspects of the project) which are part of the Initial Study would be part of the Initial Study. For example, if a certain number of large trucks were attributable to the non-conforming use or SRQ, they are part of the Initial Study and will be evaluated. But, if it is reasonably foreseeable that large trips will increase as a result of the AQPs' permit, for example, due to a reduction in truck trips), the impact of that increase should be included in the environmental evaluation. Similarly, if it is reasonably foreseeable that impacts of the remote site will occur due to the AQPs, they must be evaluated. On the other hand, there may be insufficient information upon which to base conclusions about remote impacts in the Initial Study and no speculation should not be evaluated. (CEQA Guidelines § 15126.)
Comment Letter 21: Edgcomb Law Group (Representing the Point San Pedro Road Coalition)

21-1 The County does not have the power to demand that an applicant withdraw a completed application. Due process requires that the County accept any completed application and duly process it. If that application is inconsistent with County regulations or policies, or with court orders, the application may, after due process is accorded, be denied. The environmental effects of those aspects of ARP04 that differ from ARP82, including use of the NE Quadrant for stockpiling and mixing mining wastes for later use in reclamation grading, are fully analyzed in the Draft EIR.

21-2 Please see the response to comment 21-1. The environmental effects of the applicant’s proposal to disturb areas identified in ARP82 as “areas to be left in natural state” are fully analyzed in the Draft EIR.

21-3 SMARA requires that a reclamation plan or amended reclamation plan include a “…description of the manner in which reclamation, adequate for the proposed use or potential uses will be accomplished…” (Public Resources Code §2772(c)(8). See also California Code of Regulations, Title 14 §3704. Performance Standards for Backfilling, Regrading, Slope Stability, and Recontouring). The proposal to construct a surcharge berm to enable future development of the site with the proposed post-reclamation use appears to be consistent with this requirement. Approval of ARP04, should it occur, would not authorize the applicant to proceed with post-reclamation development of the site. Consideration of authorization of post-reclamation uses of the site would occur in the context of processing of the Final Development Plan, which will be submitted three years prior to the anticipated cessation of mining operations.

21-4 Please see the response to comments 21-1 through 21-3, above. See also Master Response 3 in Section 7.2 of this document.

21-5 Please see the response to comment 21-1, above.

21-6 Please see the response to comments 21-1 and 21-2, above.

21-7 Please see the response to comment 21-3, above.

21-8 These attachments are apparently provided in support of the points made by the commenter in comments 21-1 through 21-7, but do not require discrete responses.
April 14, 2008

By Hand-Delivery and E-mail

Mr. Tim Haddad
Environmental Coordinator
County of Marin
Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, California 94903-4157

Re: Supplemental Comments of Counsel for Point San Pedro Road Coalition on Draft Environmental Impact Report for the San Rafael Rock Quarry’s Proposed 2004 Amended Reclamation Plan and Amended Quarrying and Mining Permit

Dear Mr. Haddad:

This letter contains supplemental comments regarding the Draft Environmental Impact Report ("DEIR") for the San Rafael Rock Quarry’s Proposed 2004 Amended Reclamation Plan ("04ARP") and Amended Quarry and Mining Permit ("04AQP") arising from the March 25, 2008 Marin County Board of Supervisors hearing. These supplemental comments are submitted by counsel on behalf of the Point San Pedro Road Coalition ("Coalition"), a non-profit organization concerned about the environment of the peninsula on which the San Rafael Rock Quarry ("SRRQ") is located.

First, at the March 25th hearing the SRRQ presented a consultant, ENVIRON, to comment on the DEIR. ENVIRON claimed that the cumulative impacts discussion in the DEIR was flawed because it considered both past and future impacts in calculating the cumulative effects. The Coalition disagrees. As set forth in the CEQA Guidelines at 14 Cal Code Regs § 15355(b), “the cumulative impact from several projects is the change in the environment that results from the incremental effect of the project when added to other closely related past, present and probable future projects.” (Emphasis added). The past projects here include past quarrying operations under the 1976 Reclamation Plan and the 1982 Amended Reclamation Plan ("82ARP"), projects that date back over 30 years. Furthermore, the CEQA Guidelines allow the agency preparing the DEIR to choose between
a list-of-projects or summary-of-projects approach when evaluating cumulative impacts. 14 Cal Code Regs § 15130. The list-of-projects approach specifically allows for a cumulative impacts evaluation that is based on a list of past, present, and probably future projects producing related impacts. 14 Cal Code Regs § 15130(b)(1)(A). The Marin County Community Development Agency and Marin County Department of Public Works have complied with CEQA by considering and evaluating past, present and future human health impacts of several closely-related projects conducted by the SRRQ, all of which resulted in exposures to residents of the toxic substances cited in the DEIR, in the cumulative impacts section of the DEIR.

Second, in response to a question from Supervisor McGlashan, Chris Locke, counsel for the SRRQ, indicated at the March 25th hearing that the SRRQ believes the SRRQ can deposit overburden and waste materials in the Northeast Quadrant, if the County allows it in its approval of the 04ARP, despite the April 19, 2004 Order issued by Judge Sutro of the Marin Superior Court explicitly enjoining precisely such actions. See paragraph of 6 the Order (attached hereto). Mr. Locke claimed that the Court’s Order authorized continued dumping once an Amended Reclamation Plan is approved. As a quick review of the Order reveals, there is no basis whatsoever for Mr. Locke’s assertion.

At the July 2004 trial, the Court was expressly requested to determine the legal extent of the SRRQ’s vested rights as a non-conforming use after its property was re-zoned in 1982 at its own request. The Court determined, in relevant part, that dumping overburden and waste in the Northeast Quadrant was not an existing use at the time the SRRQ was re-zoned, resulting in the legal conclusion that it has no vested right to do so now and that it is enjoined from doing so. The Court similarly found in paragraphs 5 and 9 that the SRRQ had no vested right to take any actions in areas designated in the 82ARP to be “preserve[d] in natural state” or to import gravel, used asphaltic concrete or non-sand dredged materials, and enjoined such actions. Furthermore, the Court found the SRRQ had no vested right to allow any more than 250 truck trips per day into the quarry or to allow trucks in before 8 a.m. or out after 5 p.m., or on weekends, and also enjoined any operations in violation of these limitations. None of these vested rights legal determinations or any related aspect of the Court’s injunctive relief granted to the Coalition on these issues can be modified in any way by the County’s approval of any amended reclamation plan. Nor is there any language anywhere in the Order conditioning the continuing effectiveness of the
T. Haddad  
Marin County CDA  
April 14, 2008  
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Court’s injunction against these activities on whether or not the County approves an amended reclamation plan in the future.

In stark contrast to the dumping of overburden and other waste materials in the Northeast Quadrant, which is illegal and permanently enjoined, along with other prohibitions and limits on the SRRQ’s operations, the Court did find in its Order that the SRRQ had a limited vested right to continue quarrying in certain areas in the southeast and southwest quadrants of the property (see Order, paragraphs 3, 4, 5 and 10), but could only do so within the limits of the existing 82ARP (which the SRRQ had already violated), until a new amended reclamation plan is approved.

The Board of Supervisors has no authority to overturn the Court’s vested rights legal conclusions or the Court’s injunctive relief granted to the Coalition, simply by approving an amended reclamation plan. The Court’s April 19, 2004 Order (attached hereto) at paragraph 10, which the Quarry apparently relies upon, provides in relevant part that “[u]nless and until a further amended reclamation plan is submitted to and approved by the lead agency reflecting proposed, expanded quarrying” the SRRQ is enjoined from quarrying outside the final footprint contours and must annually provide a topographical map and accompanying report. Thus, by its own terms, this provision has no effect whatsoever on the actions separately enjoined in paragraphs 5-9. In short, the footprint contours and the topographical map requirement are the only two actions enjoined by the Court that can be modified by County approval of an amended reclamation plan.

As we have noted in prior correspondence, the Coalition is not alone in this position. The County’s own legal consultant, the land use firm of Shute, Mihaly & Weinberger, concurs with the Coalition’s position. In his December 21, 2005 letter to the County, Clement Shute states that “[w]e agree [with the Coalition that the baseline should not include any dumping of any material in the northeast quadrant] since the Statement of Decision at p. 16 finds that use of that area as a dumping ground is, in effect, not part of SRRQ’s vested right arising from its non-conforming status because such dumping occurred after the quarry attained non-conforming status.” This effectively rebuts any other interpretation that would allow such dumping to occur in the guise of “reclamation.” However, the DEIR fails to mention the Shute, Mihaly & Weinberger legal analysis. The final EIR should incorporate Shute,
Comment Letter 22

T. Haddad
Marin County CDA
April 14, 2008
Page 4 of 5

Mihaly & Weinberger’s December 21, 2005 letter, its conclusion, and find that this aspect of the 04ARP violates that baseline condition.

In summary, neither the Marin Board of Supervisors nor the Marin County Development Agency has legal authority to override the Court, short of re-zoning the property. We trust you and County Counsel will agree after reviewing this letter and, most importantly, the Court’s Order, which contains those legal “baseline” conditions that must be incorporated into the DEIR.

Third, at the March 25th hearing the SRRQ implied that it would be modifying the timing of reclamation from what is presented in its 04ARP. This change in the timing of reclamation activities would constitute a substantial change to the proposed 04ARP project. Additionally, the Coalition understands that the SRRQ has hired consultants to conduct a dust study and, possibly, a health risk assessment regarding the SRRQ. Any significant new information (including changes in the project or environmental setting or the submission of additional data) added to the DEIR administrative record by the project applicant after the beginning of the public review period and before final certification of the EIR requires the recirculation of the DEIR for comment. 14 Cal Code Regs § 15088.5; Pub Res Code § 21092.1. 14 Cal Code Regs § 15088.5 states that recirculation is required when addition of new information deprives the public of a meaningful opportunity to comment on substantial adverse project impacts or feasible mitigation measures or alternatives that are not adopted. Accordingly, the Coalition requests the recirculation of the draft EIR and the reopening of the comment period to allow the public, including the Coalition, to provide additional comments on the revised project, the revised draft EIR, and any and all additional data submitted by the SRRQ.

We trust the County will take these comments into consideration before finalizing a DEIR that contains clearly illegal project proposals which, if approved, will be quickly overturned in Marin Superior Court, and will insure that the public is able to review and comment on all changes to the project and all additional data submitted by the SRRQ.
Very truly yours,

John D. Edgecomb
415.399.0555
jedgcomb@edgcomb-law.com

Attachment (1)

Cc: Marin Board of Supervisors: Susan L. Adams, Harold C. Brown, Jr., Charles McGlashan,
   Steve Kinsey, Judy Arnold (by e-mail)
   Chris Locke (by e-mail)
   Patrick Faulkner, Marin County Counsel (by e-mail)
Comment Letter 22

Case No. CV 014584 (Consolidated with No. CV 014610, No CV014602 and No CV014618)

[PROPOSED ORDER]

Hearing Date: April 6, 2004
Time: 9:00 a.m.
Dept. H
Judge: Hon. John A. Sutro, Jr.

Case No. CV 014602

A trial in this bifurcated matter was held on July 17, 18, 21, 24 and 25, 2003. John Edgcomb and Mary Wilke, of the Law Office of John D. Edgcomb, appeared for plaintiff Point San Pedro Road Coalition; Amanda Metcalf, of the Law Offices of Amanda Metcalf, appeared for plaintiff Amanda Metcalf; Jim Flaggollet appeared for plaintiff County of Marin (“County”); Harrison Pollak and Raisa Lerner appeared for plaintiff People of the State of California; and John Taylor and Derek Cole, of Taylor & Wiley, appeared on behalf of defendant San Rafael Rock Quarry (“SRQ”).

The Court announced its tentative ruling from the bench on January 20, 2004. With the exception of Raisa Lerner and Derek Cole, who were not present, and James Wiley, who appeared on behalf of the defendant, counsel was the same.

The Court has reviewed the pre-trial briefs filed by the parties, has ruled on the parties' pre-trial in limine motions, has heard the testimony offered and the exhibits entered into...

[PROPOSED ORDER]
evidence, and has reviewed the extensive post-trial briefs filed by the parties. As set forth in more detail in the Statement of Decision issued herewith, this Court finds:

1. Defendant SRRQ’s industrial use of its property located at 1000 Point San Pedro Road, San Rafael, California, APNs 184-010-09, 15, 16, and 52 (the “quarry property”), became non-conforming when the quarry property was re-zoned by the County on November 9, 1982.

To determine the current scope of defendant SRRQ’s right to continue its industrial uses on the quarry property, this Court applies the California Supreme Court’s decision in Hansen Brothers Enter., Inc. v. Board of Supervisors, 12 Cal. 4th 533, 556 (1996), including the three-part test set forth in Town of Wolfeboro v. Smith, 556 A.2d 755, 759 (N.H. 1989), which was cited in Hansen Brothers, supra. Pursuant to these cases, the Court finds that the evidence shows that at the time the quarry property became non-conforming, defendant SRRQ’s predecessor in interest, Baralt, had manifested an intent to quarry the Main Pit to the extent doing so was profitable (i.e., without regard to duration or the depth of its Main Pit), but that Baralt manifested an intent to mine South Hill only to the limited extent reflected in the 1982 Amended Reclamation Plan and to not mine other areas that Baralt agreed would be preserved in their natural state. Moreover, under the third prong of the three-part test set forth in Town of Wolfeboro v. Smith, 556 A.2d 755, 759 (N.H. 1989), the Court finds that defendant SRRQ’s activities now have a “substantially different and adverse impact on the neighborhood” than they did in 1982. The Court further finds that certain activities engaged in by defendant SRRQ on the quarry property between 1986 and now exceed the scope of Baralt’s use of the quarry property in 1982 and should be enjoined. Because of these findings, the Court finds that defendant SRRQ has exceeded the permissible scope of its nonconforming use in violation of Marin County Code § 22.78.010.

2. The Court further finds that defendant SRRQ has undertaken a substantial deviation from the 1982 Reclamation Plan, in violation of Public Resources Code § 2777, Chapter 23.06 of the Marin County Code, and the Peacock Gap Neighborhood Plan.

Accordingly, IT IS ORDERED:

1. The above-referenced violations constitute an “unlawful” act under the Unfair Competition Law, Business and Professions Code § 17200. The Court therefore grants relief under the following causes of action (as numbered in the complaints):

   a. People of the State of California: 2
   b. County of Marin: 11
   c. Point San Pedro Road Coalition: 1

2. Defendant SRRQ is enjoined from conducting any further mining operations at the quarry property, provided that the operative effect of the foregoing injunction shall be suspended for a period of six months or such further time as the Court may approve, upon motion and good cause shown by the party or parties requesting such, to give defendant SRRQ time to seek to remedy its aforesaid violations of law and for the County and other interested agencies to act upon any amended reclamation plan that defendant SRRQ may submit.

3. Defendant SRRQ is enjoined from conducting any further quarrying outside of the southeast and southwest quadrants of the quarry property as labeled in Fig. 1 to the 1982 Amended Reclamation Plan (attached hereto as Exhibit 1).

4. Defendant SRRQ is enjoined from quarrying at South Hill (the southwest quadrant) beyond what is described in the 1982 Amended Reclamation Plan.
5. Defendant SRRQ is enjoined from mining, grading, and depositing materials, overburden, tailings, dredged material or other waste materials in the five (5) areas labeled "PRESERVE IN NATURAL STATE" in Figure 4 of the 1982 Amended Reclamation Plan for the Property (attached hereto as Exhibit 2).

6. Defendant SRRQ is enjoined from deposing any overburden, tailings, dredged material or other waste materials in the Bruck Resource Area (the northeast quadrant) depicted in Figure 1 of the 1982 Amended Reclamation Plan (attached hereto as Exhibit 1).

7. Defendant SRRQ is enjoined from permitting more than 250 Truck Trips in or out of the quarry property per day, and any Truck Trip by trucks with a capacity greater than approximately 25 tons is prohibited.  

8. Defendant SRRQ is enjoined from permitting Truck Trips into or out of the quarry property before 7:00 a.m. or after 5:00 p.m., Monday through Friday, and all Truck Trips on Saturday, Sunday or federal or state holidays, are prohibited.

9. Defendant SRRQ is enjoined from importing onto the quarry property the following materials: i) gravel; ii) used asphaltic concrete or concrete for recycling; and iii) dredged non-sand materials.

10. Unless and until a further amended reclamation plan is submitted to and approved by the lead agency reflecting proposed, expanded quarrying, defendant SRRQ:
   a. is enjoined from quarrying outside the final footprint, contours and -200' MSL depth reflected in the 1982 Amended Reclamation Plan, thereby avoiding further illegal substantial deviations from the approved 1982 Amended Reclamation Plan.

A "Truck Trip" is each trip by a truck with a capacity of approximately 25 tons, empty or loaded, into or out of the quarry property (i.e. a "round trip" is two Truck Trips).
may be appropriate for the Court to review the matter of whether the quarry should continue to be operated and, if so, how, after these issues have been addressed more thoroughly through the administrative process. This Court retains jurisdiction of this matter for the purpose of resolving issues, including those addressed but left unresolved in the Statement of Decision issued herewith, unless and until this Court orders otherwise.

This order is not a final judgment for purposes of appeal. A case management conference is set for 12/6/2004 to discuss additional issues.

Dated: 4/15/04

Superior Court Judge
Comment Letter 22: Edgcomb Law Group (Representing the Point San Pedro Road Coalition – second letter)

22-1 This comment is preamble to those that follow and does not require a response.

22-2 The County agrees that the approach taken to the analysis of cumulative impacts in the Draft EIR is consistent with the requirements of CEQA.

22-3 Please see the response to comment 21-1.

22-4 The Quarry has not amended its application with regards to timing of reclamation. While the County has received some indication that the Quarry may be conducting or may have conducted dust studies, this information has not been provided to the County and any such information is not considered a part of the application. The information and analysis of dust and health risk effects provided in the Draft EIR is considered sufficient for the purposes of the environmental analysis; see also Master Response 5 in Section 7.2 of this document. New information provided by the applicant is discussed in Master Response 1 in Section 7.2 of this document. As discussed in Master Response 1, however, the new information provided does not trigger the CEQA requirement to recirculate the Draft EIR.

22-5 These attachments are apparently provided in support of the points made by the commenter in comments 22-1 through 22-4, but do not require discrete responses.

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Additional information on air quality studies performed by the applicant was provided to the County just prior to publication of this FEIR, and is not reflected in this response or elsewhere in the FEIR.
April 12, 2008

Mr. Tim Haddad
Environmental Coordinator
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, CA 94903

Re: Comments to the Combined Draft Environmental Impact Report for the San Rafael Rock Quarry Amended Reclamation Plan and Amended Surface Mining and Quarrying Permit (the “DEIR”)

Dear Mr. Haddad:

We are residents of Marin Bay Park Court, which is a group of single family homes located adjacent to the San Rafael Rock Quarry (the “SRRQ”). The purpose of this letter is to express our comments and concerns about the DEIR. We believe that the DEIR needs to be improved in the following areas:

1. The DEIR does not sufficiently draw the distinction between naturally occurring silica and fractured silica that is only produced by mining activities. The EIR should clarify that the carcinogenicity of crystalline silica is well supported by scientific analyses (and has been classified as such by the International Agency for Research on Cancer) and not a hypothetical concern.

2. The EIR should comment on the degree to which individuals whose homes are closest to the SRRQ effectively incur occupational risk of crystalline silica exposure.

3. The DEIR does not adequately address the potential respiratory consequences of inhaling airborne crystalline silica microparticles, which can cause interstitial pulmonary fibrosis and is potentially lethal (i.e., silicosis), independent of the risk of lung cancer. This risk is directly related to the quantity of such inhaled dust during the lifetime of the individual, and therefore is related to the quantity of crystalline silica dust produced during the entire operational history of the quarry. The DEIR is therefore remiss in excluding consideration of the past history of quarry activities as it impacts the public health risk and the environmental impact, particularly for those in closest proximity to the quarry.

4. The EIR should take under consideration the operational history of the Dutra organization. Numerous documentation exists (including the Statement of
Decision on January 21, 2004 of the Superior Court of California County of Marin, Hon. John A. Sutro, Jr., and the related April 6, 2004 Order, the Reporter's Transcript of Status Conference, July 17, 2007 with Hon. John A. Sutro, Jr., and the June 2001 Grand Jury Findings on quarry operations, that the Dutra organization has repeatedly and over many years conducted its operations in a manner that is not only inconsistent with the residents' ability to enjoy their lives and homes, but also in violation of various administrative and court findings, rulings and orders. The Grand Jury and the Court have repeatedly expressed disbelief that Dutra has habitually disregarded legal restrictions within which it was supposed to operate (not only for the quarry operations, but also in constructing unauthorized, un-permitted and untaxed office and residential structures). We, as residents, add our bewilderment as to why this conduct has been tolerated. If the EIR considers options to the current operations, it must include strong safeguards regarding the enforceability of any such restrictions so that residents can be assured there will be no future violations of any restrictions on operations will be observed and that these restrictions will be strictly enforced by the county. Given the past history, it should be completely comprehensible to the Board of Supervisors why the residents regard shutting down the quarry as an important alternative to be given serious consideration in the EIR.

5. The EIR should be expanded to include empirical data from blasting vibrations within structures (i.e., as experienced inside residents' homes). Data from outside structures has not reflected the actual experience of the residents within their homes when blasting occurs.

6. The EIR should not be calculating noise impact by averaging noise over a 24-hour period, which includes the nighttime period when the quarry is not in operation. The standard should be measured based on an hourly average with a peak limit, consistent with the standard in the San Rafael City noise ordinance.

7. In verbal comments made at the March 25, 2008, hearing, several SRRQ proponents seemed to be taking the position that the homeowners in the vicinity of the SRRQ cannot complain about the SRRQ because they knew about its existence when they moved here. In light of that position, the EIR should examine exactly what the homeowners knew and were told and how much the SRRQ concealed about their plans and how they have been operating. We at Marin Bay Park were not informed by the county, city, nor Dutra of any potential health risks associated with quarry operations in general, nor, in particular, about fractured, cancer-causing silica, expansion plans, noise, dust, damage to our homes from blasting, and the fact that the owners of the SRRQ operate it as though laws do not apply to them. The Dutra organization, however, was well aware of the disruption to residents' homes, exemplified by the SRRQ manager's testimony before Judge Sutro that blasting does not take place on Thursdays (because real estate brokers' open house tours are on that day) or on Sundays (because buyers' open house tours are on that day)! Given these circumstances, the residents respond with little sympathy to arguments that the quarry existed prior to the development of homes. No one voluntarily assumed the risk of lung cancer, asthma or other respiratory or pulmonary health risks from silica dust or
other toxic emissions. Further, local residents should not be deemed to have assumed the risk that the quarry would operate longer and more intensively than legally allowed and that the County would fail in its regulatory role, both of which were factual findings by Judge Sutro. The quarry operations’ pre-existence should not entitle them to endanger the health of the residents given the knowledge modern science can now provide as to the hazards of toxic emissions. The EIR should include the insights that new and enhanced studies and testing techniques provide regarding the health risks to residents.

8. The EIR should consider the feasibility of 24/7 testing of sensitive receptor sites in the area (e.g., homes and schools) by an independent third party, with detailed testing results regularly and timely released to the public for inspection. The consequences of exceeding safe silica levels (which is generally the same as ambient levels) should be severe and automatically imposed.

9. The draft does not investigate the amount of truckloads from the SRRQ that are actually delivered in the County of Marin as opposed to other counties. The DEIR also fails to adequately consider other available sources of material if the SRRQ is shut down.

10. In considering the risk to residents of exposure to toxic emissions, the EIR should calculate risk estimates during the period the quarry is actually operating, and not artificially dilute the actual toxic emission rate by averaging emissions over the operational period combined with some arbitrary additional period going forward (i.e., since emissions during a prolonged hypothetical additional non-operational period would be zero). Theoretical scenarios should not be used to underestimate the health risk to residents.

11. The EIR should include a more thorough analysis of the most advanced available technology and management practices of other quarries utilized to reduce the negative impact of quarry activities on surrounding residential neighborhoods, not merely what some other local quarry happens to be doing.

12. The EIR should include the review of the proposed 70-foot high berm in the northeast quadrant of the SRRQ as part of the quarry waste disposal operations plan, not as part of the reclamation plan, since it is, in effect, a proposed ongoing waste disposal program. We also believe the EIR should reevaluate its categorization of the berm as having only a temporary impact given the length of time proposed for the project (two separate periods of 6 years each (one for berm building, one for tearing down the berm-- over 10 weeks each summer).

13. The DEIR report does not consider the County Grand Jury report and this should be considered in gauging the effects of the operations at the SRRQ.

14. The DEIR does not comment on Judge Sutro’s court orders to the extent necessary and should examine all the comments made by the judge and incorporate them in the final EIR.

15. The EIR should include a timeline within which the current administrative process should be completed and a resolution reached. The process should not be open-ended, tacitly giving SRRQ the right to continue current operations for an
indefinite period. That would be grossly unfair to residents. The residents need to know there is a definitive schedule for resolving the issues under consideration.

16. The EIR should include a more thorough exploration of all alternatives that can mitigate the cancer risk to individuals from quarry activities, including requiring the SRRQ to operate with enclosed crushers, trellex systems and restricted blasting and hours of operation. The EIR should also be expanded to explore other respiratory and pulmonary health risks (e.g., asthma), particularly for children in the neighborhood schools and nearby parks. The EIR should also examine the cumulative impact of years of exposure to and inhalation of crystalline silica and other contaminants. With respect to these health risks, cumulative impact is relevant to the analysis.

17. Because the consequences of failing to recognize the existence of crystalline silica exposure is so great for close by residents, the EIR should study exposure levels within homes by employing personal exposure detection devices on volunteers. This testing should be performed during the dry months of mid to late summer when operations are at peak levels. If that timing is not practicable, then the EIR should discuss the significance of being unable to test this obviously critical issue when exposure levels are likely to be highest.

18. The EIR should comment on the results of the County’s 2000/2001 Onsite air quality test (a copy of which we can provide you, if necessary), why the 2004/2005 air quality test resulted in contrary findings, and why the later test was used to the exclusion of the earlier test. Why did the County not reconcile the two tests, given the significance of the issue?

We respectfully request that the comments of the Marin Bay Park homeowners be carefully considered.

[PLEASE SEE ATTACHED SIGNATURE PAGES]
Sincerely yours,

[Signature(s)]

Donald Widder

Printed Name(s)

12 Marin Bay Park Ct.
San Rafael, CA 94901

Address

Sincerely yours,

[Signature(s)]

William E. Heskow

Printed Name(s)

16 Marin Bay Park Ct.
San Rafael, CA 94901

Address
Sincerely yours,

[Signature(s)]

JOHN C. WALSEY
Printed Name(s)

20 Mission Bay Blvd
San Francisco, CA 94901
Address

Sincerely yours,

[Signature(s)]

David E. Castello
Printed Name(s)

28 Mission Bay Park Ct.
San Francisco, CA 94901
Address
Sincerely yours,

Gary Riffkind, Joyce & Riffkind

21 Marin Bay Park Court
San Rafael, CA 94901

Sincerely yours,

Amanda Metcalf

29 Marin Bay Park Court
San Rafael, CA 94901
Sincerely yours,

James Green  
Signature(s)

LOIS SCALI  
FRANK SCALI  
Signature(s)

James & Marianna Dillon  
Printed Name(s)

32 Marin Bay Park Ct  
San Rafael, CA 94901  
Address

40 Marin Bay Park Court  
San Rafael, CA 94901  
Address
Sincerely yours,

Robert Niemann
Cynthia Fitzgerald

Address
41 Marin Bay Park Ct.
San Rafael, CA 94901

Signature(s)
Printed Name(s)

Sincerely yours,

Charles M. Louderback
Miranda Wagner

Address
44 Marin Bay Park Ct
San Rafael, CA 94901

Signature(s)
Printed Name(s)
Addendum to Item #6 of the letter from the Marin Bay Park Homeowners

It is a matter of public record that the Dillingham Corporation, operators of the quarry prior to its purchase by Dutra, notified the city and county of its intention to cease quarry operations in 1992. The Peacock Gap neighborhood plan was adopted based on this information.

At that time the Peacock Gap Neighborhood plan was adopted, we lived on San Marino Court, a neighboring street. Based on the information that the quarry would cease operation, we proceeded to build our new home in Marin Bay Park. Had we known that the quarry operations would continue and expand, we would not have built our home in Marin Bay Park.

Very truly yours,

[Signature]

Alan and Kathy Pallie
47 Marin Bay Park Ct.
San Rafael

47 Marin Bay Park Ct.
San Rafael, CA 94901
Sincerely yours,

Michelle R. Sharei

Signature(s)

Melinda Bromberg

Signature(s)

Address:

48 Main Bay Pk., CT

48 Main Bay Park Camp

S.R. Sra. 74001
Sincerely yours,

Signature(s)

Giuseppe Aliastro & Vanda Alicastro
Printed Name(s)

56 Marin Bay Park Cr.
San Rafael CA 94901-8304
Address

Sincerely yours,

Signature(s)

Charles H Greene, Dean
Printed Name(s)

60 Marin Bay Pk. Cr.
San Rafael, CA
Address
Sincerely yours,

Signature(s)

James Thomas, City of San Rafael
Printed Name(s)

63 Marin Bay Park Cir.
San Rafael, CA 94901
Address

Sincerely yours,

Signature(s)

Shane Chandler, Chris Schwoerer
Printed Name(s)

67 Marin Bay Park Cir.
San Rafael, CA 94901
Address
Sincerely yours,

Vernon E. Weldon

Signature(s)

VERNON E. WELDON

Printed Name(s)

72 Marin Bay Park Ct.
San Rafael, CA 94901

Address

ADDITIONAL SIGNATURE PAGES ATTACHED FROM NEIGHBORS RESIDING ON SAN MARINO COURT (ADJACENT TO MARIN BAY PARK COURT)
Sincerely yours,

Daniel K. Reich

Ellen Goldstein Reich

2 San Marino Court
San Rafael, CA 94901

Address

Sincerely Yours,

Victoria D. Kalabokes

Chris Paul Kalabokes

4 San Marino Court
San Rafael, CA 94901

Address
Sincerely Yours,

[Signature]

Tory O'Keefe
Printed Names
Edward Lynch

3 San Marco Ct.
SR, CA 94901
Address

Sincerely Yours,

[Signature]

Paula Irons

[Signature]

Printed Names

7 San Marco Ct.
San Rafael, CA 94901
Address
Comment Letter 23: Marin Bay Park Homeowners

23-1 Regarding the toxicity of crystalline silica, please refer to the response to comment 30-13.

Regarding the statement that the Draft EIR does not sufficiently draw a distinction between “naturally occurring silica and fractured silica that is only produced during mining activities,” the Draft EIR does not draw this distinction because it is factually incorrect: crystalline silica is a common mineral and crystalline silica dust, from natural sources and processes, as well as from extraction, manufacturing, use, and demolition of mineral products, is also common in the environment. As stated in the U.S. Bureau of Mines publication, *Crystalline Silica Primer*:

All soils contain at least trace amounts of crystalline silica in the form of quartz. It may have been part of the rock that weathered to form the soil, it may have been transported, or it may have crystallized from an amorphous (*that is, a noncrystalline*) silica that formed during the weathering process. Quartz is also the major component of sand and of dust in the air. Quartz is present in igneous rocks—hut only those that contain excess silica. As magma cools, olivine, pyroxenes, amphiboles, feldspars, and micas form first. These minerals (*all silicates*) need silica to form, because silicates are made from silicon, oxygen, and a metal, usually one of the six most common metals. Quartz forms only if sufficient silicon and oxygen are left over after these silicates have formed. Nature's odds are stacked in quartz's favor, however. The fact that quartz is the second most common mineral in the world (*feldspar is most common*) indicates that plenty of silicon and oxygen were left over during the cooling process to allow ample quantities of quartz to form. In fact, the average quartz content of igneous rocks is 12%. (U.S. Bureau of Mines, 1992).

This source goes on to state that crystalline silica occurs commonly in all three types of rock: igneous, sedimentary, and metamorphic. For more on the distinction between amorphous silica and crystalline silica, see the response to comment 30-16.

23-2 As stated in the Draft EIR, the nearest and most exposed residential receptors can be expected to be exposed to crystalline silica levels below OEHHA’s chronic REL of 3.0 micrograms per cubic meter (µg/m³). As shown in Table 4.2-17 in the Draft EIR, the Hazard Index Rating at the site of the Maximum Exposed Individual (MEI) for crystalline silica exposure is 0.56; this translates to 1.68 µg/m³. As shown in Figure 4.2-6 in the Draft EIR, the location of the MEI is in the vicinity of Marin Bay Park Court. Note also that, as discussed in the Draft EIR, the modeling is intended to provide the worst case estimate of exposure. Therefore, even the most exposed residents in the vicinity of the Quarry can be expected to experience exposure to crystalline silica dust well below the REL established by OEHHA. The findings of a County-sponsored air quality study conducted in 2004, which found no detectable quantities of crystalline silica in 15 filter samples taken downwind of the Quarry, tends to support this conclusion; see page 4.2-19 in Section 4.2, Air Quality.
23-3 The HRA presented in the Draft EIR examines the potential for emissions of crystalline silica from the Quarry to cause chronic health effects. Please see also the response to comment 30-13.

23-4 The history of court proceedings, complaints, and violations associated with Quarry operations is discussed in the Draft EIR in Chapter 3, Project Description, and elsewhere in the document. Please note that all mitigation measures identified in the Final EIR will become conditions of approval or otherwise enforceable standards. Draft Mitigation Monitoring responsibilities and procedures are described in the Draft EIR.

23-5 Blast vibrations are identified in the Draft EIR as a significant impact (Impact 4.7-7). Regarding the perception of blast vibrations, the following is taken from the text of Impact 4.7-7 (on page 4.7-29 of the Draft EIR):

…under certain conditions, humans and animals can be startled or annoyed by blast-induced ground vibration. Research has also shown that the human response to transient vibrations--like those caused by blasting--varies depending on exposure time and the intensity of the motion…. Historical data indicate that the intensities of peak ground motions near residential properties around SRRQ approach and occasionally exceed 0.25 in/s. Available studies indicate that complaints are likely when the intensity of ground motions exceed 0.2 in/s. As previously stated, the Marin County Department of Public Works has received numerous complaints in recent years regarding vibrations from blasting, while vibration monitoring indicates that 100 percent of vibration levels monitored independently (by Vibra-Tech under contract to the County) at locations within and close to surrounding residential areas during 2005 were below 0.2 in/s."

Please see also Master Response 8.

23-6 Please refer to Master Response 11.

23-7 An examination of what residents did or did not know regarding health risks or other adverse effects of the Quarry in the past would not be relevant to the impact analysis in the EIR. The EIR does contain an analysis of the cumulative health effects of past Quarry operations with proposed future operations and reclamation (Impact C4.2-12 in Section 4.2, Air Quality), based on current scientific understanding of the dispersal of pollutants and the health effects of exposure to these substances. Note that the Superior Court found that, while the Quarry is out of compliance with its Amended Reclamation Plan, it has a vested right to continue to mine.

23-8 There is no indication that the reference exposure limit for crystalline silica is being exceeded at the location of sensitive receptors (Impact C4.2-10 in Section 4.2, Air Quality). Because there is no significant impact in this regard, the County does not have the authority to impose the suggested monitoring as a mitigation measure in the EIR.
Such a requirement could, however, be taken up by the Board of Supervisors when considering the merits of the project.

23-9 It is unclear why the commenter feels that investigating the number of truckloads from SRRQ that are delivered within Marin County has a bearing on the environmental analysis. The Air Quality analysis uses a conservative assumption (i.e., a likely overestimation) that the average truck trip length is 80 miles one way. Since the Superior Court found that SRRQ has a vested right to continue to mine the site, the EIR does not identify shutting down the Quarry as a viable alternative to the AQP (see the description of the No Project/Status Quo Alternative commencing on page 6-24 of Chapter 6, Alternatives), and so does not examine other sources of materials produced by SRRQ.

23-10 The commenter apparently has incorrect assumptions regarding the methodology for the health risk assessment. Please refer to Master Response 5 in Section 7.2 of this document.

23-11 In accordance with CEQA, the EIR includes all feasible mitigation measures to reduce significant impacts to below significance levels, if possible.

23-12 The berm in question is proposed as a part of the Amended Reclamation Plan, and appears not to have a function for ongoing mining operations, other than as an additional means of buffering noise and visual impacts of operations. Note that the stockpiling of topsoil and other materials for future use in site reclamation, including loading and hauling of material to stockpiles for this purpose, is considered reclamation under SMARA (see pages 3-16 and 3-17 in Chapter 3, Project Description).

23-13 The June, 2001 Marin County Grand Jury Report, “Who’s Minding the San Rafael Rock Quarry?” and three responses to the report from the County Board of Supervisors, the County Assessor-Recorder, and the County District Attorney’s Office were thoroughly reviewed in preparation of this Final EIR. No new information was found that would require a revision of the text or impact conclusions of the Draft EIR.

23-14 The Marin County Superior Court proceedings and findings are summarized on pages 3-15 and 3-16 of Chapter 3, Project Description. The Court did not comment on the Draft EIR.

23-15 The County is expeditiously proceeding with processing of SRRQ’s applications, including this environmental review. The process is not open-ended.

23-16 The EIR examines several alternatives to the AQP that would result in lowered emissions of toxic air contaminants, including the Mitigated Alternative, the Reduced Alternative, and the Barge Only Alternative. The ARP Mitigated Alternative would also result in reduced emissions. See more information on alternatives in Master Response 4 in Section 7.2 of this document. The HRA conducted for the projects includes analysis of both chronic and acute health risks (see Impact C4.2-10 regarding chronic health impacts and Impact C4.2-11, regarding acute health impacts). These include the potential for non-cancer health risks, including asthma and other respiratory and pulmonary diseases.
Since the Draft EIR does not identify exposure of nearby residents to crystalline silica emissions of the Quarry to be a significant impact (Impact C4.2-10), there is no nexus under CEQA to enable the County to impose such a measure as that described in the comment.

The EIR preparers did not have access to the Onsite report during preparation of the Draft EIR. However, since publication of the Draft EIR, we have reviewed the study, and make the following observations:

- The Onsite study was conducted eight years ago. Today, the mine employs a number of dust control measures that may not have been in effect in the fall of 2000. Also, in 2000, the fleet of trucks transporting materials to and from the mine had higher emissions than those used today, including higher rates of PM10 and PM2.5 emissions. The STI study, which also monitored ambient air pollutant levels in the vicinity of the Quarry, was conducted more recently, and is therefore more likely to reflect recent conditions;

- In 2000, total suspended particulates (TSP) was one of the pollutants of concern and was monitored. Now, TSP is regarded more as a nuisance and not considered a pollutant that can cause health effects, mainly because the particle size of TSP can range from 30 microns up to 200 microns, and therefore much of TSP is not respirable.

In conclusion, while the Onsite report provides some indication of effects of the Quarry in the fall of 2008, the STI data reflects conditions in more recent times, and reports pollutants that are currently of concern.

The 1982 Peacock Gap Neighborhood Plan designates the SRRQ property (then called the Dillingham property) as a mineral resource area for 10 to 12 years. The Draft EIR identifies a significant, unavoidable impact due to continued Quarry operations and reclamation, which is found to be incompatible with the surrounding residential land uses. See Impact C4.6-7 in Section 4.6, Land Use and Planning. See also Master Response 9 in Section 7.2, Master Responses.
April 11, 2008

Tim Haddad
Environmental Coordinator
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, CA 94903-4157

Re: San Rafael Rock Quarry

Dear Mr. Haddad,

It has come to our attention that the Marin County Board of Supervisors will be conducting a public hearing to review comments regarding the County’s draft EIR relating to the San Rafael Rock Quarry (SRRQ).

Kjeldsen, Sinnock & Neudeck, Inc. (KSN) is the consulting engineers for over 25 Reclamation Districts throughout five counties, who are responsible for repairing, maintaining and providing emergency response to the delta levee system. The delta levee system protects homes, businesses, human life and the future economic stability in these communities. The Delta levees also protect the state's water conveyance system that is vital to the state and global economy.

SRRQ is a unique resource that provides rock materials to carry out preventative and emergency maintenance on the delta levee system. Not only does the SRRQ provide the primary source of materials needed, it is also the only source of marine-based activities and the only quarry in Northern California with direct loading access to barges. Marine based equipment is often the only way to access levee repair sites.

The delta levee system, home and business owners, members of the surrounding communities are dependent on the use of rock bank protection and the loss of the SRRQ will make it extremely difficult to maintain the delta levee system in an efficient and cost effective manner.

In conclusion we would like to convey the importance of keeping SRRQ an active mining operation. Prohibiting SRRQ from conducting business would detrimentally affect millions of people, including those who are in opposition of keeping SRRQ an active business.

Sincerely,

KJELDSEN, SINNOCK & NEUDECK, INC.

William G. Darsie

cc: San Rafael Rock Quarry
Reclamation District Offices

24-1 This comment does not address the environmental impact analysis, but rather the merits of the project. Please refer to Master Response 12 in Section 7.2 of this document.
Comment Letter 25

April 12, 2008

Tim Haddad, Environmental Coordinator
Marin County Community Development Agency
Marin County Civic Center
3501 Civic Center Drive
San Rafael, CA 94904

Re San Rafael Quarry Amended Reclamation Plan and Amended Surface Mining and Quarry Permit Draft Environmental Impact Report.

Dear Mr. Haddad:

Thank you for the opportunity to comment on the San Rafael Rock Quarry Amended Reclamation Plan and Amended Surface Mining and Quarry DEIR. Our comments generally focus on the biological and water resources and are below. First we have a few overall comments:

Environmental Baseline
We join other members of the public in questioning why the DEIR ignores the court’s determination in defining the environmental baseline. We are particularly concerned that the areas identified as remaining in a Natural State (especially the South Hill) are not included. At minimum these court-defined areas should be included as an alternative.

Mitigation Monitoring
Throughout the document, the Marin County Department of Public Works (DPW) is repeatedly identified as being the sole overseer of the mitigations. In the Biological section alone, the DPW is identified as:
- reviewing revisions to updated plans,
- ensuring wetland setbacks are constructed and maintained,
- ensuring BMPs avoid construction related impacts on wetlands are implemented, and
- reviewing revisions to the plan to verify that bat survey reports have been submitted.

Additionally, the DEIR identifies the DPW as being the entity responsible to monitor various mitigation measures under Land Use, Noise, Air Quality, Hydrology and Water Quality, and perhaps others. How many mitigations would bet DPW be responsible to review? Provide a list of these mitigation measures.

The DPW has limited resources. What certainty is there that DPW will be able to carrying out this myriad of monitoring tasks? What enforcement authority does DPW have in implementing such tasks? Also, would the quarry be charged for this monitoring? Wouldn’t this set up a
potential conflict of interest situation? If so, how could this be remedied? How can the public participate in this process to better ensure compliance?

BIOLOGICAL RESOURCES

Oak Woodlands
The south and western facing slopes of South Hill are described as having many native species. Why is this remnant not recommended for protection? Are there native oaks or other native trees on other parts of the property other than South Hill? If so what are they and where are they?

Eucalyptus Groves
Eucalyptus trees are introduced, invasive plants that have a number of adverse impacts on natural resources here. In addition to being pyrofitic and they lose limbs easily, they take up space that could be used by natives, exude oil that inhibits the growth of native understory leaving the ground underneath, only litter of eucalyptus bark and leaves. While eucalyptus may provide occasional nest site for raptors and herons, they provide minimal habitat for other native species and cause the death of many warblers that feed on nectar. Eucalyptus nectar blocks the air passages of small birds with short bills which causes death because they cannot breathe. There are no short billed small birds in Australia, where eucalyptus are native.

The DEIR should identify special characteristics of these trees that warrant their retention. Do they have nesting raptors or colonial nesting birds? Otherwise, they should be replaced with native trees.

Wetlands
Are there any areas of salt marsh along the bay edge of the property? Figure 4.3-1 does not show any but it is unclear whether that is because there are none or they are too narrow to show up. The discussion on page 4.3-9 fourth paragraph, states that riprap provides some of the habitat values as rocky shorelines. It should also note that artificial riprap has adverse impacts. It harbors non-native rats that live within the spaces between the rocks. Fresh water seeps are a rare resource. How would we prevent the fresh water seeps from being lost?

IMPACTS
Impact R.3-2 Loss of native vegetation
The discussion should clarify whether the native trees and grassland on the small South Hill are the only areas of native trees and grasses. Are there any other areas where there are native trees or other plants. If so, what will be their fate?
If future plans are proposed to alter the small hill for post-reclamation development, then what will assure there is adequate mitigation. This measure does not recommend that mitigation be assured then.

Large areas of the site will be covered with berm created with material left from quarry operations. How will it be assured that vegetation will grow on this material?
Impact 4.3.3 Impact to Point Reyes Bird Beak and Gairdners Yampah Mitigation 4.3-3 (page 4.3-30) Who will decide whether protection of these species, if found, is feasible and whether salvaging is feasible? What certainty is there that there would be an on- or off-site place to plant the salvaged seeds or plants? Where could they be planted on-site?

Impact 4.3-4 Removal of Protected Trees This mitigation seems to be built on the assumption that the trees will be damaged. Why can’t permanent cyclone fencing be erected beyond the dripline to mark and protect the trees? For accidental loss, replacement of native oaks at 2:1 ratio is unacceptable. Mitigations should be at least 10:1 with large monetary penalties for removal of trees that have not been pre-approved.

Impact 4.3-5 Wetlands “...relatively small and isolated from other similar habitats, it is unlikely they will ever again support the full suite of salt-marsh species that they once may have no matter what measures were taken to restore them....” The EIR should present an historic analysis of the marshes on the sites. It is unlikely these marshes ever were large and connected with other large marshes similar (presumably this means other marsh habitats because the topography does not allow for extensive marsh plains. You can’t downgrade a marsh for lack of a condition that never existed there in the first place. These marshes are present because the area between the land and hills is low.

Further, the EIR should not underestimate what can be accomplished with return of tidal action and other protective and enhancement measures. If these activities were not effective, there would not be so much restoration taking place around the Bay.

The mitigation does not identify a setback buffer for wetlands. A 100-foot buffer is the minimum recommended in the Goals report and is the standard used these days. We urge that a 100-foot buffer from all wetlands (tidal, seasonal, seeps etc.) be recommended and that this area be planted with native vegetation that would provide cover, foraging and nesting habitat for species that would use the marshes. In addition, it should be required that hydrology be maintained to ensure these fragile wetlands endure.

Impact 4.3-6 Temporary Construction Disturbance to Biological Resources How many piles would be driven, and of what size?

Mitigation Measure R4.3-6c Describe the wetlands that would be impacted by construction of the connecting channel. How would they be replaced? What would be the least damaging way to accomplish the channel excavation?

Avoidance should be the mitigation of choice. The EIR should explain why the wetlands cannot be avoided. If avoidance is impossible, what mitigation is recommended to replace the area of lost wetland? A mitigation ratio of not less than 2:1 should be recommended and be located on-site.
Impact 4.3-8 Red-legged Frog
What is the time period recommended by USFWS to do the baseline surveys?

Impact 4.3-10 Bat Impacts
The discussion indicates that the site is known habitat for bats.
Fifth Bullet - if known bat habitat is destroyed, replacement habitats should be constructed prior to that destruction. No timing is given in this mitigation. What good does it do to replace habitat days, weeks or months later after the bats have been displaced and have gone somewhere else or died, due to lack of habitat? No bat roosts should be destroyed until replacement roosts are in place. Who will assure replacement habitats are constructed if some are lost. Who will determine adequacy of bat roost recommendations?

Impact 4.3-11 Special Status nesting raptors
Discuss the impact of the permanent loss of any native trees on raptor nesting.
The work window for raptors does not consider nesting time for owls, which is generally earlier than for hawks and accipiters.

Impact 4.3-12 Long term adverse impacts to Special Status species in the marsh
Increased human presence, noise, more domestic animals, including cats and dogs should be identified as impacts and mitigation measures addressed. We agree with mitigation fencing, lighting, and education program, however, these are not enough. The EIR should address a prohibition on unleashed dogs and cats. Also, the marsh edge should be planted with native shrubs, forbes and grasses such as baccharis, leymus, and grindelia suitable for providing cover and nesting habitat for marsh dependent species to buffer the impacts of human use.

4.3-13 Red-legged Frog Impacts
How was a buffer of 50 feet determined? This width does not seem to be wide enough to protect an endangered species. The standard for marsh buffer is 100 feet. Why should an aquatic habitat with endangered species have a buffer that is half the distance?

Impact C4.3-18 Cumulative Impacts
While the existing activities may degrade the marsh habitat, it still has some habitat value.
We agree that the tidal marsh restoration should be done now and urge that surveys be conducted seasonally, beginning now and on an annual basis.

HYDROLOGY

How deep would the entrance channel be dredged? Would this have any effect on water quality within the flooded quarry bowl?

Impact 5.4.5-2 and 4.5-4 Potential for erosion to degrade surface waters
Substantial material, fines and other materials left from quarrying, would be placed as berms or stockpiled. Discuss the potential for these berms to slump or erode, causing sedimentation downslope.
Impact/Mitigation R4.5-8 Sea Level rise impacts
How much of the site would be expected to be subject to flooding under sea level rise projections used by BCDC? Show these areas on a site plan.
As a mitigation for this impact, consider not allowing development in the areas that would be subject to flooding.

NOISE

Many of the noise levels are just below the County standards for significance. How do Marin County’s noise standards compare with those of other similar areas?

Discuss the possibility that noise from the quarry operation is impacting species that may use the Bay. Could rafting birds in San Rafael Bay be affected? For example, is there lower use by rafting birds in winter around the perimeter of the site? This pattern could be caused by noise disturbance.

ALTERNATIVES

As mentioned above, the court decision that five sections of the site be retained as “natural areas” should be included and addressed as an alternative.

Thank you for addressing our questions and concerns.

Sincerely,

[Signature]

Barbara Salzman, Co-chair
Conservation Committee
7. Comments and Responses

7.3 Comments on the Draft EIR and Responses

Comment Letter 25: Marin Audubon Society

25-1 This comment is preamble and does not require a response.

25-2 The commenter is incorrect in stating that the Draft EIR ignores the court’s determination in defining the environmental baseline. As stated in Chapter 3, Project Description, the environmental baseline for ARP04 includes all conditions contained in the ARP82. This includes the areas shown in Figure 3-5 that are to be preserved in their natural state.

25-3 Since the Marin County Department of Public Works is the agency responsible for administering the Surface Mining and Quarrying Permit and the Amended Reclamation Plan, it is generally cited as the agency responsible for enforcing permit conditions and mitigation measures. Where this responsibility is shared with other agencies, it is so noted in the Draft Mitigation Monitoring Measures contained in the Draft EIR.

25-4 Specific areas of native grasslands and oak woodland on the south and western facing slopes of South Hill are, in fact, proposed for preservation under ARP04. Please also refer to Master Response 3 in Section 7.2 of this document.

25-5 It is not within the scope of this EIR to evaluate the potential adverse effects of eucalyptus on wildlife. Please refer to Master Response 3 in Section 7.2 of this document.

25-6 There are no areas of native salt marsh along the Bay edge of the property. If there had been they would have been mapped and included on Figure 4.3-1. There were several areas of non-native cordgrass (Spartina alterniflora and/or hybrids) located along the shoreline but these were not mapped as they were the subject of regional control efforts conducted by the Invasive Spartina Project (see www.spartina.org) and have likely been eradicated as of this writing.

25-7 Impact R4.3-2 discusses three areas of potential and/or expected removal of native vegetation, not just a single area as implied by the commenter. See pp. 4.3-27 and 4.3-28 in Section 4.3, Biological Resources. Any future development of the small hill would be included in the Final Development Plan, which would undergo its own environmental review process. Other areas of native vegetation are to be preserved in their natural state; see Figure 3-7 in Chapter 3, Project Description. Please see the Standards for Revegetation incorporated into ARP04 and as described in Chapter 3, Project Description. Implementation of these standards would ensure that vegetation would grow on reclaimed areas of the site.

25-8 Mitigation Measure 4.3-3c states that protection of special-status plant species will be coordinated by a qualified biologist and that, if populations cannot be avoided they will be restored on-site in areas that are to remain as post-reclamation open space, such as the Grassy Knoll or the western slopes of South Hill.
25-9 Under ARP04, the majority of native trees on-site are protected because the areas in which they occur are to be preserved. Impact Statement 4.3-4 does not make the assumption that trees will be damaged, rather it points out the potential for damage to occur and provides mitigation measures to minimize and compensate for any such damage. See Mitigation Measure 4.3-4c for specific measures, which include protective fencing and special construction techniques within the dripline of trees that are not to be removed. The project is in compliance with Marin County’s Native Tree Preservation and Protection Ordinance, even though removal of trees within an approved mining area or as part of an approved reclamation plan does not require a permit under the Ordinance and the applicant would therefore not normally be subject to the requirement to provide replacement trees. The Marin County Ordinance does not establish a replacement ratio for removed trees. In this context, a replacement ratio of 2:1 for native trees therefore seems reasonable for this project.

25-10 The Draft EIR does, in fact, present an historical analysis of the SRRQ marshes, which was presented in the Setting section on p. 4.3-7, as well as in the cumulative impacts analysis. Please see Impact C4.3-18 (Impacts of the ARP and AQP on the salt marshes present at the project site would make a considerable contribution to cumulative impacts on marsh habitat). The commenter is incorrect in stating that no setback buffers are established for wetlands. Mitigation Measure R4.3-5b establishes a minimum 100 foot buffer for the NW Quadrant marshes that is consistent with the Marin Countywide Plan. Furthermore, Mitigation Measure R4.3-5b establishes a minimum 50 foot buffer for all seeps and seasonal wetlands.

25-11 Post-reclamation of the site, including such activities as pile driving, is examined only at a programmatic level in this Draft EIR. The number and size of piles to be used is not known at this time. This information is not relevant, given that the potential impacts have been disclosed and measures are proposed to minimize them. In addition, the regulatory requirements governing activities such as pile driving and dredging in San Pablo Bay are stringent and are intended to ensure that impacts associated with these activities would be less than significant.

25-12 Please refer to Master Response 10 in Section 7.2 of this document.

25-13 The commenter asks about the time period recommended by U.S. Fish and Wildlife Service (USFWS) for baseline surveys for red-legged frog. The information the commenter is seeking is unclear. However, the first step in determining presence/absence of the species, as outlined in Mitigation Measure R4.3-8b is a California red-legged frog habitat assessment, conducted according to USFWS guidelines. Such assessments can be done at any time of year but are best done when water bodies at a given site still contain water (if ephemeral).

25-14 Comment noted. Mitigation Measure R4.3-10 is revised as follows:
Mitigation Measure R4.3-10: The applicant shall conduct reclamation activities involving tree removal and building demolition in a manner that avoids disturbance or mortality of bats, through surveys to determine whether bats are present, and, if so, to limit reclamation activities as specified below. Specifically, the applicant shall take the following measures to avoid direct mortality of roosting special-status bats and disturbance of maternity roosts or winter hibernacula:

- A qualified bat biologist, acceptable to the CDFG, shall conduct surveys of all potential bat habitat within 500 feet of reclamation activities prior to initiation of such activities. Potentially suitable habitat shall be located visually. Bat emergence counts shall be made at dusk as the bats depart from any suitable habitat. In addition, an acoustic detector shall be used to determine any areas of bat activity. At least four nighttime emergence counts shall be undertaken on nights that are warm enough for bats to be active. The bat biologist shall determine the type of each active roost (i.e., maternity, winter hibernaculum, day or night).

- Removal of trees or demolition of buildings showing evidence of bat activity will occur during the period least likely to impact the bats as determined by a qualified bat biologist (generally between February 15 and October 15 for winter hibernacula and between August 15 and April 15 for maternity roosts). If active day or night roosts are found the bat biologist shall take actions to make such roosts unsuitable habitat prior to tree removal or building demolition.

- A no-disturbance buffer shall be created around active bat roosts being used for maternity or hibernation purposes at a distance to be determined in consultation with CDFG. Bat roosts initiated during construction are presumed to be unaffected, and no buffer is necessary. However, “take” of individuals, including harming, harassing, or killing, will be prohibited.

- If pre-construction surveys indicate that roosts are inactive or potential habitat is unoccupied during the reclamation or construction period, no further mitigation is required. Trees and buildings that have been determined to be unoccupied by special status bats and that are located outside the no-disturbance buffer for active roosts may be removed or demolished.

- If known bat roosting habitat is to be destroyed during tree removal or building demolition activities, artificial bat roosts shall be constructed at least two weeks prior to such disturbance in an undisturbed area of the property, at least 200 feet from any ongoing or future activities. The design and location of the artificial bat roost(s) shall be determined by a qualified bat biologist.

The same language has been revised in bullet number 5 of Mitigation Measure P4.3-16:

- If known bat roosting habitat is to be destroyed during tree removal or building demolition activities, artificial bat roosts shall be constructed at least two weeks prior to such disturbance in an undisturbed area of the property, at least 200 feet from any ongoing or future activities. The design and location of the artificial bat roost(s) shall be determined by a qualified bat biologist.
The commenter asks for a discussion of the impact of permanent loss of native trees on raptor nesting. If raptors were to use the SRRQ site for nesting they are more likely to nest in the eucalyptus on South Hill and along the road to McNear’s Beach County Park, most of which are to be preserved, than the smaller native oaks that are present on the project site. The permanent loss of native trees as a result of continued quarrying and/or ARP04 will be minimal and would therefore have no significant impact on nesting raptors as there are substantial areas of open space to the north and west of the project site that support many native trees that can be used by raptors for nesting.

The commenter also states that the nesting period for owls begins earlier than for other raptors and that the breeding bird window specified in Mitigation Measure R4.3-11 does not fully cover them. This is true for great-horned and barn owls, which can begin nesting as early as January 1. The same dates are used in Mitigation Measure P4.3-15. Therefore, Mitigation Measures R4.3-11b and P4.3-15 are revised as follows:

**Mitigation Measures Identified in this Report**

**Mitigation Measure R4.3-11b:** The applicant shall conduct reclamation and post-reclamation development activities in a manner that avoids direct losses of nests, eggs, and nestlings and indirect impacts to avian breeding success. Specifically:

- During the breeding bird season (January 1 through August 31) a qualified biologist will survey activity sites for nesting raptors and passerine birds not more than 14 days prior to any ground-disturbing activity or vegetation removal.

- If reclamation or construction activities occur only during the non-breeding season between September 1 and January 31, no surveys will be required.

- Results of the surveys will be forwarded to CDFG (as appropriate) and avoidance procedures will be adopted, if necessary, on a case-by-case basis. Avoidance procedures shall be reviewed and approved by CDFG. Depending on the species involved, these may include construction buffer areas (up to several hundred feet in the case of raptors) or seasonal restriction of activities.

**Mitigation Measures Identified in this Report**

**Mitigation Measure P4.3-15:** The applicant shall conduct Quarry operations in a manner that avoids direct losses of nests, eggs, and nestlings and potential indirect impacts to avian breeding success resulting from vegetation removal as well as variability in quarrying activity levels on South Hill. This mitigation measure will be implemented through the following:

- During the breeding bird season (February January 1 through August 31) a qualified biologist will survey sites for nesting raptors and passerine birds not
more than 14 days prior to any vegetation removal (including trees, shrubs, scrub, and grassland vegetation). In addition, vegetation on South Hill will be surveyed if quarrying activities on South Hill cease for a period of more than one week during breeding bird season.

- Surveys shall also be conducted during breeding season in those areas of the project site that a qualified biologist determines may have nesting special status bird species present that could potentially be impacted by indirect noise impacts of operations such as truck traffic or blasting at that time.

- If vegetation removal or cessation of mining activities on South Hill occurs only during the non-breeding season, between September 1 and January December 31, no surveys will be required.

- Results of the surveys will be forwarded to the County and CDFG (as appropriate) and avoidance procedures will be adopted, if necessary, on a case-by-case basis that will ensure that the potential for an impact on any nesting raptors or passerine birds is eliminated. Depending on the species, these can include buffer areas (up to several hundred feet in the case of raptors) or seasonal avoidance. Vegetation of any kind identified as supporting active nests will not be removed until nestlings have fledged. If survey results are positive for nesting birds, vegetation removal or mining on South Hill will not occur until submittal and review of reports and implementation of any necessary avoidance measures. Special-status bird sightings shall also be submitted to the CNDDB.

25-16 Please refer to Master Response 10 in Section 7.2 of this document.

25-17 Please see the response to comment 19-113. The width of the buffer area has been revised to reflect current USFWS standards, i.e., 300 feet instead of 50 feet.

25-18 Comment noted. The Draft EIR acknowledges the habitat values offered by the SRRQ marshes. Please refer to Master Response 10 in Section 7.2 of this document for a discussion of marsh restoration.

25-19 The applicant’s Harbor Feasibility Study recommends a channel depth of 12 feet below mean low low water, 2H:1V side slopes, and a width of 75 feet. Effects related to dredging, including water quality effects, are addressed in Section 4.5, Hydrology and Water Quality. See Impact R4.5-3 (sedimentation inside the entrance channel may result in the need for periodic dredging operations and water quality impacts); this impact is found to be less than significant. These issues are also discussed in the Technical Memorandum: Review of Harbor Feasibility Study conducted by Coast and Harbor Engineers in preparation of the Draft EIR - see Appendix I of Volume III. See also comments 19-116 and 19-117, and the responses to these comments, above.

25-20 These effects are discussed in Section 4.5, Hydrology and Water Quality: see Impact R4.5-2 (grading associated with the proposed ARP would increase the potential
for eroded sediments to degrade the quality of surface water sources including San Francisco Bay), which is found to be significant, but which can be mitigated with the specified mitigation measures; and R4.5-4 (project construction would involve activities that would generate erodible soils that could affect stormwater runoff and degrade water quality), which is found to be less than significant.

25-21 The concern regarding sea level rise and the possibility of portions of the site becoming inundated is addressed in Section 4.5, Hydrology and Water Quality; see Mitigation Measure R4.5-8.

25-22 Please see Master Response 11, Noise Standards and Methods, in Section 7.2, Master Responses.

25-23 Noise impacts on birds at the Marin Islands are discussed on p. 4.3-52 in Section 4.3, Biological Resources. By inference the same arguments regarding noise emanating from quarry operations would apply to birds and other wildlife using San Rafael Bay, since the islands are situated in this bay. There is little to no readily available information on the distribution and numbers of rafting birds in San Rafael Bay. As with any other wildlife population, their numbers undoubtedly vary over time, due to a number of factors, and it would be impossible to find a significant correlation between this variation in numbers and quarry noise, or any other single factor, without prolonged study, which is beyond the scope of this analysis.
General Comment

We commend the DEIR preparers for making a valiant effort to describe individually these two, intertwined projects—a little like trying to separate Siamese twins conjoined at the breastbone by a decades-old operational, regulatory, and legal history and a common bloodstream. For the most part, the DEIR does this successfully — that is, we can recognize those impacts associated solely with reclamation and those associated with mining operations, and those (cumulative impacts) that would result from their simultaneous occurrence. The analysis is complicated in that more than one baseline applies.

The DEIR is generally thorough in its analysis of impacts, and we agree with many of the findings of significant and unavoidable impact. We also find a number of deficiencies. These are preliminary comments. We will provide more specific comments in writing.

Concerns

1. “Certain activities” (enjoined by the Court) should be excluded from baseline

The DEIR defines baseline for the ARP as the extent of permitted activities contained in the amended 1982 reclamation plan, when the quarry operation became legally non-conforming. Differences between what is now proposed in ARPO4 and what has been allowed under ARP82 are evaluated as potential impacts. In 2004, the Court found that certain activities engaged in by SRRQ exceeded the scope of their 1982 legal mandate, notably in the Northeast Quadrant, and enjoined the SRRQ from “depositing any overburden, tailings, dredged material or other waste materials in the Brick Resource Area (the northeast quadrant).” The DEIR, on page 3-15, refers to these deviations as “certain activities” but does not reveal what they are, their legal history, or how they relate to the reclamation activities proposed in the ARP04.

The noise, air quality, and other impacts of these past unauthorized activities on the neighboring community should be included in the cumulative analysis that covers past, present, as well as foreseeable future components of the project. Certainly they should not be considered as baseline conditions.

2. Important impact analysis of post-reclamation development is either minimized or deferred to Phase 4

With the exception of impacts of the proposed deep-water harbor and impacts on wetlands, the DEIR provides only limited insight into the effects of post-reclamation land uses. This is due in part to the “baseline problem.” The post-reclamation conceptual land uses shown in ARPO4 do not differ greatly from those envisioned in ARP82 (except for a ferry landing). Therefore, only refinements to that concept are considered of potential impact significance. This results in a DEIR that minimizes impacts as less-than-significant because the “delta” between ARPO4 and ARP82 is relatively minor. Although the DEIR admits that air quality, noise and traffic impacts, or impacts to biological resources could be substantial, they cannot reach the significance threshold because of the baseline assumption.

A second problem results from deferring impact analyses such as for traffic, air quality, and water and other service demand until the end of mining operations (some 15 years hence). The DEIR states that future land uses and densities will be established by traffic studies at that time and therefore cannot be known now; plans will not be developed until the three-year period preceding cessation of mining operations. However, reclamation activities such as surcharging the Northwest Quadrant, will be carried out over the entire period, configuring the site to accommodate some presumed future land uses. The DEIR does not explain what these presumptions might be or provide a programmatic approach to anticipating possible impacts.

3. Mitigation measures for impacts to Biological Resources

The DEIR proposes many mitigation measures designed to reduce impacts to biological resources to a less-than-significant level. They are framed in generic terms that could apply to a single construction phase for a typical project where it is possible to conduct surveys for sensitive species once, design a
protection or restoration plan such as for revegetation, implement it, and monitor success for a post-construction period of five years. The SRRQ projects won't work that way. Instead, most of the impacts are associated with reclamation activities that could occur in eight to ten week episodes yearly over a period of many years. Resources especially in the Northeast and Northwest Quadrants would be most affected – disturbed and redisturbed as topsoil, overburden and fines are moved, mixed, moved again, and so on. Thus, the effectiveness of many mitigation measures in this DEIR to reduce impacts to less than significant levels is dependent on a high degree of human attention and continuity of effort over time. This would be largely the responsibility of a single agency, Marin County Department of Public Works (DPW), in collaboration with chronically underfunded and understaffed resource agencies. This does not inspire public confidence! To ensure that the mitigations proposed by both applicant and DEIR, the DEIR also needs to include a level of independent oversight, funded by the applicant, possibly in the form of a technical and/or community monitoring and reporting group to ensure that mitigation measures are implemented and to monitor their effectiveness.

Roger Rolus, President
Comment Letter 26: Marin Conservation League

26-1 This comment is preamble and does not require a response.

26-2 The Draft EIR summarizes the Court’s decision and order to provide background on the history of the regulatory process. Past activities in the NE Quadrant, whether consistent with the Quarry’s existing permits or not, are considered in the Draft EIR cumulative impacts analysis. See, for example, Impact C4.2-12 (cumulative health risk effects) and Impact C4.6-7 (cumulative and continuing land use incompatibility).

26-3 The Draft EIR does provide a description of the planned post-reclamation end use, and a programmatic impact analysis of post-reclamation development. SMARA requires preparation of mine areas for reclamation and post-reclamation land use. See the response to comment 21-3.

26-4 The SRRQ project site is already highly disturbed. Areas that are subject to continuous or near continuous disturbance are generally far less likely to support significant biological resources than less disturbed areas. If the results of the initial surveys are negative for specific plant and wildlife species, the chances that subsequent survey results will be positive will tend to decrease over time as site disturbance continues. The Biological Resources impacts and mitigation measures referred to by the commenter are designed, in one of several ways, to be implemented over the lifetime of the phased reclamation plan, as well as quarrying operations. For example, Mitigation Measure P4.3-15 states that breeding bird surveys shall be conducted during the breeding bird season whenever vegetation removal is to occur or when quarrying activities cease for a period of more than one week. The assumption is that birds that establish nests during ongoing quarrying activities are habituated to such activities. Mitigation Measure R4.3-3b calls for rare plant surveys prior to the beginning of each phase of reclamation activities, as well as during the planning for post-reclamation development. Mitigation Measure R4.3-b calls for a California red-legged frog habitat assessment, and depending on the results, protocol-level surveys for the species prior to filing grading permits for the first reclamation phase. If the results are negative, the need for future surveys will be determined by USFWS.

26-5 Please see the response to comment 25-3 regarding the responsibility for enforcement of permit conditions. The request for a technical or community monitor addresses the merits of the projects, not their environmental effects, and may be taken up by the Board of Supervisors when considering project approval.
April 9, 2008

Mr. Tim Haddad, Environmental Coordinator
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, CA 94903

RE: Draft Environmental Impact Report, San Rafael Rock Quarry Amended Reclamation Plan and Amended Surface Mining and Quarrying Permit

Dear Mr. Haddad:

Marin Conservation League appreciates this opportunity to comment on the adequacy of the above referenced DEIR. The DEIR is generally adequate in separating and describing these two, intertwined projects; with a notable exception (see Comment II.1, below), we can distinguish those impacts associated solely with reclamation from those associated with mining operations, and recognize the impacts that would result from the simultaneous occurrence of the two projects as well as cumulative impacts when past, present and reasonably foreseeable future actions are considered. The DEIR is generally adequate in its analysis of impacts, and we agree with many of the findings of significant and unavoidable impact. We believe that the DEIR considers an adequate range of alternatives for both reclamation and the quarrying operation.

There are also deficiencies in the DEIR that must be addressed in the Final EIR before it is certified. If, as appears likely, the San Rafael Rock Quarry (SRRQ) continues to operate within its vested right into the future, it must do so under conditions that will insure minimum impact on neighboring residents and wildlife habitat. The EIR must provide a solid basis for these conditions in identifying impacts and proposing effective mitigation measures and/or alternatives. We find a number of impacts that are understated or deferred to a later time because of the “baseline problem,” and we find too many mitigation measures that would be ineffectual as presented in the DEIR. Further, we feel that the EIR is not absolutely clear in assuring the public that there will be an open planning and permit review process for SRRQ’s continuing operations and phases of reclamation activities.

I. Baseline Problems

1. Actions that exceeded permit conditions are included in baseline. The DEIR defines baseline for the ARP as the extent of permitted activities contained in the amended 1982 reclamation plan, when the quarry operation became legally non-conforming. Differences between what is now proposed in ARP04 and what has been allowed under ARP82 are evaluated as potential impacts. The DEIR does not adequately explain why activities found by the court to exceed the scope of the SRRQ 1982 legal mandate in the Northeast Quadrant appear to be included in the baseline. These

Marin County’s Environmental Guardian

A nonprofit corporation founded in 1934 to preserve, protect and enhance the natural assets of Marin County.
include deposition of overburden and other waste materials in the Brick Resource Area (the northeast quadrant). The DEIR, on page 3-15, refers to these deviations as “certain activities” but does not reveal what they are or their legal history. At a minimum, the noise, air quality, and other impacts of these unauthorized activities on the neighboring community should be included in a cumulative analysis that covers past, present, as well as foreseeable future actions of the project. Certainly they should not be considered as part of ARP82 baseline conditions.

2. **Important impacts of post-reclamation development are minimized as less-than-significant.** With the exception of impacts of water quality in the proposed deep-water harbor and impacts on wetlands, which receive some analysis, the DEIR provides only limited insight into the effects of post-reclamation land uses. This is in part due to the “baseline problem.” Where conceptual post-reclamation land uses shown in ARP04 do not differ greatly from those envisioned in ARP82 (except for a ferry landing), only refinements to that concept are considered of potential impact significance. The DEIR minimizes impacts as less-than-significant because the “delta” between ARP04 and ARP82 is relatively minor, at the same time admitting that air quality, noise and traffic impacts, or impacts to biological resources from post-reclamation development could be substantial. For example, on Page 4.2-38, the DEIR states that emissions (from pleasure craft in the proposed marina) would exceed BAAQMD significance thresholds for CO, ROG, and PN-10, but since these emissions were already anticipated to occur under ARP82 they would not result in net increase in emissions from post-reclamation land use development over baseline conditions. Therefore implications and other impacts of post-reclamation development envisioned in ARP82 did not receive environmental review in 1982, and therefore should not be dismissed as less than significant simply because ARP04 does not show substantial differences from a baseline. (See also next comment below).

3. **Impact analyses such as for traffic, air quality, and water and other service demands are deferred until the end of mining operations (some 17 years hence).** A related problem results from deferring impact analyses to the end of mining operations. The DEIR states that future land uses (generally proposed by ARP04 to be residential, commercial/professional, recreational, and open space) and densities will be determined after approved traffic studies have been conducted. Therefore they cannot be known now; detailed plans will not be developed until three-years preceding cessation of mining operations. However, reclamation activities such as surfacing the Northwest Quadrant for future commercial uses, will be carried out in phases over the entire period. This phased reclamation will configure the site to accommodate some presumed but not yet approved future land uses. The DEIR lists these presumptions on Page 3-64, but does not provide sufficient programmatic analysis of their possible future impacts to support provisional approvals of future land use at this time.

II. Impacts and Mitigation Measures

1. **Impact R4.2-1 and Impact C4.2-8 (Air Quality) represent contradictory conclusions.** On Page 4.2-29, Impact R4.2-1 states that the proposed Amended Reclamation Plan (Phases 1, 2, and 3 and parts of Phase 4) would result in an increase in daily emissions of criteria air pollutants as a result of reclamation activities being conducted simultaneously with mining activities, instead of at the end of quarrying activities, as contemplated in the 1982 ARP. As a consequence, PM-10 and NOx emissions will
remain significant and unavoidable. In apparent contradiction to this, Impact C4.2-8
(Page 4.2-43) states that cumulative air quality impacts could result from quarrying
activities implemented under the Amended Surface Mining and Quarrying Permit but
that, with mitigations, these emissions would be no more than baseline and therefore
less-than-significant. “While emissions associated with reclamation grading cannot
be reduced to less-than-significant, operational emissions would not contribute to the
reclamation-related impact to a cumulatively considerable manner (our emphasis).”
Apparently the activities will occur simultaneously, but viewed from two different
perspectives (ARP04 and AQP1982), the same simultaneous occurrence of
reclamation and quarrying activities delivers two different impact conclusions. The
FEIR must explain this apparent contradiction.

2. C4.2-10 and 4.2-52ff. The DEIR’s analysis of the health risk from Crystalline Silica
dust concludes that the highest level of chronic exposure would be less than
significant and, therefore, does not require mitigation. We challenge that conclusion
inasmuch as the DEIR does not appear to take into consideration the cumulative
impacts of past quarrying operations since 1982 along with the future levels of
operation being proposed. We understand that there are Federal Health Risk
Standards that may apply and have zero tolerance for exposures to Crystalline Silica
beyond a certain cumulative exposure level. The DEIR needs to examine and analyze
in greater detail the cumulative effects of past, present, and proposed future
operations with respect to the health risk of Crystalline Silica on the neighborhood.
We submit that C4.2-10 should more properly be determined to be a significant and
unavoidable risk that requires mitigation measures.

3. R4.5-6. Regardless of whether or not the area of the Main Quarry Bowl is to be used
for a Marina or some other use, it will require filling with mining wastes or other
materials including dredge spoils. The DEIR lacks detailed information of exactly
how the Main Quarry Bowl will be reclaimed for future use and what will or should
be used to fill it. The Mitigated Alternative appears to propose that dredge spoils
from the San Francisco Bay may be used to reduce the final depth of the Main
Quarry Bowl to –30 feet if it should become a Marina. There will be environmental
effects from this proposed operation resulting from both the duration of its operation
and the possible use of contaminated dredge spoils containing toxic wastes. The
DEIR should expand its analysis of this proposed use of dredge spoils and assess the
full range of potential environmental impacts associated with this remedy for filling
the Main Quarry Bowl, along with appropriate mitigation measures.

4. Many mitigation measures designed to reduce impacts to biological resources to a
less-than-significant level are framed in generic terms that may be ineffectual for an
extended, multi-phased project. An example of this is Impact R4.3-4 (. . . damage
to or removal of protected trees . . .) and its associated standard mitigation measures
R4.3-4a through 4e. These include protective fencing and markers for the duration of
work; avoiding encroachment of equipment within drip-line; a five-year monitoring
program with performance standards for period of five years; and so on. Other
examples include mitigation measures R4.3-3b and c (special status plants); R4.3-10
(special status bat species); R4.3-11a and b (Special status raptors and other nesting
birds); and similar impacts of the AQP and their mitigation measures.
Such mitigation measures could apply to a single construction phase for a typical project where it is possible to conduct surveys for sensitive or protected species once, design a protection or restoration plan such as for revegetation, implement it, and, where required, monitor success for a post-construction period of five years. The SRRQ reclamation and quarrying activities won’t work that way. Instead, most of the impacts associated with reclamation activities will occur in *eight to ten week episodes yearly over a period of many years*. This will be like a never-ending construction project. Biological resources in the Northeast, Northwest, and Southwest Quadrants will be disturbed and re-disturbed for up to 17 years as topsoil is removed, moved and stockpiled and eventually distributed over the site. Overburden will also be removed, moved, mixed with pond fines, used to construct a large berm that will later be removed and for surcharge that will also be graded again. Impacts of the AQP also resemble those of a continuous construction project for which the only end is cessation of operations.

The FEIR must describe what extra measures will be taken to insure that each proposed measure can be applied to mitigate continuous disturbance over the life of the operation. One such measure is suggested below.

5. **Oversight to monitor and ensure effective and continuous mitigation.** With this kind of moving target and extended periods of activity, the effectiveness of mitigation measures such as the one cited above to reduce impacts to less-than-significant levels is dependent on a high degree of human attention and continuity of effort over time. The DEIR cites a single agency, Marin County Department of Public Works (DPW), repeatedly as being responsible for monitoring mitigation. In some instances where biological resources are involved, this would be done in collaboration with chronically underfunded and understaffed resource agencies. This does not inspire public confidence! To ensure that the mitigations proposed by both applicant and DEIR are consistently implemented, the DEIR also needs to specify an overriding mitigation measure – that is, a mechanism for independent oversight, funded by the applicant. This could take the form of a technical and/or community advisory group to report periodically that mitigation measures are being implemented and to evaluate their effectiveness over the life of the operation.

**Permit Reviews and Discretionary Actions**

The DEIR states on Page 3-28 that each phase of reclamation would be preceded by application for permits specific to that phase and that this document (DEIR) may be used as a basis for tiering of additional CEQA review of those permits. On Page 3-79, the DEIR under the topic of Administrative Actions and Next Steps states that “Improvement plans (e.g., grading plans for each reclamation phase) will be filed with the County prior to implementation. Approvals of the plans are administrative actions by County staff.” The FEIR must clearly lay out the conditions under which approvals would be discretionary, possibly prompting further CEQA review and public process, and those conditions under which approvals would be purely administrative, essentially excluding discretion and public review.
Miscellaneous Comments and Clarifications

Page 4.3-57: Mitigation Measure C4.3-18a cross references Mitigation Measure C4.3-5a. We could not find a mitigation measure so identified.

Page 4.3-58: Mitigation Measure C4.3-18b (Tidal Marsh Restoration Plan) lists as one element submitting a schedule for annual monitoring reports to the Community Development Agency. Under the following Mitigation Monitoring and Reporting paragraph, the responsibility for monitoring implementation of the Plan lies with the Department of Public Works. The FEIR needs to clarify how the relationship between the two agencies will work – or is the CDA referenced in error?

Page 4.4-18: Impact R4.4-2 (Soil erosion and loss of topsoil) is followed by Mitigation Measures that specify Best Management Practices and cross references measures in the Hydrology and Water Quality Section 4.5. There is no cross reference to Element 12 of the ARP04 (Standards for Revegetation of Reclaimed Areas) on Page 3-60, which should be one of the most important means of controlling erosion and loss of topsoil, particularly the topsoil that is destined to be removed from South Hill and stockpiled in the Northwest Quadrant.

Thank you for responding to our comments.

Sincerely,

Roger Roberts
President
Comment Letter 27: Marin Conservation League

27-1 This comment is preamble and does not require separate response.

27-2 Please see the response to comment 26-2

27-3 Please see the response to comments 21-3 and 26-3

27-4 This comment asserts that the finding of a less than significant cumulative impact relative to Impact C4.2-8 is in contradiction to the finding of a significant and unavoidable impact relative to R.4.2-1. For the purposes of assessing ARP impacts (R4.2-1), the emissions associated with phases 1-3, and that portion of Phase 4 that would occur prior to cessation of mining, are “new” because they are occurring at the same time as mining operations. Per BAAQMD guidelines, this results in both a project-specific and cumulative impact. From the perspective of the AQP, and also from the perspective of the two projects combined, the AQP, as mitigated in P4.2-6, results in no increase in emissions above baseline. Therefore future emissions under the AQP cannot contribute to a cumulative impact (even though past operations, i.e., the baseline, does set the stage for our conclusion of significance in R4.2-1).

27-5 The approach to the analysis of health risks associated with exposure to emissions of crystalline silica is further described in response to Comment 30-13, below. As stated in that response, the significance conclusion of Impact C4.2-10 is not changed. See also Master Response 5, Health Risk Assessment, in Section 7.2.

27-6 Impacts associated with backfilling the Main Quarry Bowl are discussed in the analysis and comparison of alternatives to the ARP in Chapter 6 (see Section 6.2 Analysis of Alternatives to the Amended Reclamation Plan). Additional information on the disposition of the Main Quarry Bowl is included in Master Response 7 in Section 7.2 of this document.

27-7 Please see the response to comment 26-4.

27-8 Please see the response to comment 26-5.

27-9 When the County receives an application for a development permit, it would initiate the normal procedure for determining the appropriate level of environmental review, per the CEQA Guidelines and the County’s own environmental review guidelines. This process would also determine whether discretionary approvals would be required and whether public participation would be required as part of the decision-making process.

27-10 The correct reference is to Mitigation Measure R4.3-5a. The text of the EIR is revised as follows:

   Mitigation Measure C4.3-18a: See Mitigation Measure C4.3-5a R4.3-5a.
27-11 The reference to the Community Development Agency in Mitigation Measure C4.3-18b is in error, and should be to the Department of Public Works. The text of this mitigation measure is corrected; see Section 4.3, Biological Resources, page 4.3-58.

27-12 The text of Mitigation Measure R4.4-2a is revised as follows:

**Mitigation Measure R4.4-2a:** The applicant has prepared a Stormwater Management Plan and Stormwater Pollution Prevention Plan that specifies best management practices for reducing erosion and sedimentation. The applicant has also prepared Standards for Stormwater and Erosion Control of Reclaimed Areas and Standards for Revegetation of Reclaimed Areas, both of which will apply to reclamation activities (see Chapter 3, Project Description).
April 14, 2008

Tim Haddad  
Environmental Coordinator  
Marin County Community Development Agency  
3501 Civic Center Drive, Room 308  
San Rafael, CA 94903-4157

Re: San Rafael Rock Quarry

Dear Mr. Haddad,

It has come to my attention that the Marin County Board of Supervisors will be conducting a public hearing to review comments regarding the County’s draft EIR relating to the San Rafael Rock Quarry (SRRQ).

I am the attorney for 8 reclamation districts located in the Sacramento-San Joaquin Delta. The levee system maintained by each of these Reclamation Districts protects homes, businesses, human life and the future economic stability in these communities. The Delta levees also protect the states water conveyance system that is vital to the state and global economy.

SRRQ is a unique resource that provides rock materials to carry out preventative and emergency maintenance on the various District’s levee systems. Not only does the SRRQ provide the primary source of materials needed, it is also the only source of marine-based activities and the only quarry in Northern California with direct loading access to barges. Marine based equipment is often the only way to access levee repair sites.

The Reclamation Districts, the home and business owners, and members of the surrounding communities are dependent on the use of rock bank protection and the loss of the SRRQ will make it extremely difficult to maintain the delta levee system in an efficient and cost effective manner.

In conclusion I would like to convey the importance of keeping SRRQ an active mining operation. Prohibiting SRRQ from conducting business would detrimentally affect millions of people, including those who are in opposition of keeping SRRQ an active business.
A hard copy of this letter will follow.

Sincerely,

[Signature]

John W. Stovall

cc: San Rafael Rock Quarry
Trustees of Reclamation Districts 773, 799, 1608, 1614, 2064, 2115, 2126,
A. Richard Aschieris
Comment Letter 28: John W. Stovall, Neumiller & Beardslee

28-1 This comment does not address the environmental impact analysis, but rather the merits of the project. Please refer to Master Response 12 in Section 7.2 of this document.
March 17, 2008

Tim Haddad
Marin Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, CA 94903

Dear Mr. Haddad:

Re: Comments by toxicologist retained by Pt. San Pedro Road Coalition concerning DEIR on SRRQ Amended Quarrying Permit

The Pt. San Pedro Road Coalition submits the attached letter dated March 3, 2008 from Dr. Paul Damian, a toxicologist with expertise in the field air quality. Also attached is a copy of Dr. Damian’s CV.

Thank you for your consideration of these comments.

Sincerely,

Bonnie Marmor
Co-President
March 3, 2008

Dr. Denise Lucy and Ms. Bonnie Marmor  
Co-Presidents  
Point San Pedro Road Coalition  
732 Point San Pedro Road  
San Rafael, California 94901

Subject: Questions and Comments Regarding the Draft EIR for the San Rafael Rock Quarry  
Amended Reclamation Plan and Amended Surface Mining and Quarrying Permit

Dear Dr. Lucy and Ms. Marmor:

I have reviewed the air quality and health risk sections of the subject report and errata sheet dated February 27, 2008. Here are my comments and questions about the draft EIR:

1. The draft EIR for the San Rafael Rock Quarry Amended Reclamation Plan and Amended Surface Mining and Quarrying Permit (EIR) does not provide any of the modeled air concentrations of contaminants, including crystalline silica or the AERMOD and HARP model output. The report should provide the complete output from both the AERMOD air dispersion modeling and the HARP risk modeling (including the modeled air concentrations) so that reviewers can determine exactly how the modeling was done and what assumptions were used. The added material should include both input and output files so that parameters used in the AERMOD and HARP modeling can be independently verified. The current level of documentation of the AERMOD and HARP modeling as provided in Appendix D focuses exclusively on emission estimates rather than providing any air concentration (short-term 1-hour-averages and long-term annual average concentration) or risk results (i.e., Hazard Quotients and cancer risk estimates for all modeled contaminants). It is completely inadequate to allow for an independent review of the modeling that was done.

2. What toxicity criteria values were used to calculate the Hazard Index values for crystalline silica (as shown in Table 4.2-17) and cancer risk for diesel particulate? All toxicity criteria used to do the HARP risk modeling should be listed clearly in the report.

3. The draft EIR does not provide the short-term (1-hour-average) modeled concentrations of crystalline silica at sensitive receptors (schools, hospitals/clinics, parks, day care centers) located close to the SRRQ. Please provide these values.

4. The section discussing crystalline silica on page 4.2-17 implies that the carcinogenicity of crystalline silica is indeterminate or subject to debate at this time when in fact the leading international agency responsible for classifying the carcinogenicity of compounds (the International Agency for Research on Cancer [IARC]) has concluded the following with respect to crystalline silica:
Dr. Lucy and Ms. Marmor  
March 3, 2008  
Page 2

There is *sufficient evidence* in humans for the carcinogenicity of inhaled crystalline silica in the form of quartz or cristobalite from occupational sources.

There is *sufficient evidence* in experimental animals for the carcinogenicity of quartz and cristobalite.

This information from IARC should be presented in the crystalline silica section on page 4.2-17 to make clear the fact that the carcinogenicity of crystalline silica is not equivocal. Note that the crystalline silica found at the San Rafael Rock Quarry and in accumulated dust around the neighborhood is virtually entirely of the quartz form.

5. The discussion of crystalline silica in Appendix D, Attachment B notes that the California Office of Environmental Health Hazard Assessment has developed a Chronic Reference Exposure Level (REL) for crystalline silica. However, the value of this REL is not stated here or apparently anywhere else in the report. The REL for crystalline silica of 3 μg/m³ should be stated in this discussion.

6. Table 4.2-15 shows an acute Hazard Index of 1.0 for recreational use, the maximum acceptable Hazard Index before adverse effects would be expected. In other words there is very little margin of safety when the Hazard Index is at 1.0. Given the high level of the acute Hazard Index the report should show what chemicals are the primary contributors to the acute Hazard Index. Also, what are the acute Hazard Index values at nearby sensitive receptors with residential uses? These values should be shown in the report.

Please let me know if you have any questions about my comments.

Sincerely,

Paul Damian
PhD, MPH, DABT  
National Practice Leader  
Risk Assessment and Toxicology  
Board Certified Toxicologist  
SCS ENGINEERS  
916-361-1297  

Attachment  

cc. Mr. William Hosken (via email)  
Mr. David Crutcher (via email)
PAUL DAMIAN, Ph.D., MPH, DABT
National Practice Leader
Risk Assessment and Toxicology
Board Certified Toxicologist

Education
Ph.D., Toxicology and Pharmacology, University of California, Davis, 1995
MPH (Master of Public Health), Environmental Health, University of Michigan, Ann Arbor, 1984
BS, Natural Resources, University of Michigan, Ann Arbor, 1981

Certifications
Diplomate, American Board of Toxicology (DABT), 1997 (Recertified 2003-2007; 2008-2012)

Affiliations
Society of Toxicology (Full Member)
American College of Toxicology (Full Member)
Society for Risk Analysis (Full Member)
International Society of Regulatory Toxicology and Pharmacology
Roundtable of Toxicology Consultants
American Bar Association (Associate Member)
Earthquake Engineering Research Institute: Earthquake, Energy and Resources Section
Trial and Insurance Practice Section

Summary of Professional Experience
Dr. Damian is a Board Certified Toxicologist with over 20 years of experience assessing the human health and ecological risks associated with chemicals in the environment and workplace, and with chemical and drug products. He is the National Practice Leader for Risk Assessment and Toxicology Services at SCS Engineers (SCS), a nationwide environmental consulting company.

Dr. Damian's project experience has included directing, preparing and reviewing risk assessments and risk assessment workplans for school sites, chemical waste sites, industrial facilities, military bases, mine and smelter sites, radiological sites, landfills, and brownfields. His experience also includes vapor intrusion risk assessments, indoor air sampling, emergency response (hazardous material spills) risk assessments, Proposition 65 compliance risk assessments, and chemical and drug product safety assessment, preparation of integrated toxicology summaries for Investigational New Drug (IND) applications, food safety (GRAS) expert panels, contaminated building risk assessments, and expert witness testimony. Dr. Damian brings advanced risk assessment expertise to our clients, including Monte Carlo (probabilistic) risk assessment and pharmacokinetic/toxicokinetic modeling. Dr. Damian has been trained at Argonne National Laboratory in the use of RESSAD, the leading computer model for assessing risks associated with radionuclide contaminated sites.

Examples of Dr. Damian's specific project experience include:

- Prepared a groundwater vapor intrusion risk assessment for a UST site owned by a national manufacturer of laundry. The risk assessment resulted in closure of the site within 3 months.
- Prepared a baseline health risk assessment for Long Beach Memorial Medical Center. The risk assessment included evaluation of the vapor intrusion exposure pathway and development of soil gas cleanup levels.
- Wrote a soil gas sampling workplan to support evaluation of vapor intrusion risks at Long Beach Memorial Medical Center.
- Prepared a vapor intrusion risk assessment and developed soil gas cleanup levels for a dance studio.
- Evaluated vapor intrusion risks at the Martin Brass Foundry Site in Turlock, California. The risk assessment was reviewed and approved by the California Office of Environmental Health Hazard Assessment and the Los Angeles County Fire Department.
- Prepared a vapor intrusion risk assessment for an automobile repair shop in Pt. Reyes Station, California. The risk assessment was reviewed and approved by the San Francisco Bay Region California Regional Water Quality Control Board.
- Assisted in the design of an indoor air sampling plan and prepared an indoor air risk assessment for an apartment complex to evaluate potential risks to building occupants from vapor intrusion.
- Prepared a vapor intrusion risk assessment for a large residential development consisting of lots and an underground parking garage. The risk assessment was reviewed and approved by the California Office of Environmental Health Hazard Assessment and the Los Angeles County Fire Department.
- Assisted in the design of an indoor air sampling program for a school in the Los Angeles Unified School District.
- Prepared an opinion letter regarding the likelihood of vapor intrusion risks for a gasoline-contaminated brownfield site scheduled for residential redevelopment.
- Prepared an affidavit and opinion letter regarding the likelihood that a nail salon was adversely affecting the health of other building tenants based on indoor air sampling results and a ventilation survey. The case resolved in our client's favor. Our client was the plaintiff in the case.
PAUL DAMIAN, PhD, MPH, DABT (continued)

School Site Air Toxics Risk Assessments

Dr. Damian is the Contract Manager and Project Manager for a current contract with a major California school district to Review Health Risk Assessments at New School Sites. This work has involved providing comprehensive reviews of all aspects of air toxics risk assessments prepared by other consultants for new school sites, including: identification of emission sources, characterization of emission rates, air dispersion modeling, exposure assessment, toxicity assessments and risk characterization. Dr. Damian was also involved in, and supervised, completion of the following related tasks for the school district:

- assisted in preparing a new air toxics risk assessment protocol document
- assisted in preparing an outline for a revised air toxics risk assessment report template
- conducted or reviewed odor analyses for prospective school sites
- conducted or reviewed emergency response modeling for prospective school sites using RMP*Comp or AROHA emergency response modeling software.
- reviewed the school district’s air toxics emission rate calculation template to identify possible errors.

Hazardous/Municipal/Hotel/Hospital Waste Incinerator Risk Assessments

- Assisted in the evaluation of the potential health risks associated with toxic emissions from a proposed 300-ton/day waste-to-energy incineration facility to be located in Stanislaus County. Toxic contaminants evaluated in this assessment included heavy metals, PCBs, PAHs, polychlorinated dibenzo-p-dioxins, dibenzofurans. All potentially significant exposure pathways were evaluated, including inhalation, drinking water, fish consumption, inadvertent ingestion of soil, dermal contact with soil, and consumption of contaminated food (produce, dairy products and meat). The assessment included quantitative estimation of cancer and noncancer risks to impacted receptor populations, including sensitive receptor populations located at schools and hospitals. The risk assessment was reviewed and approved by both the California Air Resources Board and the California Department of Health Services.

- Assisted in the preparation of a multi-pathway health risk assessment for the Milliken waste-to-energy facility, a 1,000-ton/day solid waste combustion facility proposed for construction in San Bernardino County, California. The assessment included estimation of human contaminants exposures and risks for the following exposure pathways: inhalation, dermal contact with soil, drinking water, fish consumption, soil ingestion, and maternal milk consumption.

- Assisted in the evaluation of health impacts associated with air emissions from a hotel incinerator. Population exposures to metal and organic contaminants were estimated for the following exposure pathways: inhalation, dermal contact with soil, inadvertent soil ingestion.

Litigation Support

- Prepared an expert witness report and provided expert witness support regarding the potential health effects of arsenic in groundwater. The case resolved in our client’s favor. Our client was the defendant in the case.

- Prepared an expert witness report regarding the health risks associated with a commercially available lawn care product. The case resolved in our client’s favor. Our client was the defendant in the case.

- Presented expert witness testimony for the California Energy Commission with regard to the potential public health impacts associated with catastrophic release of ammonia in the event of an accidental ammonia tank spill or rupture (deposition and testimony at administrative trial). The case resolved in our client’s favor. Our client was the plaintiff in the case.

- Presented expert witness testimony with regard to the potential public health impacts associated with the potential diversion of water from the Sacramento Delta upstream into the Cananea Reservoir by the East Bay Municipal Utility District. Testimony addressed the likely contamination of Cananea reservoir fish with contaminants from lower quality Delta water and resulting human exposure through fish consumption (deposition and testimony at administrative trial). The case resolved in our client’s favor. Our client was the defendant in the case.

- Presented expert witness testimony regarding the health risks associated with possible toxic contamination of a herd of beef cattle by contaminated land near an aerospace manufacturing facility (deposition and testimony at trial). The case resolved to a partial settlement for our client. Our client was the defendant in the case.

- Prepared an affidavit and opinion letter regarding the likelihood that a nail salon was adversely affecting the health of other building tenants based on indoor air sampling results and a ventilation survey. The case resolved in our client’s favor. Our client was the plaintiff in the case.

Hazardous Waste Site Risk Assessments and Risk Assessment Workplans

- Wrote a health and ecological risk assessment workplan for a 1,000-acre brownfield site in southern California. The workplan was approved by the California Department of Toxic Substances Control (DTSC).
PAUL DAMIAN, PhD, MPH, DABT (continued)

- Prepared a health risk assessment workplan for a landfill site in Arizona. The workplan was reviewed and approved by the Arizona Department of Environmental Quality.

Monte Carlo (Probabilistic) Risk Assessments

- Currently reviewing a large mine/mill tailings site Monte Carlo (probabilistic) risk assessment for the Arizona Department of Environmental Quality (ADEQ). The work involves providing review comments on risk assessment documents provided by the mine owner and its consultants conducting meetings and site visits as needed to negotiate completion of the risk assessment on behalf of the ADI/Q.
- Prepared a Monte Carlo (probabilistic) risk assessment for a chemical widely used in the semiconductor industry. The assessment resulted in an estimated savings of $15 million in retuning costs for a major semiconductor manufacturer.
- Prepared a health risk assessment for a former scrap metal recycling site in Tempe, Arizona consistent with ADEQ risk assessment guidelines. The assessment included both deterministic and probabilistic (Monte Carlo) assessment of health risks associated with residual arsenic, lead, and PCBs in soil. The Monte Carlo assessment resulted in an estimated savings of about $1.5 million in cleanup costs for the client.
- Prepared a health risk assessment for a former scrap metal recycling site in Tempe, Arizona consistent with ADEQ risk assessment guidelines. The assessment included both deterministic and probabilistic (Monte Carlo) assessment of health risks associated with residual arsenic, lead, and PCBs in soil. The Monte Carlo assessment resulted in an estimated savings of about $1.5 million in cleanup costs for the client.

Ecological Risk Assessments

- Prepared baseline ecological risk assessments for a landfill site in southern California. The assessment workplan and baseline were submitted to the California Department of Toxic Substances Control (DTSC).
- Prepared several baseline ecological risk assessment studies for a former rocket manufacturing site in southern California.
- Prepared an ecological endangerment assessment for two mines sites in Utah National Forest, Utah County, Utah (Dutchman Flats and Pacliff Mine).
- Developed cleanup levels to evaluate radiation risk to ecological receptors at a uranium mine in Stansbury County, Utah.

Product/Drug Safety Risk Assessments

- Prepared a product safety health risk assessment for a nitrate-derived national lawn care product. The assessment included management of a contract toxicology laboratory, geochemical characterization of the chemical forms of nitrate-derived lead and arsenic, and in vitro bioavailability studies of lead and arsenic. The risk assessment was reviewed and
PAUL DAMIAN, PhD, MPH, DABT (continued)

approved by the Arizona Department of Health Services and the Arizona Department of Environmental Quality.

- Served as the toxicology expert on a Generally Recognized as Safe (GRAS) Expert Panel for the self-affirmation of a nutritional supplement.
- Prepared an integrated toxicology summary for a new drug product as part of an Investigational New Drug (IND) application to the Food and Drug Administration (FDA).

Emergency Response Risk Assessments
- Evaluated the potential health impacts associated with catastrophic release of propane from a propane tank rupture. The evaluation included modeling the air dispersion of the released propane.
- Prepared a health risk assessment of a spill of solvent waste containing primarily trichloroethylene.
- Evaluated public and worker health impacts associated with production and testing of a newly designed rocket motor for the Space Shuttle. The evaluation included the assessment of impacts related to hazardous material spills, rocket motor explosions and fires, and inhalation exposure to rocket exhaust during testing. A detailed discussion of general worker health and safety practices and control technologies associated with rocket motor production was also prepared as part of the evaluation.
- Prepared a screening-level analysis of the projected maximum health impacts associated with inhalation exposure to plutonium-239 (Pu-239) released during truck transport of low-level transuranic radiologic waste. Plutonium present in a hypothetical waste payload was assumed to be released via a fire resulting from a truck accident. Maximum downwind air concentrations of the released plutonium were modeled using the EPA and California Air Resources Board-approved air dispersion models PIPNU and PIPUM. The dispersion modeling approach used included consideration of the effect of combustion gas production on the plutonium release rate. Lifetime cancer risk and the potential for noncancer-related acute toxic effects were determined based on inhalation exposure. Inhalation exposure included contributions from direct inhalation of ambient air and inhalation of resuspended particulates.

Radioactive Risk Assessments
- Prepared a radiological hazard assessment for a former uranium mine in Stanislaus County, California. The assessment evaluated the immediate health hazards associated with gamma radiation, radon exposure, consumption of radionuclide-contaminated drinking water and soil, and potential contamination of beef cattle with radionuclides. The project involved the use of RESRAD and direct measurement of gamma emissions, radon concentrations in ambient air, and airborne particulate concentrations of radionuclides to assess radiation dosages for recreational users of the site. Also developed human health and ecological screening benchmarks for acceptable levels of radionuclides in soils, surface water and sediments.
- Prepared a screening-level analysis of the projected maximum health impacts associated with inhalation exposure to plutonium-239 (Pu-239) released during truck transport of low-level transuranic radiologic waste. Plutonium present in a hypothetical waste payload was assumed to be released via a fire resulting from a truck accident. Maximum downwind air concentrations of the released plutonium were modeled using the EPA and California Air Resources Board-approved air dispersion models PIPNU and PIPUM. The dispersion modeling approach used included consideration of the effect of combustion gas production on the plutonium release rate. Lifetime cancer risk and the potential for noncancer-related acute toxic effects were determined based on inhalation exposure. Inhalation exposure included contributions from direct inhalation of ambient air and inhalation of resuspended particulates.
- Prepared a health risk assessment for a mine/monitor site Monte-Carlo (probabilistic) risk assessment for the Arizona Department of Environmental Quality (ADEQ). The work involves providing review comments on risk assessment documents provided by the mine owner and its consultants conducting meetings and site visits as needed to complete risk assessment. The ADEQ.
- Prepared a radiological hazard assessment for a former uranium mine in Stanislaus County, California. The assessment evaluated the immediate health hazards associated with gamma radiation, radon exposure, consumption of radionuclide-contaminated drinking water and soil, and potential contamination of beef cattle with radionuclides. The project involved the use of RESRAD and direct measurement of gamma emissions, radon concentrations in ambient air, and airborne particulate concentrations of radionuclides to assess radiation dosages for recreational users of the site. Also developed human health and ecological screening benchmarks for acceptable levels of radionuclides in soils, surface water and sediments.
- Prepared a health risk assessment for a former mine facility site near Morenci, Arizona, consistent with Arizona DHR risk assessment guidelines. The assessment evaluated health risks associated with residual soil levels of arsenic. The following exposure pathways were evaluated: soil ingestion, inhalation of soil particulates, and dermal contact with soil. The assessment concluded that health risks to a hypothetical residential population would be negligible.
- Prepared a health risk assessment for a former mine tailings disposal site near Clifton, Arizona, consistent with Arizona DHR risk assessment guidelines. The assessment evaluated health risks associated with residual soil levels of arsenic and copper following site remediation. The following exposure pathways were evaluated: soil ingestion, inhalation of soil particulates, and dermal contact with soil. The assessment concluded that health risks to a hypothetical residential, occupational, and student population receptors would be negligible.
PAUL DAMIAN, PhD, MPH, DABT (continued)

- Prepared a human health and ecological endangerment assessment for two mine sites in Uinta National Forest, Utah County, Utah (Duchesne Plate and Pacific Mine). The endangerment assessment included evaluating human health and ecological risks and developing arsenic and lead cleanup levels to protect a hypothetical recreational user of the site.

Proposition 65 Risk Assessments

- Prepared a health risk assessment of a fertilizer product to support compliance with California's Proposition 65. The assessment was prepared consistent with the requirements of Proposition 65, and included evaluation of exposure occurring through incidental soil ingestion, inhalation of airborne particulates, dermal contact and consumption of homegrown garden produce.

- Evaluated the health risks associated with potential human exposure to DDT in soil as part of a real estate site audit. Total daily exposure to low levels of DDT in soil was estimated for the following pathways: inhalation, inadvertent soil ingestion, and dermal contact with soil. The risk assessment was conducted according to California Proposition 65 risk assessment guidelines to determine whether the site was in compliance with the Proposition 65 "no significant risk" level for DDT.

Miscellaneous

- Project manager for a Removal Action Work Plan (RAW) and Site Remediation Completion Report (SRCR) for a 100-acre explosives site in northern California. The California DTSC approved the RAW and SRCR, and the site was certified closed.

- Provided third-party critical review of a comprehensive hazardous waste disposal facility risk assessment for the County of Santa Barbara.

- Evaluated the potential health risks to workers for a building contaminated with lead.

- Prepared a literature review on the toxicity of lead and arsenic to horses.

Other Appointments

4/98-6/03 Editorial Board, TOMES (Toxicology, Occupational Medicine, and Environmental Series) Information System, Micromedex, Inc., Englewood, CO.

Teaching Experience

Developed and taught the following graduate-level course as Adjunct Assistant Professor in the Dept. of Pharmaceutical Sciences, School of Pharmacy, University of Colorado Health Sciences Center:

TXCL 7655 Toxicokinetics and Pharmacokinetics (2 quarter hours).

This course provides an up-to-date and comprehensive treatment of the field of pharmacokinetics and toxicokinetics. Emphasis in the course is placed on developing the practical problem-solving skills.
Comment Letter 29

SCS ENGINEERS

PAUL DAMIAN, PhD, MPH, DABT (continued)


Publications


Comment Letter 29

SCS ENGINEERS

PAUL DAMIAN, PhD, MPH, DABT (continued)


Comment Letter 29: Point San Pedro Road Coalition  
(Letter of March 17, 2008)

29-1 This comment is preamble, and does not require a response.

29-2 Input and output files, including all assumptions, factors, and model run parameters, were provided to Dr. Damian subsequent to receipt of this letter. This background information is considered highly technical and is also voluminous, and so is not suitable for inclusion in the Draft EIR. The information is available upon request to the Community Development Agency.

29-3 Please see the response to comment 30-8.

29-4 Please see the response to comment 30-7.

29-5 Please see the response to comment 30-13.

29-6 Please see the response to comment 30-8.

29-7 Please see the response to comment 30-15.

29-8 This comment contains Dr. Damian’s curriculum vitae.
April 14, 2008

Tim Haddad, Environmental Planning Coordinator
3501 Civic Center Drive, Room 308
San Rafael, CA 94903

Dear Mr. Haddad:

Attached are four documents regarding the Draft Environmental Impact Report (DEIR) on the San Rafael Rock Quarry (SRRQ) Amended Reclamation Plan (ARP) and Amended Surface Mining and Quarrying Permit (AQP). These attachments document a surprising number of errors and omissions in the DEIR, many of which are quite significant in nature.

The first attachment (labeled Attachment 1A and 1B) contain two letters from Dr. Paul Damian, National Practice Leader for Risk Assessment and Toxicology and a Board Certified Toxicologist with SCS Engineers. Dr. Damian was engaged by the Coalition to conduct a study of the airborne health risks created by the SRRQ operations. His report is quite revealing and must be taken seriously in the EIR process.

The second attachment (Attachment 2) contains our comments on the DEIR. The third attachment (Attachment 3) is our October 13, 2007 letter submitted during the DEIR scoping period. Many of the issues raised therein were not addressed in the DEIR. The final EIR should address all the issues raised in our scoping letter, some of which are not restated in our attached response to the DEIR.

There is no dispute that the SRRQ is fundamentally incompatible with the residential community that has been allowed to grow up surrounding it. All continued operations of the SRRQ must include stringent oversight and penalties for violations.

The health risks associated with its current and planned operations are unacceptable. If the Quarry is to continue to operate for any length of time, it must be held to the highest state-of-the-art environmental standards consistent with this residential setting. Neither the AQP nor any of the alternatives in the DEIR meet that criterion. What constitutes “best available technology” is an engineering concept that should have been included in the DEIR. Yet there is no engineering analysis of the operation of the SRRQ or their proposed AQP, such as enclosure of C-silica-producing operations or a review of best-practices currently in use in the industry.

The proposed ARP is simply untenable and essentially so characterized in the DEIR. Further options must be explored. Restoration of the marshes should be commenced immediately and
any Reclamation Plan should include a beneficial end use.

At the March 25, 2008 hearing, the SRRQ stated their intent to submit a modified plan that would change the proposed AQP and ARP from simultaneous operations and reclamation to a staggered plan. Submission of a modified plan would significantly alter the basis of the DEIR. In accordance with CEQA regulations, the County would be required to recirculate a revised draft EIR analyzing the modified plan and allow for a full public comment period. We believe that the revisions needed in the DEIR, even without this proposed modification by the SRRQ, are so substantial as to compel a re-issuance of the DEIR with full public review and hearings.

Sincerely,

Denise M. Lucy
Co-President

Bonnie Marmor
Co-President

Attachments
April 10, 2008
File No. 01207223.90

Dr. Denise Lucy and Ms. Bonnie Marmor
Co-Presidents
Point San Pedro Road Coalition
732 Point San Pedro Road
San Rafael, California 94901

Subject: SCS Engineer’s Review Comments Regarding the Draft Environmental Impact Report (DEIR) for the San Rafael Rock Quarry Amended Reclamation Plan and Amended Surface Mining and Quarrying Permit, with Emphasis on Health Risk Estimation, Air Dispersion Modeling and Emission Rate Estimation.

Dear Dr. Lucy and Ms. Marmor:

SCS Engineers (SCS) has completed its review of the DEIR for the San Rafael Rock Quarry (SRRQ) Amended Reclamation Plan (ARP) and Amended Surface Mining and Quarrying Permit (ASMQP). This review focused on those aspects of the DEIR most fundamental to the accurate estimation of health risks associated with crystalline silica (C-silica) and diesel particulate matter (DPM). C-silica and DPM are the most important health risk issues related to the current and proposed operations of the SRRQ as discussed in our previous letter dated January 14, 2008. Note that for completeness, this letter includes comments we made earlier in a letter dated March 3, 2008. The March 3 letter did not address the air dispersion modeling or the emission rate aspects of the DEIR, the focus of this letter, as complete information regarding those aspects of the DEIR were not available to us at that time. The current review focuses on factors most important to the estimation of C-silica and DPM health risks.

GENERAL COMMENTS

1. The DEIR, as issued, does not provide any of the modeled air concentrations of contaminants, including concentrations of C-silica or DPM, the contaminants of greatest health concern. Nor is the AERMOD and HARP model output included. The report should provide the complete output from both the AERMOD air dispersion modeling and the HARP risk modeling (including the modeled air concentrations) so that reviewers can determine exactly how the modeling was done and what assumptions were used. The added material should include both input and output files so that parameters used in the AERMOD and HARP modeling can be independently verified. The current level of documentation of the AERMOD and HARP modeling as provided in Appendix D focuses exclusively on emission estimates rather than providing any air concentration (both short-term averages and long-term annual-average concentration) or risk results (i.e. Hazard Quotients and cancer risk estimates for all modeled contaminants). It is completely inadequate to allow for an independent review of the modeling that was done. Granted this documentation is extensive. Nonetheless, it would be expected for any regulatory review of an air toxics emission source and can be provided in a CD or online format to save paper and facilitate distribution. However, at a minimum, a table showing the modeled concentrations of C-silica and DPM (both short-term

Attachment 1A
and annual-average) at local sensitive receptors (i.e. schools, hospitals/clinics, retirement homes, parks) should be provided in the DEIR proper to allow ready access of this fundamental information regarding contaminant exposure to the community being exposed.

2. The discussion of C-silica in Appendix D, Attachment B of the DEIR, notes that the California Office of Environmental Health Hazard Assessment (OEHHHA) has developed a Chronic Reference Exposure Level (REL) for C-silica. However, the value of this REL is not stated here or anywhere else in the report. C-silica and DPM are the two most important health issues associated with SRRQ operations. The toxicity criteria used to calculate health risks for these two contaminants at least, should be shown clearly in the DEIR, as they are critical benchmarks for calculating health risks associated with these contaminants. Specifically, the inhalation cancer potency factor for the carcinogen DPM (1.1. [mg/kg*day]) and the Chronic RELs for C-silica (3 μg/m³) and DPM (5 μg/m³) should be shown.

3. Undoubtedly there is a pronounced seasonality to the dust (and C-silica) emissions impacts from the SRRQ on the neighborhood, with the severest impacts occurring during the dry summer months. Using an annual-average emission rate does not take into account the much higher exposures to C-silica occurring the summer months. Granted, it would be difficult to take into account this seasonal effect on dust emissions short of actual air sampling, however, it should be noted that use of the annual-average emission rate will likely result in a significant underestimation of dust and C-silica exposure occurring during the dry summer months.

4. The DEIR does not discuss or consider the results of the ambient air testing conducted by Onsite Environmental Laboratories, Inc. In 2001, this laboratory collected air samples at three sampling stations located downwind of the SRRQ, and one station located upwind of the SRRQ. Their report, published March 15, 2001, showed that total suspended particulate (TSP) concentrations ranged up to 450 μg/m³ at downwind sampling standards following a quarry blast, and exceeded the TSP standard of 150 μg/m³ for the remainder of the week following the blast (see Attachment A in this letter). The same report documents numerous excursions of the TSP standard at the three downwind sampling locations over the 30-day sampling period. Given that the quarry mines greywacke sandstone, which contains at least 50% quartz, based on actual measurements of the quarry rock, it is reasonable to expect a high percentage of this TSP released during blasts to consist of the quartz form of C-silica.

5. Under the California Environmental Quality Act (CEQA), new projects are required to consider the cumulative impacts of a project on the community, as per Section 15355 of the CEQA Guidelines:

"Cumulative impacts" refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

a) The individual effects may be changes resulting from a single project or a number of separate projects.

b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.
Based on the requirements of the CEQA, it is therefore appropriate that the DEIR takes into the
count the cumulative impacts (health risks) of the previous project (the quarry operations
before the current proposal) as part of the evaluation of future impacts of the new project (the
proposed quarry operations).

In addition, it is a fact that individuals who have lived in the neighborhood have already experienced
increased health risks (including cancer risk) associated with historical quarry emissions during their
residence. So it would be inaccurate in the risk assessment to exclude these risks going forward as if
they did not occur.

Finally, the Precautionary Principle points out that in the face of uncertainty, estimation of health
risks should err on the conservative side. Inclusion of risks experienced by the local population due to
historical exposure to this same quarry as well as additional risks going forward is consistent with the
Precautionary Principle.

6. For clarification, it should be noted that the wind blows predominantly from the south and southwest
to the north (i.e. from the SRRQ to the direction of the community). This is clearly shown by the
wind rose data included in the DEIR AERMOD modeling files and included in this letter as
Attachment B. Note that this wind rose data was obtained from the two meteorological stations
closest to the SRRQ.

7. The section discussing C-silica on page 4.2-17 implies that the carcinogenicity of C-silica is
indeterminate or subject to debate at this time when in fact the leading international agency
responsible for classifying the carcinogenicity of compounds (the International Agency for Research
on Cancer [IARC]) has concluded the following with respect to C-silica:

There is sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica in
the form of quartz or cristobalite from occupational sources.

There is sufficient evidence in experimental animals for the carcinogenicity of quartz and
cristobalite.

This information from IARC should be presented in the C-silica section on page 4.2-17 to make clear
the fact that the carcinogenicity of C-silica is not equivocal. Note that the C-silica found at the SRRQ
and in accumulated dust around the neighborhood is virtually entirely of the quartz form.

8. Note also that although IARC refers to occupational exposure to C-silica, it is probable that the levels
of C-silica to which the community is being exposed are, at least during certain times, very similar to
or even exceeding typical occupational exposure levels. In fact, a review of the HARP modeling files
show that the modeled air concentrations (including the 30-day average concentration calculated
using the standard conversion factor) greatly exceeds the American Conference of Governmental
Industrial Hygienists (ACGIH) time-weighted average threshold limit value (TWA-TLV) for C-silica
of 25 µg/m³. For example, the maximum modeled 30-day average concentration (which could be
interpreted as a chronic exposure) of C-silica is 196 µg/m³. This value greatly exceeds both the
occupational exposure limit of 25 µg/m³ and the Chronic REL for C-silica of 3 µg/m³. Modeled
short-term concentrations are much higher. For example, the modeled maximum 7-hour
average concentration is 521 µg/m³ and the maximum 1-hour average concentration,
representing an acute exposure, is 652 µg/m³. Table 1 and Figure 1 in Attachment C of this letter compare DEIR-modeled C-silica concentrations at several representative sensitive receptors (including schools and a local resident) to the C-silica REL and C-silica occupational exposure limit established by the ACGIH. The DEIR modeling results shown in Table 1 and Figure 1 show that the community is in fact being exposed to very high levels of C-silica that greatly exceed even occupational exposure limits for periods of at least 30 consecutive days. Figure 2 in Attachment C shows the DEIR-modeled concentrations of DPM and compares them to the Chronic REL for DPM. Figure 2 shows that, according to the DEIR air modeling, the community is being exposed to DPM concentrations of up to 6-times the REL for at least short periods of time and almost twice the DPM REL for at least 30 consecutive days.

9. Table 4.2-15 shows an acute Hazard Index of 1.0 for recreational use, the maximum acceptable Hazard Index before adverse effects would be expected. In other words, there is very little margin of safety when the Hazard Index is at 1.0. Given the high level of the acute Hazard Index the report should show what chemicals are the primary contributors to the acute Hazard Index. Also, what are the acute Hazard Index values at nearby sensitive receptors? These values should be shown in the report.

10. There appears to be some confusion regarding the difference, with respect to health risks, between C-silica and amorphous (non-crystalline) silica. Most of the severest health risk concerns, including carcinogenicity, silicosis, and various inflammatory lung disorders, are associated with C-silica exposure, NOT amorphous silica. The form of silica in soil is predominantly of the amorphous form, although virtually all soil contains at least some traces of C-silica. The silica form released from rock and mineral quarrying, on the one hand, typically contains a much higher concentration of C-silica because the rocks and minerals mined typically contain a high percentage of C-silica in the form of quartz. For example, rock from the SRRQ has been shown to contain about 50% quartz silica.

The key physical difference between amorphous silica and C-silica is that amorphous silica does not have the characteristic sharp edges that C-silica has. These sharp edges of C-silica are assumed to be responsible for the increased deposition and retention of C-silica in the lung relative to amorphous silica, and for the greater severity of lung damage characteristic of C-silica. The sharp edges of C-silica from freshly fractured rock are also known to be highly chemically reactive (Clouter et al., 2001), making C-silica much more toxic to lung cells. C-silica and not amorphous silica is therefore the primary focus of the health risk assessment in the DEIR, as is appropriate. The unusually high percentage of quartz C-silica in dust samples collected from throughout the community (25%) correlates with the high percentage of quartz C-silica in the greywacke sandstone mined at the SRRQ (40-60% according to the DEIR).
Dr. Lucy and Ms. Marmor  
April 10, 2008  
Page 5

COMMENTS REGARDING EMISSION RATES USED TO ESTIMATE HEALTH RISKS

1. Emissions from the project are improperly averaged over a 70-year period that includes a lengthy non-operational period, resulting in a substantial underestimation of modeled air concentrations and consequent health risks. Emission rates used to calculate health risks from air toxics emission sources should be based on the emissions during the period of facility operation only. They should not be averaged down by including any non-operational, zero-emissions period after the facility is expected, or assumed to be, shut down. For example, the C-silica emissions from the aggregate plant in the project scenario are shown to be 5,292 lb/yr in Appendix D, but the health risk assessment (HRA) uses a value of only 1,285 lb/yr. The value of 1,285 lb/yr is obtained by multiplying 5,292 lb/yr by 17 years of operation and dividing it by 70 years. It is assumed that the 17 years of operation comes from the planned end to quarrying operations in 2024 from Chapter 3 of the DEIR, and that all emissions of C-silica after 2024 are zero. The figure of 70 years is assumed to come from the standard averaging period for cancer risk. The averaged emission rate of 1,285 lb/yr is the value input to HARP and used to calculate air concentrations. This averaging is improper because it shows an artificially low emission rate which will understate the health hazard from chronic exposure by more than a factor of 4. Emissions should be modeled based on actual emissions over the period the facility will be operating. Attachment D in this letter illustrates how the averaged emission rate used in the DEIR compares to the actual emission rate during the period of SRRQ operation. Averaging the C-silica emissions as was done in the DEIR would be expected to result in an approximate 4-fold underestimation of modeled air concentrations.

2. The DPM emission rates used in the HARP emission files do not match the values shown in Appendix C. DPM emission rates in the HARP emission file cannot be verified using any of the provided materials.

3. The emission rates of C-silica and DPM from reclamation shown in Appendix C do not match the values actually used in HARP to do the air modeling. For example, the HARP emissions file for the project scenario show C-silica emissions of 124 lb/yr and DPM emissions of 4.03 lb/yr. These values could not be found in Appendix D, and do not match the values calculated in Appendix C. Appendix C shows C-silica emissions of 54,393 lb/yr from unpaved roads and material handling and DPM emissions of 1,242 lb/yr from exhaust and onsite truck travel for Phase 4 of the reclamation. No sources are included to match these emission rates and no modeled sources indicate emissions vary by year or have emissions averaged over five years, therefore it cannot be confirmed that reclamation emissions are included in the modeling and calculation of air concentrations and health risk. If reclamation emissions were not included in the modeling this emission would result in a significant underestimation of air concentrations of contaminants and consequent health risks.

4. C-silica emissions from the portable plant were not included in the modeled emissions. The daily emissions shown for this source in Appendix D are very significant (10,940 lb PM10 per year for the project scenario), but the source is not included in the AERMOD model or HARP emission file. Exclusion of this emission source would result in a very significant underestimation of total emissions and health risks.

5. Aggregate plant silica emission rates – Annual particulate emission rates in Appendix D, including the silica emission rates of 4,419 lb/year for 5,292 lb/year for existing and proposed emissions from

Attachment 1A
the aggregate plant, respectively, cannot be derived from the hourly emission rates listed in Appendix D. Based on the operating schedule of 19 hours per day from December to April and 15 hours per day from May to November, the annual emission rate should be 10,500 lb/year and 12,600 lb/year for C-silica under the existing and proposed conditions, respectively. Correcting these emission rates would result in a significant increase in health risks.

6. Wheels on haul trucks – In the DEIR, the number of wheels assumed in the equation above, M, is only 6. Although this may be true for some trucks used at the SRRQ, residents in the surrounding neighborhood report regularly seeing 18-wheel haul trucks moving in and out of the SRRQ on both paved and unpaved roads. The DEIR does not take into account emissions generated by the movement of 18-wheel haul trucks on unpaved roads, only 6-wheel haul trucks. The dust emissions generated by vehicles depends greatly on the number of wheels on the vehicle. By omitting the dust emissions generated by 18-wheel haul trucks moving on unpaved roads, the DEIR is significantly underestimating total dust (and hence C-silica) emissions from the SRRQ and the associated health risks.

7. The emissions from generators shown in Appendix C are not included in the modeled emissions. The project DPM emission rate from the generator is 293 lb/yr, but this value does not match any sources in the HARP emission file. Not including this emission source in the total emission rate would result in an underestimation of health risks.

8. Cancer and chronic risk totals conflict between the DEIR report and the HARP model output – The cancer risk shown in Table 4.2-15 and the hazard index shown in Table 4.2-17 do not match the risk and hazard shown in the HARP. Table 4.2-15 shows a cancer risk of 14.2 in a million, increased risk for cancer, but the HARP risk file shows a value of 24.7 in a million. The HARP model output shows a total cancer risks almost twice that shown in the DEIR.

9. Unexplained emission multipliers in HARP – Emission multipliers are used in HARP, but there is no explanation of where these multipliers come from (i.e. how they were derived or what they are based on). For example, in the proposed scenario, Source 5, blasting, has a multiplier of 48.7, but there is no reason that source should have a multiplier.

AIR DISPERSION (AERMOD) MODELING COMMENTS

Air dispersion modeling was conducted to determine air concentrations of emitted contaminants at locations surrounding the SRRQ. The air dispersion model AERMOD was used to do this. This is the leading and most widely accepted air dispersion model in use at this time, and the selection of this model to model SRRQ emissions is appropriate.

However, the use of improperly averaged emission rates and the omission of several significant emission sources (as discussed above) in the modeling would result in a significant underestimation of health risks. In addition, and as noted above, none of the modeled air concentrations are presented in the DEIR proper, making it impossible for interested parties to know exactly what air concentrations of contaminants they are being exposed to. In fact, in the form currently issued, one would not be able to find out what those air concentrations are unless they knew how to use AERMOD and HARP, an unreasonable expectation for the lay public. Information regarding the modeled air concentrations should at least be summarized in a table in the DEIR proper so that this fundamental information about community exposure to
SRRQ contaminants can be readily accessed and reviewed by the individuals actually experiencing the exposure.

Sincerely,

Paul Damian

Paul Damian PhD, MPH, DABT
National Practice Leader
Risk Assessment and Toxicology
Board Certified Toxicologist
SCS ENGINEERS
916-361-1297

Attachment

cc.  Mr. William Hosken (via email)
     Mr. David Crutcher (via email)
Attachment A

Figure from Onsite Environmental Laboratory’s Report Dated March 15, 2001 Showing Total Suspended Particulate Concentrations Following Blasts at the SRRQ
Total Suspended Particulate (TSP) in ug/m³
Week Number Two
Location One

Days of week

Attachment 1A
Attachment B

DEIR Wind Rose Data Showing Predominant Wind Direction from the South and Southwest (Away from SRRQ Toward Residents)
<table>
<thead>
<tr>
<th>WIND ROSE PLOT:</th>
<th>DISPLAY: Wind Speed Direction (blowing from)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Via Montabello</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WIND SPEED (Knots)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;= 41</td>
</tr>
<tr>
<td>16 - 40</td>
</tr>
<tr>
<td>10 - 16</td>
</tr>
<tr>
<td>6 - 10</td>
</tr>
<tr>
<td>3 - 6</td>
</tr>
<tr>
<td>1 - 3</td>
</tr>
<tr>
<td>Calms: 14.18%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COMMENTS:</th>
<th>DATA PERIOD:</th>
<th>COMPANY NAME:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2004-2005 Jan 1 - Dec 31 00:00 - 23:00</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MODELER:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CALM WINDS:</th>
<th>TOTAL COUNT:</th>
<th>DATE:</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.18%</td>
<td>10416 hrs.</td>
<td>4/11/2008</td>
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<tr>
<td>AVG. WIND SPEED:</td>
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<tr>
<td>4.79 Knots</td>
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</tr>
</tbody>
</table>

Attachment 1A
Attachment C

Comparison of DEIR-Modeled Air Concentrations of Crystalline Silica and Diesel Particulate Matter to Health Risk Benchmarks and Occupational Exposure Limits
### TABLE 1

**MODELED CONCENTRATION OF CRystalline Silica AT SENSITIVE RECEPTORS FROM DEIR**

<table>
<thead>
<tr>
<th>Receptor</th>
<th>Crystalline Silica Air Concentration (ug/m³)</th>
<th>1 hour</th>
<th>4 hour</th>
<th>6 and 7 hour</th>
<th>30 day</th>
<th>Annual (from DEIR)</th>
<th>Annual (corrected)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Exposed Individual (North of Haul Road)</td>
<td></td>
<td>652</td>
<td>586</td>
<td>521</td>
<td>196</td>
<td>0.159</td>
<td>0.65</td>
</tr>
<tr>
<td>San Pedro Elementary School</td>
<td></td>
<td>167</td>
<td>151</td>
<td>134</td>
<td>50</td>
<td>0.016</td>
<td>0.064</td>
</tr>
<tr>
<td>Intersection of Beach Drive and Point San Pedro Road</td>
<td></td>
<td>167</td>
<td>150</td>
<td>133</td>
<td>50</td>
<td>0.023</td>
<td>0.094</td>
</tr>
<tr>
<td>Glenwood Elementary School</td>
<td></td>
<td>117</td>
<td>105</td>
<td>94</td>
<td>35</td>
<td>0.023</td>
<td>0.093</td>
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<tr>
<td>San Rafael High School</td>
<td></td>
<td>114</td>
<td>103</td>
<td>92</td>
<td>34</td>
<td>0.010</td>
<td>0.042</td>
</tr>
<tr>
<td>Occupational Exposure Limit</td>
<td></td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>25</td>
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<tr>
<td>REL</td>
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<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
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</tr>
</tbody>
</table>

*San Rafael High School is not located within the modeled receptors. The nearest available receptor was used as the approximate location.*
Figure 1
Modeled Crystalline Silica Air Concentrations from DEIR

- Maximum Exposed Individual (North of Haul Road)
- Glenwood Elementary School
- Intersection of Beach Drive and Point San Pedro Road
- San Pedro Elementary School
- San Rafael High School

Crystalline Silica Occupational Exposure Limit (25 ug/m³)
Crystalline Silica REL (3 ug/m³)

Averaging Time

Attachment 1A
Figure 2
Modeled Diesel Particulate Air Concentrations from DEIR

- Maximum Exposed Individual (North of Haul Road)
- Glenwood Elementary School
- Intersection of Beach Drive and Point San Pedro Road
- San Pedro Elementary School
- San Rafael High School

Diesel Particulate REL (5 ug/m³)

Averaging Time

Attachment 1A
Attachment D

Comparison of Crystalline Silica Emission Rate Used to Calculate Health Risks in DEIR To Actual SRRQ Emission Rate
Comparison of Proposed Actual Emission Rate to Emission Rate Used in DEIR to Calculate Health Risks

- Proposed Actual Emission Rate (20,400 lb/yr)
- Emission Rate Used to Calculate Health Risk (5,052 lb/yr)

Quarrying operations, including all aggregate handling and hauling stop in 2025.
January 14, 2008

Dr. Denise Lucy and Ms. Bonnie Marmor
Co-Presidents
Point San Pedro Road Coalition
732 Point San Pedro Road
San Rafael, California 94901

Subject: Potential Health Risks Associated with Emissions of Crystalline Silica from the San Rafael Rock Quarry

Dear Dr. Lucy and Ms. Marmor:

I have been asked by the Point San Pedro Road Coalition (PSPRC) to render an opinion regarding the potential for public health impacts associated with emissions of crystalline silica (C-silica) from the San Rafael Rock Quarry (SRRQ). In forming my opinion, I have reviewed a great deal of information provided to me by the PSPRC, most importantly:

- San Rafael Rock Quarry Amended Surface Mining and Quarrying Permit Initial Study (IS). June 2007.

I have also examined photos of the dust clouds emitted by the quarry and photos of dust accumulations from around the community (as shown in the report by H. Rod Warters), related maps, available analytical results from air quality sampling (Sonoma Technology report) and bulk dust sampling (Warters report). The following sections discuss the health hazards of C-silica generally, emissions of C-silica from the SRRQ, and the likely community health impacts of these C-silica emissions.

**Health Hazards of Crystalline Silica**

Although there are other public health concerns related to the SRRQ operations (notably the potential synergistic toxicity of diesel exhaust exposure discussed below), the most potentially serious in my opinion is exposure to excess levels of C-silica. It is well-documented that C-silica exposure is associated with crushed rock operations. In a survey of 19 crushed rock operations, the National Institute of Occupational Health and Safety (NIOSH) detected C-silica at 17 of the operations (Kullman et al., 1995). Overexposures to C-silica (levels exceeding occupational exposure limits) were measured at 16 of the operations (Kullman et al., 1995). C-silica is listed by the California Air Resources Board as a Toxic Air Contaminant and considered a carcinogen (cancer-causing compound) via the inhalation route of

Attachment 1B
exposure by the International Agency for Research on Cancer (IARC) (IARC, 1997). It is associated with an increased incidence of lung cancer. According to IARC, “Crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans” (note that quartz silica is the most likely form of C-silica to which residents in the area are exposed, as described in more detail below). Thus, long-term exposure to C-silica of the form found to predominate in the vicinity of the SRRQ (i.e. quartz) is associated with an increased incidence of lung cancer (IARC, 1997; Calvert et al., 2003). C-silica is also listed by the State of California as a carcinogen under Proposition 65.

Diesel exhaust is also listed as a California Air Resources Board Toxic Air Contaminant and a Proposition 65 carcinogen. It is also considered carcinogenic by the State of California Air Resources Board and is regulated as such (Office of Environmental Health Hazard Assessment [OEHHHA], 2007). The co-occurrence of these two carcinogenic particulates (C-silica and diesel exhaust particulate) should be considered a particularly hazardous combination as it has been well documented that combined exposures to cancer-causing smokes and particulates results in much greater risks of cancer than if the risks associated with each were simply added. This is similar to asbestos and cigarette smoke. The incidence of asbestos-related lung cancer is much higher in individuals also exposed to cigarette smoke (Hammond et al., 1979). This is called synergistic toxicity. A similar type of exposure situation is occurring in this community with the combined exposure to C-silica and diesel exhaust particulate.

In addition to lung cancer, long-term exposure to C-silica can result in silicosis, a debilitating, progressive, and incurable lung disease. Acute silicosis can occur in individuals exposed to very high levels of C-silica for as little as a few months. It progresses rapidly and usually results in death within a year or two. Chronic silicosis typically occurs after years (usually more than 10) of long-term, low-level exposure. Long-term exposure to C-silica has also been associated with increased incidences of chronic obstructive pulmonary disease (COPD), tuberculosis, and some autoimmune diseases (including lupus and rheumatoid arthritis) (Parks et al., 1999; Calvert et al., 2003). These are all serious diseases that are typically associated with long-term exposure to C-silica.

Quarry Emissions of Crystalline Silica

According to the IS, the quarry generates 641 pounds of PM10 (respirable particulate matter with a diameter of 10 micrometers or less) per day. Of this amount, about 270 pounds is expected to contain C-silica, since 266 pounds are related to “fugitive dust emissions from on-site excavation and transport equipment” and 4 pounds per day are from blasting (4 pounds per blast) according to the IS. Activities at the quarry generate large visible clouds of dust, documented in photographs, which disperse and settle over the surrounding neighborhood on a regular basis, accumulating obviously in public use areas and on the leaves of plants.

Note that the estimate of 4 lbs of PM10 per blast (and per day) presented in the IS appears quite low, based on the photographs of dust clouds which emanate from the blasts. Also, this estimate implies one blast per day, whereas local residents and information from the Marin County website indicate a blasting frequency of about 100/year or about two blasts per week (personal communication, Mr. William Hosken). The methods used to determine this value (4 lbs/blast/day) should therefore be confirmed.

That this dust actually contains high levels of C-silica is indicated by the following facts: First, the quarry mines Franciscan greywacke sandstone and sandstone contains high levels of C-silica (see attached Material Safety Data Sheet for sandstone in Attachment A). Second, bulk dust samples collected from obvious, atypical accumulations of dust in public use areas were analyzed by the R.J. Lee Group and have
been shown to contain high quantities (25%) of C-silica in the quartz form (R.J. Lee Group laboratory report presented in the Warters report cited above). Furthermore, this is clearly not normal background dust since background dust rarely leaves the significant visible accumulations on tennis courts, plant leaves, and numerous other public surfaces that have been documented in these neighborhoods. Undoubtedly, this dust is a direct result of the nearby SRRQ emissions. Importantly, the dust that has settled in large quantities in the neighborhood serves as a continuous reservoir of C-silica exposure through resuspension caused by wind movement, motor vehicle and bike traffic, recreational activities or other means of agitation. The dust is also likely to be tracked into homes through clothing and shoes where it can also be resuspended and inhaled. Thus, even when the quarry is not operating it is likely that individuals in the community are continually being exposed to airborne C-silica via resuspension of the settled dust in the community and in their own homes. Thus, exposure to an excessive level of C-silica is probably occurring 24 hours a day.

Although there is obvious evidence of extraordinary and unnatural levels of C-silica-containing dust in the area, there is very limited information regarding the actual levels of C-silica in the air. PM10 has been measured on numerous occasions; however, I could find no information documenting the specific measurement of C-silica using the current appropriate sampling and analytical methodology (NIOSH Method 7500). Apparently fifteen measurements of C-silica were collected in 2004 (Sonoma Technology report cited above). All of these samples, which notably were collected during the rainy season from October to February, showed no detection of C-silica (detection limit of 0.5 mg/m³). In addition, the analytical method used for C-silica is not specified in the summary report I have reviewed.

In my opinion it is very hard to fathom the finding of no detectable C-silica in air (even during the rainy season) when the neighborhood has obvious accumulations of C-silica-containing dust everywhere.

Potential Health Consequences of Quarry Operations

The ongoing inundation of the neighborhoods in the vicinity of the SRRQ with C-silica-containing dust presents a serious potential health hazard to local residents, especially sensitive populations, such as children, the aged, and those with pre-existing respiratory diseases. Long-term exposure to C-silica in occupational settings has been clearly shown to be associated with increased incidences of lung cancer, silicosis, tuberculosis, COPD, and autoimmune diseases. Although the residents in the vicinity of the SRRQ area are not technically occupationally exposed, their current exposure levels may actually be similar to occupationally exposed workers due to their close proximity to the SRRQ. The very high levels of visible dust on public use surfaces throughout the community, demonstrated to contain 25% C-silica, also indicate significant potential for ongoing inhalation exposure due to resuspension, which may occur both indoors and outdoors. Finally, the combination of C-silica exposure and diesel exhaust is particularly hazardous since smoke inhalation has been shown to increase rates of particulate-associated lung cancer.

Recommendations

It is therefore recommended that a short period (1-2 months) of intensive air sampling be conducted using the appropriate analytical methodology and adequate detection limits (minimally below 3 µg/m³) for C-silica to conclusively determine what levels of C-silica residents in the neighborhood are actually breathing. This sampling should be conducted during the dry season to capture the maximum emission impact, and should be conducted in such a way as to capture the large episodic releases of silica emissions that occur during blasting. Samples should also be collected indoors since significant amounts of C-silica
are likely to be tracked into the homes causing further exposure. Ideally, this sampling would also include personal air sampling. Samples should be collected and analyzed using the appropriate sampling and analytical methodology (NIOSH Method 7500). The resulting measured air levels of C-silica should be evaluated, at a minimum, by comparison to the California OEHHA’s Chronic Reference Exposure Level (REL) for C-silica of 3 μg/m³ (OEHHA, 2005) and to the USEPA zero percent risk level for silicosis of 1 mg/m³•years (USEPA, 1996).

If the intensive C-silica sampling results indicate exceedance of current health risk benchmarks for C-silica, specifically, the California REL and the USEPA no risk threshold for silicosis, then immediate measures should be taken to significantly reduce SRRQ dust emissions to below negligible health risk levels.

A health risk assessment using comprehensive, not screening methodologies, should be conducted to determine the long-term pattern of C-silica and diesel exhaust exposure to the community. The risk assessment should be based on emission factors from all dust- and diesel particulate-generating processes occurring at SRRQ. It should utilize local meteorological data, employ the current standard air dispersion model (AERMOD), and the results should be interpreted based on the only current health-risk based benchmarks of C-silica exposure available (as noted above), and using standard toxicity criteria for interpretation of diesel particulate risks.

Finally, if there is any doubt as to the source of the dust accumulating in the neighborhood, elemental analysis of dust samples collected up- and downwind of the SRRQ should be conducted. This can be done (Shiraki and Homén, 2002). The elemental analysis will allow tracking of the C-silica to its source.

Please don’t hesitate to call me should you have any questions regarding this report.

Sincerely,

Paul Damian
PhD, MPH, DABT
National Practice Leader
Risk Assessment and Toxicology
Board Certified Toxicologist
SCS ENGINEERS
916-361-1297

Attachment

cc. Mr. William Hosken
Mr. David Crutcher

Attachment 1B
REFERENCES


Questions to be Asked Regarding the Monitoring and Assessment of SRRQ Operations

1. Have there been any other C-silica measurements besides the 15 measurements collected in 2004? Please provide the original analytical data reports for any and all such measurements. What was the specific analytical method used for these measurements of C-silica?

2. Is there any monitoring for C-silica going on currently? If so, what is the current schedule for measuring C-silica? (i.e., on what days and at what times during the day, etc. are the measurements taken). How will the air quality impacts of episodic events, such as blasts, be captured? How long is the C-silica monitoring scheduled to last?

3. Is there, or will there be any indoor air monitoring of C-silica?

4. What analytical method is being used to measure C-silica? What is the detection limit for C-silica for the currently used method?

5. We would like to see C-silica measurement results as soon as they are generated. Can we see all C-silica measurements collected to date?

6. Are there currently any plans to do a comprehensive air toxics emission health risk assessment for both C-silica and diesel exhaust particulate at this time?

7. If measurements of C-silica indicate exceedance of health-risk benchmarks, documenting increased health risks, will immediate mitigative measures be implemented at the SRRQ?

8. The Initial Study states that blasts occur once per day and emit 4 lbs of PM10 per blast. Please explain how these values were determined.
ATTACHMENT A

Material Safety Data Sheet for Sandstone

30-44

Attachment 1B
Material Safety Data Sheet  
(Sandstone)

Company Name: Glenn O. Hawbaker, Inc.  
1952 Waddle Road  
P. O. Box 135  
State College, PA 16804  
(814) 237-1444

1. IDENTIFICATION  
Chemical Name: Sandstone  
Trade Name: Sandstone  
Synonym(s): Sandstone

2. PRODUCT AND COMPONENT DATA  
Component(s) Chemical Name: Sandstone  
CAS Registry No.: 14808-60-7  
% (Approx): 100  
Exposure Limits: See section 6

*Composition varies naturally – typically contains high levels of quartz (crystalline silica).

3. PHYSICAL DATA  
Appearance and Odor: Angular gray, white and tan particles ranging in size from powder to boulders. No odor.  
Specific Gravity: 2.6 – 2.75  
Bolling point (At 1 Atm.): N/A  
Vapor Density in Air (Air = 1): N/A  
Vapor Pressure (mmHg @ 20 C): N/A  
% Volatile, By Volume (at 100 F): 0%  
Evaporation Rate (at 1Atm. and 25 C; n-butyl acetate = 1): 0  
Solubility in Water: 30-44 cont.

4. REACTIVITY DATA  
Stability: Stable  
Conditions to Avoid: Avoid contact with incompatible materials (see below).  
Incompatibility (materials to avoid): Contact with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride may cause fire and/or explosions. Silica dissolves in hydrofluoric acid producing a corrosive gas – silicon tetrafluoride.  
Hazardous Decomposition Products: Silica-containing respirable dust particles may be generated by handling. When heated, quartz is slowly transformed into tridymite (above 860EC / 1580EF) and cristobalite (above 1470EC / 2678EF). Both tridymite and cristobalite are considered more fibrogenic to the lungs than quartz.  
Hazardous Polymerization: Not known to polymerize

5. FIRE AND EXPLOSION HAZARD DATA  
Flashpoint (Method used): Not flammable  
Flammable Limits in Air: Not Flammable  
Extinguishing Agents: None required  
Unusual Fire and Explosion Hazards: Contact with powerful oxidizing agents may cause fire and/or explosions (see section 4 of this MSDS).

6. TOXICITY AND FIRST AID EXPOSURE LIMITS  
(When exposure to this product and other chemicals is concurrent, the exposure limit must be defined in the workplace.)

Attachment 1B
Unless specified otherwise, limits are expressed as eight-hour time-weighted aver ages (TWA). Limits for cristobalite and tridymite (other forms of crystal line silica) are equal to one-half of the limits for quartz.

ABBREVIATIONS: TLV® = threshold limit value of the American Conference of Governmental Industrial Hygienists (ACGIH); MSHA PEL = permissible exposure limit of the Mine Safety and Health Administration (MSHA); OSHA PEL = permissible exposure limit of the Occupational Safety and Health Administration (OSHA); mg/m³ = milligrams of substance per cubic meter of air.

Other Particulates: 2001 ACGIH TLV® = 10mg/m³ (inhalable/total particulate, not otherwise specified), 2001 ACGIH TLV® = 3mg/m³ (respirable particulate, not otherwise specified); OSHA PEL = 15mg/m³ (total particulate, not otherwise regulated), OSHA PEL = 5mg/m³ (respirable particulate, not otherwise regulated). Respirable Crystalline Silica (SiO₂ quartz): ACGIH TLV® = 0.05mg/m³; MSHA and OSHA PEL = 10mg/m³ + (%SiO₂ + 2), for respirable dust containing crystalline silica.

Total dust, respirable and nonrespirable: 1973 ACGIH TLV® = 30mg/m³ + (%quartz + 3).

Total Dust: MSHA PEL = 10mg/m³, for nuisance particulates listed in Appendix E of the 1973 ACGIH TLV® booklet. (Appendix E includes: alundum (Al₂O₃); calcium carbonate; cellulose (paper fiber); portland cement; corundum (Al₂O₃); emery; glass [fibrous (<5-7 μm in diameter) or dust]; glycerin mist; graphite (synthetic); gypsum; vegetable oil mist (except castor, cashew nut, or similar irritant oils); kaolin; limestone; magnesite; marble; pentaerythritol; plaster of Paris; rouge; silicon carbide; starch; sucrose; tin oxide; and titanium dioxide.)

Per ACGIH, adverse effects are not likely to occur in the workplace provided exposure levels do not exceed the appropriate TLVs/PELs. However, because of the wide variation in individual susceptibility, lower exposure limits may be appropriate for some individuals including persons with pre-existing medical conditions such as those described below.

Medical Conditions Aggravated by Exposure: Inhaling respirable dust and/or crystalline silica may aggravate existing respiratory system disease(s) and/or dysfunctions. Exposure to dust may aggravate existing skin and/or eye conditions.

Primary Route(s) of Exposure X_inhalation      _Skin      _Ingestion

Acute Toxicity

EYE CONTACT: Direct contact with dust may cause irritation by mechanical abrasion.

SKIN CONTACT: Direct contact may cause irritation by mechanical abrasion.

SKIN ABSORPTION: Not expected to be a significant exposure route.

INGESTION: Expected to be practically non-toxic. Ingestion of large amounts may cause gastrointestinal irritation and blockage.

INHALATION: Dusts may irritate the nose, throat, and respiratory tract by mechanical abrasion. Coughing, sneezing, and shortness of breath may occur following exposures in excess of appropriate exposure limits.

Use of sandstone for construction purposes is not believed to cause additional acute toxic effects. However, repeated overexposures to very high levels of respirable crystalline silica (quartz, cristobalite, tridymite) for periods as short as six months have caused acute silicosis. Acute silicosis is a rapidly progressive, incurable lung disease that is typically fatal. Symptoms include (but are not limited to): shortness of breath, cough, fever, weight loss, and chest pain.
First Aid
EYES: Immediately flush eye(s) with plenty of clean water for at least 15 minutes, while holding the eyelid(s) open. Occasionally lift the eyelid(s) to ensure thorough rinsing. Beyond flushing, do not attempt to remove material from the eye(s). Contact a physician if irritation persists or later develops.
SKIN: Wash with soap and water. Contact a physician if irritation persists or later develops.
INGESTION: If person is conscious, give large quantity of water and induce vomiting; however, never attempt to make an unconscious person drink or vomit. Get immediate medical attention.
INHALATION: Remove to fresh air. Dust in throat and nasal passages should clear spontaneously. Contact a physician if irritation persists or later develops.

For emergencies, contact Curtis B. Moore, (814) 359-5089

Chronic Toxicity
Prolonged and repeated inhalation of respirable crystalline silica-containing dust in excess of appropriate exposure limits has caused silicosis, a lung disease. Not all individuals with silicosis will exhibit symptoms (signs) of the disease. However, silicosis can be progressive, and symptoms can appear at any time, even years after exposure has ceased. Symptoms of silicosis may include, but are not limited to, the following: shortness of breath; difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; right heart enlargement and/or failure. Smoking may increase the risk of developing lung disorders, including emphysema and lung cancer. Persons with silicosis have an increased risk of pulmonary tuberculosis infection. Respirable dust containing newly broken silica particles has been shown to be more hazardous to animals in laboratory tests than respirable dust containing older silica particles of similar size. Respirable silica particles which had aged for sixty days or more showed less lung injury in animals than equal exposures of respirable dust containing newly broken particles of silica. There are reports in the literature suggesting that excessive crystalline silica exposure may be associated with adverse health effects involving the kidney, scleroderma (thickening of the skin caused by swelling and thickening of fibrous tissue) and other autoimmune disorders. However, this evidence has been obtained primarily from case reports involving individuals working in high exposure situations or those who have already developed silicosis; and therefore, this evidence does not conclusively prove a causal relationship between silica or silicosis and these adverse health effects. Several studies of persons with silicosis also indicate an increased risk of developing lung cancer, a risk that increases with the duration of exposure. Many of these studies of silicotics do not account for lung cancer confounders, especially smoking. Sandstone is not listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA). In October 1996, an IARC Working Group re-assessing crystalline silica, a component of this product, designated crystalline silica as carcinogenic (Group 1). The NTP's Report on Carcinogens, 9th edition, lists respirable crystalline silica as a "known human carcinogen." In year 2000, the American Conference of Governmental Industrial Hygienists (ACGIH) listed respirable crystalline silica (quartz) as a suspected human carcinogen (A-2). These classifications are based on sufficient evidence of carcinogenicity in certain experimental animals and on selected epidemiological studies of workers exposed to crystalline silica.

7. PERSONAL PROTECTION AND CONTROLS
Respiratory Protection
For respirable quartz levels that exceed or are likely to exceed an 8-hr TWA of 0.1mg/m³, a NIOSH approved dust respirator is recommended. For respirable quartz levels that exceed or are likely to exceed an 8-hr TWA of 0.5mg/m³, a NIOSH approved HEPA filter respirator is recommended. If respirable quartz levels exceed or are likely to exceed an 8-hr TWA of 5mg/m³, a NIOSH approved positive pressure, full face respirator or equivalent is recommended. Respirator use must comply with applicable MSHA or OSHA standards, which include provisions for a user training program, respirator repair and cleaning, respirator fit testing, and other requirements.

Ventilation
Local exhaust or general ventilation adequate to maintain exposures below appropriate exposure limits.

Attachment 1B
Skin Protection
See "Hygiene" section below.

Eye Protection
Safety glasses with side shields should be worn as minimum protection. Dust goggles should be worn when excessively (visible) dusty conditions are present or are anticipated.

Hygiene
Wash dust-exposed skin with soap and water before eating, drinking, smoking, and using toilet facilities. Wash work clothes after each use.

Other Control Measures
Respirable dust and quartz levels should be monitored regularly. Dust and quartz levels in excess of appropriate exposure limits should be reduced by all feasible engineering controls, including (but not limited to) wet suppression, ventilation, process enclosure, and enclosed employee work stations.

8. STORAGE AND HANDLING PRECAUTIONS
This product is not intended or designed for use as an abrasive blasting material, and should not be used for abrasive blasting.

Respirable crystalline silica-containing dust may be generated during processing, handling, and storage. The personal protection and controls identified in Section 7 of the MSDS should be applied as appropriate.

Do not store near food and beverages or smoking materials.

9. SPILL, LEAK AND DISPOSAL PRACTICES
Steps to be Taken in Case Material is Released or Spilled
The personal protection and controls identified in Section 7 of the MSDS should be used as appropriate. Spilled material, where dust can be generated, may overexpose cleanup personnel to respirable crystalline silica-containing dust. Wetting of spilled material and/or use of respiratory protective equipment may be necessary. Do not dry sweep spilled material. Prevent spilled materials from inadvertently entering streams, drains, or sewers.

For emergencies, contact Curtis B. Moore, (814) 359-5089

Waste Disposal Method
Pick up and reuse clean materials. Dispose of waste materials only in accordance with applicable federal, state, and local laws and regulations.

10. TRANSPORTATION
DOT Hazard Classification: None
Placard Required: None
Label Required: Label as required by the OSHA Hazard Communication Standard [29 CFR 1910.1200 (f)] and applicable state and local laws and regulations.

For Further Information Contact: Curtis B. Moore
Glenn O. Hawbaker, Inc.
711 E. College Avenue
Bellesfonte, PA 16823
(814) 359-5089

Date of Preparation: May 1, 2004

Emergency Information: Curtis B. Moore, (814) 359-5089
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NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.
# Baseline Determination

<table>
<thead>
<tr>
<th>Project Overview</th>
<th>No baseline information on production is included in the DEIR. This impacts the entire project.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline Determination.</strong></td>
<td>The baseline determinations were described in the Initial Study, but are not included in the DEIR. This is a crucial consideration since the entire proposed project is based upon the 1982 production levels. Estimates of these levels have been determined without considering complete evidence on file in County and Court files. The baseline production is substantially overstated for overall production levels. Because of the fundamental importance of a baseline, the DEIR must make a greater effort to determine an accurate 1982 baseline. The 1982 production baseline is directly related to the determination of 1982 trucking and barging, so the DEIR must analyze trucking impacts and alternatives to a much greater extent than contained in the DEIR.</td>
</tr>
<tr>
<td>The approach to define a baseline for this project has been completely undermined due to the withholding of key information contained in the Merrill Lynch Capital Markets October 1984 report. The 1984 Merrill Lynch report is crucially important for the County to determine the baseline for operations because it provides solid production and transportation evidence. The DEIR inappropriately applies Tom Lai's estimates, which are not based on past baseline or production evidence on file with the County of Marin and in Court filings.</td>
<td></td>
</tr>
</tbody>
</table>

| Project Overview | The October 18, 2007 letter by Ms. Tamara Taylor, Environmental Planning Aide in Tim Haddad's office of the Marin County Community Development Agency indicated that the County only used a portion of the report because the SRRQ claimed that the other portions were proprietary and confidential. She further stated, however, that the entire report may be on file with the Court of the County of Marin. According to Ms. Taylor, the IS used only the title page, table of contents, and page 6 that included a table entitled, "Summary Tonnage and Data" from the 1984 Merrill Lynch Basalt Rock report rather than the complete 23-page report. The IS used a 1998 letter from Whitlock & Weinberger Transportation. Ms. Taylor's letter included these two above-mentioned documents, which we have attached in our EXHIBIT A. The following summarizes our concerns related to the use of these documents in the IS and the DEIR: |

1

Attachment 2
Point San Pedro Road Coalition DEIR Comments

1. The 1984 Merrill Lynch Basalt Rock report is not owned by SRRQ, and this 24-year old sales document could not reasonably be considered a confidential document of the SRRQ. The withholding of this 23-page report, with attachments, was based upon a belief by the County that a claim of proprietary confidentiality by SRRQ is applicable. The report is dated October 1984, and was developed as a prospectus by Merrill Lynch Capital Markets. San Rafael Rock Quarry did not own the property or the data contained in the report. Therefore, the claim of proprietary confidentiality is not applicable. A copy of the full 23-page report is included as EXHIBIT B.

2. The report provides a complete and accurate historical overview of operations and baseline as to the existing permitted conditions in 1982. It must be used as a baseline for this DEIR. The report was obtained by one of the parties in the People of the State of California v. San Rafael Rock Quarry, Inc., Marin County Superior Court Case No. CV 014610. During discovery, Mr. Lee Markrack received a copy of this report from the State of California Attorney General’s office on May 29, 2002. The County of Marin is a party to the lawsuit, so this report has long been available to the County for its use in establishing an accurate baseline for production and transportation. This document must be used as the baseline to determine the impacts of the new application, or the County must explain why the information contained in the report is ignored in favor of Tom Lai’s estimates.

3. Whitlock & Weinberger information relating to tonnage and truck trips from 1990-1998 should not be used to determine a baseline for 1982. This 3-page September 9, 1998 letter from Whitlock & Weinberger Transportation, Inc. provided information on traffic analysis for the SRRQ office expansion. It contained information on tonnage and truck trips from 1990 to 1998, all of which is superfluous since the data were well after the 1982 baseline. It is unclear why and how this information would be used to determine truck traffic.

The DEIR must research much more thoroughly both SRRQ’s internal records and their external reports to regulators in order to arrive at more accurate current and historical production estimates, which has a direct impact on transportation of the material from the SRRQ by truck and barge. This would allow the full impact of the AQP to be examined in light of current and projected future levels.
## Point San Pedro Road Coalition DEIR Comments

| 3 - 24 | The DEIR item 6 on page 3-24 of the Project description states: “The Quarry must use barge transport to accommodate shipment of any increases in rock above the 1982 volumes and tonnages. Should barge operations be terminated, a traffic study by a qualified engineer shall be required to assess potential impacts and develop mitigations prior to transporting by roads.” The DEIR does not provide a traffic study of either barges or trucks. Also, the DEIR details neither a production baseline of 1982 nor a production plan for the project period. This is a significant omission. |
| 3 - 72 & 73 | Barge loading and truck trips are noted in the project description. It also describes the project’s plan for spacing trucks at 2-minute intervals. This plan is exactly what is currently in place. However, the DEIR does not study this impact. The DEIR does not provide an analysis of the current situation of the truck spacing that it is proposing to be maintained. |
| **Aesthetics** | **4.1 – 4 through 4.1 - 11** | Prior to the time SRRQ began mining outside the pit, the area known as South Hill was a lovely, serene, tree covered area that gently sloped into its natural wooded surroundings. The Quarry divided the marsh and cut off natural tidal flow which destroyed much of the marsh and drove away waterfowl and wildlife native to the area. South Hill continued to serve as a buffer between the open pit mining operation and the green belt surrounding the quarry property. The back half of South Hill (the side facing the homes that overlook the quarry) has been blasted away and nothing of it remains besides sheer, gutted rock face and mounds of gray rock tailings. Where once there was a lovely, rolling green vista, there is now the visually offensive rock wasteland left by SRRQ. There is no soil left, so nothing will grow. Once grand vistas of the bay and adjoining counties is now forever spoiled and replaced by ravaged earth and surface mining debris. Unlike a pit that can be filled with earth or water once the mining operation is finished, this blighted area cannot be restored to its former natural beauty. The half that is visible from Point San Pedro Road and areas beyond is still green and filled with trees and other plant life. The DEIR contains a number of photographs of the South Hill in Chapter 4 (Aesthetics) that misrepresent the impact that quarrying has had on the terrain. For example, Vantage Point 6 on page 4.1- |

30-45

30-46

30-47

30-48

Attachment 2
Point San Pedro Road Coalition DEIR Comments

9 is a photo from the residences at Marin Bay Park taken 2-3 years ago and does not even hint at the barren benches now viewed from homes toward the East. The view of that part of the quarry is completely different today. The area depicting South Hill and the area adjoining it (shown in the photo as green) is now completely grey and white rock; there are no more trees, there is no more green vegetation.

- The final EIR should contain accurate and contemporary photographs of South Hill, if only so readers can understand the consequences of an open pit mine in an otherwise beautiful area.

- The final EIR should address in detail how SRRQ will be prevented from further denuding South Hill so that views from the West and from Pt. San Pedro Road are shielded. We understand that those views were to be undisturbed.

- Finally, the EIR should include useful topographic and sectional maps that describe over time how the huge berm will be constructed and de-constructed over the years in connection with the ARP.

Air Quality

SCS Report

Many of our comments summarize comments contained in two letters from Dr. Paul Damian of SCS Engineers to the Coalition dated April 10, 2008 and January 14, 2008 attached to this document as Attachments 1A and 1B. SCS Engineers was engaged by the Coalition to assist in the review of the DEIR’s more technical provisions and calculations. Dr. Damian is a board certified toxicologist. Our comments follow, and relate to both the ARP and the AQP unless specified otherwise. We believe that Dr. Damian has described so many material flaws in the calculations and presentation of the air quality section of the DEIR that this section will need to be substantially redrafted with very different conclusions.

General

No Modeled Air Concentrations of Contaminants. The ARP DEIR contains no modeled air concentrations of crystalline silica ("C-silica") or diesel particulate matter ("DPM"), including at sensitive receptors such as schools, parks and nearby homes. In addition, no AERMOD or HARP model output is included, which prevents EIR users from determining how the modeling was conducted and renders it impossible to estimate the concentration of contaminants to which residents are exposed. Further technical deficiencies relating to this topic are discussed in General Comment 1 of Dr. Damian’s attached April 10th letter.
2001 Study Ignored. Beginning at page 4.2-14, the DEIR summarizes the results of a site-specific air quality-monitoring test performed by Sonoma Technologies, Inc. (STI) in 2004 and 2005. This test generally failed to pick up much PM-10 material at all, and went on to conclude that, generally, Quarry air is cleaner than non-Quarry air. These testing results are inconsistent with both what the DEIR’s air quality modeling predicts and with residents’ widely documented experience with the fine, gray dust that settles on their properties. Thus, it is puzzling why the DEIR ignores the results of a County-commissioned study performed by Onsite Environmental Laboratories, Inc., which was finalized in a report dated March 15, 2001, and which was pointed out to you in our Initial Study comment letter. The following information can be found in this report:

✓ The test period generally covered the month of October 2000.

✓ Four sites were tested; Marin Bay Park, Heritage Drive, McNears Beach Park and Tweed Terrace.

✓ At the Marin Bay Park site, PM-10 exceeded the benchmark limit for 14 days, and PM-2.5 for 6 days, during the testing month.

✓ On the first weekend day tested at Marin Bay Park, with “very little activity going on at quarry,” the filters were “still grayish in color because of reentrained dust retained on vegetation, etc.” Readings were 35 ug/M³ for PM-10 and 13 ug/M³ for PM-2.5.

✓ A blast conducted on the first Monday of the testing period prompted the following statement in the report: “Dust carried toward Station no. 3 (McNears Beach) and was at the receptor in @ 2.5 minutes.” The filter at Marin Bay Park was “dark gray in color and the filter cake was significant to the point of cake build up at the time of recovery.” The comment regarding receptor 2 (Heritage Drive) stated “It was observed that water trucks were washing the entrance road to the plan down with generous amounts of water being sprayed from the truck. Filter was light gray in color, darker than the day prior and had noticeable amounts of cake build up.” [Each day contains similar textual descriptions of the collected filters.]

✓ The range of readings for silica during the testing period was 1.87 to 78.25 ug/M³.

The Coalition has no knowledge of this test receiving any
Point San Pedro Road Coalition DEIR Comments

follow-up by the County. Further, this test was ignored by the DEIR, even though its results are obviously at odds with the STI air quality test prominently cited in the DEIR. Given that the Onsite test is consistent with both the air quality modeling results and the experience of residents with Quarry dust settling on their properties, it would seem that the STI test is the outlier, and the Onsite test more facially valid. It would seem prudent and sensible, at a minimum, for the DEIR to make some attempt to reconcile the Onsite study with the STI study, if only to present a more complete view of the facts. The final EIR should make that attempt.

One additional point regarding the Onsite test. The Coalition is in possession of an earlier draft of the Onsite report that contains the following comment:

"Results from this test series indicated that there were daily and annual exceedences for all TSP sample stations down wind of the Dutra Rock Quarry."

This statement was not present in the final Onsite report, though nothing in the final report suggests it is an inaccurate statement.

General

Enclosure Alternative. The DEIR fails to consider any fundamental changes to the Quarry’s operations that would likely substantially reduce the emission rates of C-silica. The most obvious measure that the Quarry could take that would substantially reduce C-silica emissions is the enclosure of the most offensive aspects of the operation, such as the barge loading operation and the rock crushers. The County is encouraged to read an article from Pit & Quarry, April 1, 2008 on this subject. Here’s a quote:

"Concrete Materials knew the dust resulting from their rock-crushing process could have a negative impact on the businesses and residences surrounding their plant. The solution they developed involved enclosing the screening towers to help confine the dust and allow them to control dispersion of it. 'Our plant has three different screening towers,' Mulloy said. 'We enclosed all of them. They’re all 22 ft. wide. The tallest one is 100 ft. tall. ... We know there are other plants that are located near cities, like we are. They utilize enclosed towers, too, to help with dust control.'"

SRRQ has consistently resisted making substantial capital investments that would make their operation much more tolerable to nearby residents, generally asserting that such measures would be too costly. They instead choose to take credit for far more modest operational changes, such as increased watering of trucks, encouragement of truck tarping and an improved sweeper. Though
these measures may be modestly helpful, they do not come close to making SRRQ a "best practices" operation. The EIR should conduct a best practices study on how quarries have dealt with residential encroachment, beginning with the South Dakota quarry featured in the magazine article described above. The EIR should evaluate how SRRQ rates in the use of these best practices, and should require substantial changes to its operation based on best practices employed by other quarries.

SRRQ is a very substantial industrial operation. It generates huge amounts of revenue and, presumably, profits, with which we have no philosophical objection. However, the DEIR makes no serious attempt to analyze either the operational or financial feasibility of enclosing prolific dust-producing aspects of its operation in order to make the facility safer (and no doubt convey other environmental benefits). Marin County should strive to get its quarry standards up to the level expected of South Dakota quarries.

**General**

*Monitoring of Air Quality.* The DEIR provides for no mandatory continuous monitoring for toxic air contaminants. Any reasonable TAC mitigation program should provide for independent, continuous monitoring of air quality at sensitive receptors around the Quarry, with test results regularly made available (e.g., posted weekly on the County website). With this information, the public should be able to assess for themselves the risks of living close to the Quarry. Further, both the ARP and AQP should state the consequences that will be imposed on the Quarry if test results show levels of TACs that exceed safe benchmark levels. The public needs to know now the extent to which the County will tolerate the Quarry emitting TACs that exceed safe levels.

**Health Risk Assessment**

*Health Risk Calculations Systematically Understate Risk.* Dr. Damian discusses in his letter how the DEIR's health risk assessment systematically and substantially understates the Quarry's health risks to individuals (in addition to the averaging error discussed above). For example, one variable in the calculation estimating toxic air contaminants requires inputting the number of wheels on the trucks transporting materials from the Quarry. The more wheels, the greater the emissions. The calculation assumed that Quarry trucks have 6 wheels. Virtually all of them in fact have 18. Though Dr. Damian describes many other problems with the calculations that understate risk, he probably did not find them all, and he could find no significant example of overstatement of risks in the calculations. These calculations are central to the utility of the EIR, and the results of Dr. Damian's review gives any reader reason to consider the accuracy of the calculations and reasonableness of the conclusions contained in
Point San Pedro Road Coalition DEIR Comments

| 4.2 - 1 and 2 | **Effects of Microclimates and Microterrain not Tested.** Page 4.2-1 of the DEIR states that inversion layers in the summer, and cool evenings in the winter, can concentrate pollutants and affect exposure. At page 4.2-2, it mentions the enhanced pollution potential of eastern Marin due to sheltered valleys and freeway proximity. The DEIR, however, contains no indication that these conditions were tested. If these microclimate and microterrain conditions are significant enough to mention as a potential contributor to air pollution exposure, they should be significant enough for the County to make a determination as to whether, and to what extent, these effects are actually contributing to exposure; at least the C-silica deadly sort. Presumably, that would require actual testing, since modeling does not ordinarily account for specific micro effects. |
| 4.2 - 3 | Mitigation measures proposed to reduce climate change impacts rely in part on biodiesel fuel blends (e.g. biodiesel is relied upon to reduce impact R4.2-3). Given credible reports that converting plants into fuel may use more fossil energy than its use saves at the other end, the EIR should consider embedded environmental costs of the biofuel’s off-site production in calculating the effectiveness of the proposed mitigations. |
| 4.2 - 3c | In some instances the proposed Mitigation Measures propose that the applicant prepare and/or implement a plan to do something at a future time. Relying on something being done in the future as a condition of project approval is of concern when there is no clear remedial action that would be performed if the proposed mitigation never occurs. An example is Mitigation Measure R4.2-3c, a requirement that within one year of project approval the applicant is to prepare a GHG reduction plan. The EIR should clarify what action would be taken if this measure were not carried out, or if it shows that the Quarry, operating as approved, cannot reduce GHG emissions consistent with County’s reduction plan. |
| 4.2 - 13 | The DEIR does not address the impact on air quality of the McNears Brickyard’s operation relating to truck traffic and dust and diesel from these trucks. There is no report of the number of trucks that go to and from McNears Brickyard. Truck traffic generated by the McNears Brickyard operation affects the health and well being of us all due to truck diesel emissions. The McNears Brickyard’s major industrial operations also result in environmental impacts that should be addressed. |
| 4.2 - 15 | **Hazard Index Should List Its Components.** The combined impact DEIR does not, but should, list all chemical contributors to |
the acute Hazard Index for recreational use at Table 4.2-15. It should also indicate the acute Hazard Index at all sensitive receptors, such as nearby homes, schools and parks.

4.2 - 16 The DEIR states that diesel particulate matter was studied for a two-month period. It fails to report which two-month period.

The DEIR should study diesel particulate matter for the entire year, but most crucially during the busiest months of the summer from April through October, with special attention during the driest months of June, July and August.

4.2 - 16 The DEIR states "overall data suggest that the metals content of the ambient air in the vicinity of the Quarry can occasionally exceed cancer benchmark concentrations, but the source of these pollutants can no be determined from this study.

Given the serious health risk, the study should be expanded to determine the sources of the cancer-causing agent.

4.2 - 17 Carcinogenicity of C-Silica Not in Dispute. The discussion at section 4.2-17 of the DEIR implies that the carcinogenicity of C-silica is indeterminate or in dispute. The discussion is dismissive in tone, and suggests a bias that health risks posed by C-silica are unproven or merely theoretical. Dr. Damian explains in his letter in General Comment 7 that this question has been settled by the leading international agency for classifying the carcinogenicity of compounds. Dr. Damian goes on to state that the type of C-silica found in neighborhoods surrounding the Quarry is of this dangerous crystalline quartz type. The EIR should plainly state the IARC conclusions with respect to the carcinogenicity of C-silica, and should expressly address the concerns of other individuals (such as medical doctors) who we understand have submitted comments in this process on the dangers of C-silica.

4.2 - 19 Crystalline vs. Amorphous Silica. Although the DEIR recognizes the toxicity of silica in its crystalline form, it equates the two crystalline and amorphous forms at page 4.2-19. Amorphous silica is not the principal concern of residents, and should not confuse the discussion of the C-silica risk. The final DEIR should be made clear that independent testing has confirmed that the community surrounding the Quarry is blanketed in dust that is comprised of over 25% crystalline silica. If the County needs to perform its own testing to corroborate the prior independent tests, it should do so. This is a critical point for which there can be no confusion. It is demonstrable that (i) for a substantial distance from the Quarry, well into the neighborhoods and up and down Pt. San Pedro Road, fine dust abounds, (ii) the source of that dust is the Quarry, (iii) about 25% of that dust is dangerous crystalline silica and (iv) its...
## Point San Pedro Road Coalition DEIR Comments

<table>
<thead>
<tr>
<th>Comment</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.2 - 46</td>
<td>DPM emissions have been based on the number of daily truck trip hauls to be 250 per day. Why is this number of truck trips assumed? The DEIR does not make specific how this 250 truck trip limit has been determined. See our comments related to the production and truck baseline determinations.</td>
</tr>
<tr>
<td>4.2 - 55</td>
<td>DEIR states that the &quot;highest risk from the projects would be less than the significance threshold of greater than one, the impact is less than significant.&quot; The DEIR must consider mitigations since there are cancer risks of the project.</td>
</tr>
<tr>
<td>4.2 - 57</td>
<td>DEIR should conduct a study on the H2S emission rates rather than depend on odor complaints.</td>
</tr>
</tbody>
</table>

### Attachment C

**Community Has Very High Exposure to C-Silica.** Dr. Damian states in General Comment 5 of his letter that many nearby residents of the Quarry are effectively experiencing occupational exposure to C-silica at an REL of 196 μg/m³ (versus the ambient benchmark of 3 μg/m³ and the occupational benchmark of 25 μg/m³) for periods longer than 30 days. Short-term exposure concentrations are even higher. The DEIR should state clearly the health risks posed by C-silica to prevent unnecessary confusion and ambiguity on the part of the reader.

### Appendix D

**Improper Averaging of Annual Emission Rates.** As Dr. Damian explains in Emission Rates comment 7 of his April 10 letter, the Health Risk Assessment improperly averages annual exposure to air toxic contaminants. Although the calculations were not provided in the DEIR’s appendix, Dr. Damian requested and received the backup data for the exposure calculations. He discovered, to his surprise, that annual average exposure levels over an individual’s presumed 70-year life assumed that the Quarry would shut down after 17 years and emit zero toxic air contaminants upon shutdown. In other words, the HRA averaged 17 years of substantial exposure to toxic air contaminants with 53 years of zero exposure. This averaging of zero-year exposure is improper, and understates an individual’s exposure by more than 4-fold. There is no more likelihood that the Quarry will in fact shut down after 17 years than there was when the previous 1982 Amended Reclamation Plan ran its course in the 1990s. The DEIR itself recognizes this fact in other contexts. The health risk in, for example, 2010, should be determined by the specific risk in 2010, not as just a component of an averaged down calculation over 70 years, most of which are presumed (inaccurately) to have zero risk.

**C-Silica REL Not Stated.** The chronic reference exposure level...
**Point San Pedro Road Coalition DEIR Comments**

<table>
<thead>
<tr>
<th>Attachment B</th>
<th>(&quot;REL&quot;) established by the California Office of Environmental Health Hazard Assessment (&quot;OEHHA&quot;) for c-silica (3 µg/m³) and DPM (5 µg/m³) is not stated anywhere in the ARP DEIR. This prevents readers from drawing their own conclusions about the critical health risk benchmarks to modeled air contaminant concentrations. Further detail on this point is provided in General Comment 2 of Dr. Damian's attached April 10th letter.</th>
</tr>
</thead>
</table>

**Noise and Vibration**

| General | SRRQ emits disturbing noise that denies the quiet enjoyment of their homes to residents of San Rafael living near the quarry. Except for the odd days on which all operations on quarry property are shut down, noise emanates from the quarry property virtually 24 hours a day. The loud, disturbing noises include noise from the grinding and crushing of rock, noise from heavy boulders falling into the bottom of metal barges, back-up beepers on moving equipment and nerve grating noise from all sorts of heavy machinery...cranking and ratcheting throughout the day and night. There is also the noise of materials being transported from one area of the quarry property to another, rock tailings being dumped and the constant drone of huge industrial ovens which operate throughout the night at the brick yard located on the quarry property. The numerous and consistent complaints of neighbors to the county and to law enforcement agencies about late night and early morning noise from the quarry property are documented in records filed by the County of Marin with the Marin Superior Court in Case No. CV 014584, Pt. San Pedro Road Coalition, et al v. San Rafael Rock Quarry. |
| 4.7 - 5 and 4.7 - 18 | DEIR vibration only measures impacts from blasts. However, registered complaints with the County indicate that the rumbling of the trucks passing by homes on Pt. San Pedro Road, create vibrations and shaking inside homes. DEIR should study the impact of truck vibration on the residents inside their homes. |
| 4.7 - 10 | The DEIR did not measure the vibration at the structures. It was only measured on the ground. The many complaints of the residents and years of requests to measure the impacts of the blasting vibrations at the home structures should mandate including structure studies in the DEIR. |
| 4.7 - 10 | The 1982 noise and vibration levels were based upon only "two 15-minute noise measurements" in the vicinity of San Marino. It seems invalid to determine a baseline on only two 15-minute measures. Also, why does the DEIR use 15-minute intervals for 1982 noise and vibrations, but use a 24-hour average when measuring current |

Attachment 2
Point San Pedro Road Coalition DEIR Comments

<table>
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<tr>
<th>Section</th>
<th>Comment</th>
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<tr>
<td>4.7 - 10</td>
<td>Truck noise is a major complaint of the residents. The DEIR is incomplete in its truck noise measurement in that it did not consider the mitigation available by reducing truck speed. The report of Salter and Associates stated that, in a short term noise measurement taken at a Chapel Cove site, 21 trucks passed the site in a 15 minute measurement with trucks generating a noise level of 75 to 78 dba. The community measured trucks at 3 Peacock Lane with a handheld noise meter and found that trucks traveling 25 miles per hour registered 60 dba.</td>
</tr>
<tr>
<td>4.7 - 10 and 11</td>
<td>The DEIR has not studied spacing when trucks get to the 2nd and Irwin intersection. Casual observation reveals that the 500-foot interval of the trucking plans have not been maintained. Often one finds the intersection jammed with 2 or 3 trucks, nose to tail, waiting to go through the signal. There is no analysis of this impact in the DEIR. Spacing of the trucks should be studied to determine the implications of noise and traffic.</td>
</tr>
<tr>
<td>4.7 - 10 &amp; 11</td>
<td>The noise impact discussion applied only the Marin County ordinance. However, many homes impacted by the Quarry operations are in the City of San Rafael. Also, the 24-hour averaging of ldn measures do not reflect the many complaints of the residents. The DEIR should also apply the San Rafael noise ordinance to both the ARP and AQP.</td>
</tr>
<tr>
<td>4.7 - 11</td>
<td>No measures of the McNears Brickyard's noise and vibrations have been included in this study. Residents near the Brickyard complain of the constant 24-hour kiln humming noise. In fact, residents often mistake that loud humming as quarry noise. The DEIR should study the noise and vibration of the McNears Brickyard and the impacts on the lives of nearby residents.</td>
</tr>
<tr>
<td>4.7 - 11, 14, 17 and 26</td>
<td>Noise receptors were placed at only 3 locations to measure activity from excavation, loading of trucks, loading of barges and blasting events. The study claims no sounds of crushing as close as Marin Bay Park Court and Lagoon Road. However, locations farther from the monitoring sites were not measured. For example, noise from crushing can be heard at Peacock Drive and Peacock Lane, though there is no mention of crushing noise being heard. How could it be that crushing is not heard closer to the plant?</td>
</tr>
</tbody>
</table>
Point San Pedro Road Coalition DEIR Comments

- Additional noise studies should be conducted to include surveying of residents in the adjacent neighborhoods.
- Using an Ldn measure is not effective since it is on a 24 hour average. DEIR should measure more often than using an average that includes nighttime hours.

<table>
<thead>
<tr>
<th>4.7 - 15</th>
<th>Noise receptors were placed at 3 locations but not at the homes closest to the road on both the north and south sides of Pt. San Pedro Road. For example, 3 Peacock Lane on the north side is approximately 45 feet from the road, and homes on the south side of the road are even closer to the road. The DEIR should measure locations closest to the road.</th>
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<tr>
<th>4.7 - 27</th>
<th>The DEIR credits SRRQ for padding bang boards, but it does not measure the impact of these recently installed pads. The DEIR should conduct a noise comparison between the bang boards with and without the pads to reduce the noise to a tolerable level.</th>
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<tr>
<th>4.7 - 28</th>
<th>The DEIR has not measured the impact of truck traffic noise for houses closer to the road than 60 feet. There are several houses west of those measured in the DEIR that are closer than 60 feet. Residents who live closer to the road than those measured have complained for years regarding noise and vibration of the trucks. The DEIR should identify homes closest to the Pt. San Pedro Road and measure truck noise and vibration. Also, truck caravans traveling both east and west on Pt. San Pedro Road generate excessive noise and dust. The DEIR should study the impact of caravanning trucks.</th>
</tr>
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</table>

| 4.9 - 3 | The DEIR does not report or analyze the water usage in the quarrying, mining and processing activities of the rock, nor does it report the volume of water to be utilized in the manufacturing of asphalt. |

Public Services, Utilities and Energy

- The DEIR should conduct a survey study of residents to determine a noise baseline.
- Given the additional homes currently near the SRRQ, there must be a comparison of the additional vehicles that are now on the road compared to 1982.
Point San Pedro Road Coalition DEIR Comments

In the Sonoma County Permit and Resource Management Department report, it takes 3,250,000 gallons of water to process 650,675 tons of asphalt. There is no information on how much water will be utilized for the other product processes. This is an important consideration given the shrinking availability of water in Marin County.

- The DEIR must analyze the cumulative impacts of this huge consumption of our water in consultation with the various public agencies.
- Does Marin Municipal Water District (MMWD) have sufficient capacity to allow this annual consumption?

Transportation and Traffic

4.10 Section 4.10 on Transportation and Traffic analyzes the potential for the ARP to affect transportation adversely. It never describes the 1982 baseline level of production, nor how that production would impact estimates of truck and barge traffic. The DEIR does not describe the County’s estimates of production’s impact on truck traffic as did the Initial Study.

The DEIR does not address the transportation and traffic concerns outlined in the Coalition’s October 3, 2007 Scoping Comments letter for the EIR on SRRQ Amended Quarrying Permit (included here as Attachment 3). The final EIR must contain accurate and thorough historical information, rather than unfounded assumptions about baseline production and baseline truck traffic.

**Impact of Trucks Traffic and Barge Shipments**

The DEIR lacks any description of the estimates of production of the project based upon the 1982 baseline. It assumes current practice and future expansion, but does not address the baseline production. These baseline determinations directly impact how many trucks and barges will be used. The DEIR is also silent on the 1982 baseline related to barge shipments. Why were these included in the Initial Study, but not mentioned in the DEIR?

The IS states (at page 17, bullet 12) that there are no known records of the number of truck trips associated with SRRQ operations in 1982, and that Tom Lai from the Marin County Planning Department estimated the number of truck trips in 1981 and 1982 by assuming that half of the Quarry’s annual production was shipped by truck and the other half by barge, that the Quarry operated 240 days per year, and that the average truck load was 20 tons. The IS table on page 17 lists production level by tons.
Point San Pedro Road Coalition DEIR Comments

and assumes half was shipped by truck.

These computations are inconsistent with other reliable documents. A key source of baseline information is the testimony of Norman T. Gilroy, of Gilroy and Associates, at the 2004 trial of Marin County Case No. CV014584 regarding his May 12, 1982, letter to Mehdi Madjd-Sadjadi, Assistant Land Development Engineer of Marin County Department of Public Works. On page 4, paragraph 6, Mr. Gilroy wrote:

"The vast majority of the material quarried at the property is shipped out by deep water barge, thereby minimizing the kind of truck traffic which might normally be associated with an operation of this size."

Gilroy testified that a reasonable interpretation of "vast majority" is that at least 75% of material quarried at the property in 1982 was shipped out by barge, meaning that at most 25%, or 368,250 tons, were shipped out by truck in 1982.

Gilroy also testified that Basalt was sensitive to the neighbors' concerns with the truck traffic and accepted many barge-able projects to take traffic off the road. There is no valid basis for making any upward adjustment from the 1982 baseline figure of 368,250 tons. Despite Gilroy's assurance that no increase in truck traffic was expected, 456,775 tons of materials were shipped out by truck in 1989, the first year for which SRRQ provided data.

In 2000, 748,220 tons were shipped out and in 2001, 713,382 tons were shipped out by truck. These are the two years for which SRRQ provided data.

- The 2000 tonnage trucked out is a 103% increase over the amount trucked out in 1982, a very substantial intensification of truck use.

- SRRQ has significantly exceeded the 368,250 ton baseline figure for every year for which records are available between 1989 and 2001.

4.10 Level of Production

The DEIR lacks any discussion of the baseline production. However, the Initial Study used a portion of the October 1984 Merrill Lynch Capital Markets report for the purpose of marketing the Quarry to potential buyers. The IS notes the tonnage from 1979, but disregards it when determining the estimated tonnage, even though it was included in Table PD-2 of the IS. The following table presents tonnages for 1979 through 1982 (in thousands).
Point San Pedro Road Coalition DEIR Comments

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<tr>
<td></td>
<td>692</td>
<td>1,467</td>
<td>1,304</td>
<td>1,473</td>
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</table>

The IS estimated the average production for the Quarry based upon the annual average during 1980-1982 of 1,414,667 tons. If the IS had included the much lower 1979 production, the average would have been reduced to 1,234,000 tons. The 1979 production statistic is historic data that should have been included in the calculation. By excluding the 1979 figures, the SRRQ would be permitted an additional 200,000 tons in the baseline. There is no reason to exclude the 1979 production information in any computations. The other alternative is to ignore all of the years other than 1982, and to use an average of recent years. The County’s staff (Tom Lai as per the Initial Study) determined the number of truck trips were determined by 1999 SRRQ’s traffic engineers using data beyond 1982. Their estimates are not accurate.

4.10 The Pt. San Pedro Road Coalition has reviewed the entire Merrill Lynch report and based on the production noted, an analysis is provided in Exhibit D.

This analysis indicates that the average of 1979-1982 production would total 60 trucks at 25 tons. If only 1982 was considered the baseline, 58 truck trips per day would be the maximum, not 125 truck trips.

Even when using the more liberal estimate of 50% of materials being shipped by barge rather than Gilroy’s 75%, the 1982 tonnage shipped by truck would be 352,500 tons of material for the year. The Court-approved 125 trucks per day x 25 = 3,125 tons daily. These 125 truck shipments increase the amount of materials shipped by 1,656 tons OVER the 1982 base line (3,125-1,469 = 1,656). Using 125 truck trips is a 112% increase over the baseline (1,656/1,469).

- The DEIR should include the complete record as noted above to determine the baseline production of 1982 including the complete Merrill Lynch report and the testimony of Gilroy Associates.
- The DEIR should provide a more accurate estimate of both the number of days that the Quarry operated during 1979 through 1982 and its current hours and days of operations.

The DEIR translates tonnages into truck trips using an average truck size as its denominator. Over the years, the gravel trucks
Point San Pedro Road Coalition DEIR Comments

coming to and from the Quarry have increased materially in size from 20 tons to 25 tons. Since a high percentage of the materials shipped out of the Quarry go to SRRQ plants in Richmond and Petaluma, the EIR should study the impact on the community if these loads were shipped by barge instead of trucks.

4.10 The DEIR does not refer to the original 1982 permit determining that any increases in production would be shipped by barge. The original San Rafael permit determined in the 1982 Negative Declaration Basalt Reclamation Plan, page 2, item F(9)(3) states as follows:

- "3. Any increases in extracted materials shall be transported by barge."

- i (1) & I (2) Truck traffic could increase as a result of increased rock extraction.

- Mitigation: 1. See F(9)3. "Any increases in extracted materials shall be transported by barge."

4.10 - 3 The DEIR fails to include the trucks that do not get measured at the scale house. For example, oil and sand must be delivered for the asphalt plant on site, but these trucks were not included in the DEIR assessment.

4.10 - 3 As part of the January 2008 Dutra Haystack Landing Asphalt & Recycling Facility in Petaluma Draft Environmental Impact Report, a New Project Trip Generation Table (EXHIBIT C) was provided for review. A review of this table shows substantial truck traffic for the importation of materials, including crumb rubber and asphalt oil for their paving products. This new project trip generation report details all material entering the Petaluma site, and exiting the site. By mode and capacity of transportation, and defines the number of barge trips and truck trips.

- The DEIR fails to include this data for analysis and review. Such analysis is vital to determine the operational scale of SRRQ's current and future activities that must be compared to the 1982 baseline activities. There is no information in this report as to the destinations of the truck trips being generated by the SRRQ, currently or in the future. A project trip generation table must be submitted to ensure that all materials imported and exported from the complete site, including McNears Brickyard are considered in this review.
Point San Pedro Road Coalition DEIR Comments

- The DEIR fails to analyze or consider any of the impacts of the SRRQ truck traffic. Truck deliveries from the SRRQ will greatly increase until the new docking and unloading facility at Petaluma Haystack Landing is complete.

4.10 - 3 Barge loading and truck trips are noted in the project description. It also describes the project's plan for spacing trucks at 2-minute intervals. This project proposal is exactly what is currently occurring, however the DEIR does not study this impact.

The DEIR does not provide an analysis of the current situation of truck spacing that is proposed to be maintained. Evidence from SRRQ weighmaster sheets from June 12, 2006 indicated that 51.2% of the truck volume for that day was in the first 3 hours of the day.

4.10 - 9 & 10 The DEIR completely ignores the operations of McNears Brickyard on the SRRQ property. The DEIR states that McNears Brickyard ceased using materials from the SRRQ site and has been importing materials to their site for many years. There is no report of the number of trucks that go to and from McNear's Brickyard. This study ignores the impact of truck trips importing and exporting materials to and from McNears Brickyard.

4.10 - 9 & 10 The DEIR does not describe nor analyze the amount of non-aggregate/asphalt transport vehicles to and from the SRRQ.

4.10 The EIR has relied upon SRRQ's representations of full adherence to the SRRQ "Truckers' Management Plan." There has been no independent verification of adherence to any aspect of that plan. Though SRRQ has represented that all trucks leaving the Quarry will be tarped, and trucks will depart at intervals to avoid caravanning on Pt. San Pedro Road, the experience of those who drive on Pt. San Pedro Road is inconsistent with those representations. The DEIR should consider the environmental impacts of the "Truckers' Management Plan."

Cultural Resources

4.12 - 9 Use of McNears Brickyard as future possible mining location is ignored.

The DEIR states that McNears Brickyard continues to operate their brick company under a long term lease arrangement with Dutra. No information is provided related to the term and/length of McNears lease. This information is vital since SRRQ could decide to eliminate the McNears lease and use that land for alternative mining in the future. This possibility has not been considered or studied in the DEIR.

Alternatives to the Proposed AQP

18

Attachment 2
Comment Letter 30

Point San Pedro Road Coalition DEIR Comments

6 - 25
The DEIR attempts to keep in place an interim trucking limit of 125 trucks in and 125 trucks out per day.

This interim limit was agreed upon by the County of Marin and the SRRQ during the Court proceeding as an interim plan. The Pt. San Pedro Road Coalition has voiced its concerns that this interim plan provided for far too many truck trips creating dust, diesel, noise and hazards in the residentially zoned neighborhoods adjacent to the SRRQ. The County of Marin repeatedly reported to the community that this agreement was interim and NOT permanent. SRRQ is attempting to make the interim operating plan permanent with no public discussion, and the DEIR is acquiescing. This is improper.

6 - 25
The DEIR has not accurately included the community’s suggestions and complaints.

The DEIR should review the court case records and the ongoing complaints submitted to the County regarding complaints by neighbors regarding trucking operations.

What constitutes the best available technology is an engineering concept that should have been included in the DEIR. Yet there is no engineering analysis in the operational review of the quarry or their plans. The DEIR should include an analysis of questions such as whether a the quarry should be required to use a closed-circuit water recycling system to ensure that no process water will be discharged into the environment. Particularly since the plan contemplates a tremendous increase in water use to keep down the dust, this issue should be addressed. Additionally, if there is a recycling system, should it include a filtering process that eliminates the use of settling ponds? The plan should require systems that would minimize dirt movement (and therefore distribution of dust) and would be beneficial to the soil during reclamation.

6 - 25
Summary of Transportation and Circulation suggests:

a) The Court approved interim 125 trucks per day is a 112% increase over the baseline (1,656,000/1,469,000). Reduce the truck trips to a reasonable baseline measure.

b) Baseline for transportation (Gilroy testimony that the vast majority should be shipped by barge to be defined as at least 75% by barge). If the DEIR used 50%, then the following estimates of the baseline would mean:

1. Using 1982 production of 352,500 tons as the baseline would limit trucks to 73 for 20 tons or 59 trucks at 25 tons.
Point San Pedro Road Coalition DEIR Comments

2. Using an average production of 1979, 1980, 1981 and 1982 totaling 361,750 tons as the baseline would limit trucks to 75 truck trips per day at 20 tons or 60 trucks at 25 tons.

c) All trucks must be tarped.
d) Materials may be only transported out of the Quarry by truck for delivery to Marin County projects and only on the day of delivery. All other material to be shipped by barge.
e) Replace the existing street washer with state-of-the-art vacuum equipment to reduce the dust plumes created by the existing street sweeper.
f) Trucks of 10 or more tons driving on Pt. San Pedro Road travel no more than 25 mph (to be enforced by contract, if not by statute or ordinance.
g) A truck management plan should also include mitigations for trucks caravanning into the SRRQ and not only those leaving the quarry.
h) Trucks leaving the Quarry shall leave at no less than 5 minute intervals during operating hours.

f) Quarry must substantially increase its commitment to supply resources and materials annually for the ongoing repair and maintenance of Pt. San Pedro Road in both the City and County. This should include a financial commitment to fund rubberizing the road to mitigate noise impacts.

g) Gates and access for trucks, contractors and other non-employee traffic may open no earlier than 7 a.m.

6 - 25 The DEIR should consider alternative sources other than for the SRRQ material to reduce the impacts noted in the DEIR.

The DEIR report completely ignores and dismisses information provided at the scoping meetings relative to important alternatives to the continued operations of this quarry.

The use of fear concerning failure of levee system, the misuse of “emergencies” and disinformation as to immediate and reliable resources of vendors of materials, and marine engineering contractor is continued in this report. Information had been provided in the IS, but dismissed in this report.

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Point San Pedro Road Coalition DEIR Comments

On April 26, 2006, the Department of Water Resources issued a Material Sourcing Information Spreadsheet providing 17 sources of materials available to be used in levee emergency repair project. (EXHIBIT E)

CANADIAN SOURCES OF MATERIALS

The DEIR claims importing materials from Canada may have adverse consequences. Comments about Canadian source materials need to be reviewed in light of the following:

- Polaris Minerals and their First Nation partners are currently serving the San Francisco Bay Area. 80,000 tons of aggregate arrive in San Francisco Bay every 9 days. Polaris Minerals is the winner of the Prospectors and Developers Association of Canada award for "excellent community relations and environmental practices..."

- Shamrock Materials of Petaluma has a 20 year agreement with Polaris at its site next to Dutra Haystack Landing. Their product is superior to the crushed rock and is used in the construction the new San Francisco Bay Bridge, and Hwy 580 and 101 interchange currently being completed.

Alternatives to the Proposed ARP

6.1 & 6.2 In ARP82, the final elevation of the Main Quarry Bowl was anticipated to be -200' msl. ARP82 included a plan to excavate a channel to the Bay and flood the Main Quarry Bowl to create a harbor, as does ARP04. However, ARP04 proposes to double the depth of the final elevation of the Main Quarry Bowl.

- The DEIR must include greater detail on a mitigation plan for the negative consequences of continued excavation of the Main Quarry Bowl.

- It should be noted that only under intense community scrutiny and regulatory environmental review have quarry trucking operations been reduced to mitigate the impact of diesel particulates from trucking operations on local air quality.

- Community residents such as children in local schools, retirees, or those working from home offices are exposed to local air quality every day, all day, over years and decades of quarry operations. In addition to diesel truck emissions are the air quality effects of continued blasting much deeper into the rock...
Point San Pedro Road Coalition DEIR Comments

- substrate.

The severely adverse health effects of potential continued exposure to crystalline silica warrant much more detailed environmental sampling in time and space than the limited data presented in the DEIR.

- Further detail regarding the geologic composition of the rock that will be exposed to continued lateral and vertical excavation should be provided, to ensure that quartz and metal quantities do not exceed the few samples analyzed in the DEIR.

- An additional rationale for further data on rock composition is an improved understanding of the seismic consequences of expanding the width and depth of the Main Quarry Bowl. Weakness in the geologic substrate created by excavation and blasting could exacerbate the negative consequences of a regional earthquake on the future inhabitants of SRRQ land.

- With face slopes of 75 degrees and depth of -350 msl, the DEIR should explicitly discuss how seismic safety standards for adjacent buildings are to be achieved.

- Reclamation options for the Main Quarry Bowl require additional consideration. The mitigated plan and the mitigated plan with beneficial end uses both consider only 2 scenarios: flooding the -400’ msl bowl with freshwater or bay water, or filling the bowl to 30’ with an assumption of imported sediment fill prior to flooding with fresh or bay water. The SPRC does not support filling a -400’ bowl with bay water. We disagree that “Best Management Practices” implemented in a 600 slip marina will maintain good water quality in a deeply stratified, anoxic, and poorly mixed basin.

There is inadequate detail provided on water quality issues associated with reclaiming the -400’ msl bowl with freshwater, which will be entirely stagnant and unmixed. The DEIR should provide additional detail regarding the freshwater hydrologic dynamics and water quality for wildlife of this option. Since the proposed ARP would create significant unmitigatable impacts, several alternatives should be considered.

**Alternative Reclamation with Alternative Beneficial End Use**

The Alternative Reclamation with Alternative Beneficial End Use is

Attachment 2
Point San Pedro Road Coalition DEIR Comments

superior to the Mitigated Alternative as it is consistent with the Countywide Plan's update for sustainability and reduced ecological footprint and is consistent with Judge Sutro's order regarding the use of the NE Quadrant. Furthermore, it would avoid the breach of the pit to create a marina, which as it stands now, is a plan fraught with negative environmental impacts that cannot be mitigated.

6.1 & 6.2

The DEIR offers some alternatives for reclaiming the land into uses for the public good. Many reclaimed quarries are dedicated to use by the local communities.

The Final EIR should include more alternatives such as may be found by looking at examples of other reclaimed quarries for the public use. The possibilities for the reclaimed quarry should involve and offer amenities for the community in which it is located. Use what is reclaimed to provide what is missing from East San Rafael and the Point San Pedro Peninsula. For example: Community Center, Post Office, Library, or an ecological reserve. Some examples of other reclaimed quarry uses are noted below:

1. **Homestake McLaughlin Mine.** The reclaimed McLaughlin gold mine in Napa is a reclamation project demonstrating that a large number of diverse governmental agencies can work together. It is an outstanding innovative plan for reclamation and later conversion to protected public use. In 2000, it became part of UC Davis’s reserve system, a network of protected California lands that serve as outdoor classrooms and laboratories.

2. **Butchart Gardens, Victoria, British Columbia.**

   The Butchart Gardens, considered to be one of the ten best public gardens in the world, is a dazzling example of a successful quarry reclamation project.

3. **Reclamation of Hard Rock Quarries in Britain.**

   Some of the more advanced examples of quarry reclamation are in Great Britain. Some examples:

   Ribblesdale Quarry, North Yorkshire—Natural conservation and planned water use including lake, walks, and geological conservation.

   Trowbarrow Quarry, Lancashire- The site includes areas for climbing with involvement from the British Mountaineering Council. Nature trails.

   Lee Quarry, Derbyshire- Geo and Eco conservation.
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<th>6 - 24</th>
<th>Mitigated Alternative Option</th>
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<tr>
<td></td>
<td>Archaeological and nature trails. Ongoing vegetation establishment trials.</td>
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<tr>
<td></td>
<td>4. A gravel extraction area at Mississippi Bar in Sacramento County was returned to a riparian (water) wildlife habitat.</td>
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The Coalition believes that the NE Quadrant may not be used as a staging area for processing of materials for any purpose pursuant to the court order of Judge Sutro. Leaving the NE Quadrant in a natural condition is consistent with that court order. It must be re-vegetated and stockpiled materials should be immediately removed.

- The DEIR should study the feasibility and impacts of moving these materials and possibly using them to fill in the quarry pit.

- The Pt. San Pedro Road Coalition cannot support the mitigated alternative’s suggestion that quarrying in the main pit be allowed until “final depth and extent are reached” since the quarry pit must be filled up to the level of 30’ msl. No further mining in the pit should be permitted due to the significant adverse impact resulting from the importation of fill and without a thorough study of the noise and dust impacts to the community.

- Common sense would suggest that no further quarrying in the main pit should be allowed at all due to the negative impacts caused by filling the pit even from its current depth.

- To date, there has been an inadequate investigation of what can be done with the quarry bowl.

- We agree that Phase 1 must include restoration of the marshes.

- If this mitigated plan is implemented, it should include provisions that would generate a net benefit to the environment. Such benefits could include:
  - Requiring the NE quadrant to be maintained in the restored state in perpetuity.
  - Dedicating some of the land to a “beneficial end use” such as for the arts, education, and the environment.

- Requirements may be put in place to provide locally needed facilities such as a library, post office, and community center. A
| Traffic study should include evaluation of such basic amenities located within the community to reduce traffic into San Rafael. |

30-104

cont.
October 18, 2007

Joe Caramucci
8 Surfwood Circle
San Rafael, CA 94901

Re: Requested information regarding San Rafael Rock Quarry Traffic Studies

Dear Mr. Caramucci,

In response to your request, which you discussed with Tim Haddad, I am providing the attached materials regarding the Merrill Lynch report referred to in the Initial Study. The attached materials are a matter of public record and were included within the Community Development Agency staff report to the Board of Supervisor's on the project. The data in the enclosed document represents only a portion of the full report, which was provided to the Community Development Agency, and we believe is subject to proprietary confidentiality claimed by San Rafael Rock Quarry. Though the complete report is not a part of the files maintained by the Community Development Agency, the entire report may have been submitted to the Courts by the parties' Counsel during the legal proceedings. The attached document constitutes the entirety of the information afforded to the Community Development Agency in the aforementioned environmental review. Please do not hesitate to contact Tim Haddad at (415) 699-6274 if you have questions.

Sincerely,

Tamara Taylor,
Environmental Planning Aide

cc: Tom Lyons, County Counsel
    Ron Lai, Deputy Director COA
    Tim Haddad, Environmental Coordinator
    Rachel Warner, Environmental Planner
September 9, 1998

Mr. Gilbert Labrie
DCC Engineering Co., Inc.
P.O. Box 929
Walnut Grove, CA 95690

Addendum to the San Rafael Rock Quarry Office Expansion Traffic Study

Dear Mr. Labrie;

As requested, Whillock & Weinberger Transportation, Inc. (W-Traffic) has completed additional traffic analysis for the proposed San Rafael Rock Quarry Office Expansion Traffic Impact Study in the County of Marin in response to issues raised in the letter to Mr. Kim Smith from Mr. Tom Lai of the County.

 Quarry Truck Trips

Information was obtained from quarry staff regarding the historical characteristics of quarry use, including the number of tons shipped per day, the hours of operation, and how the typical on-site is operated over the day. The San Rafael Rock Quarry operates approximately 240 days of the year, 7:00 AM - 9:00 PM Monday through Friday, excluding weekends and holidays. Shipments are made by barge and truck. It should be noted that with a closing time of 4:00 PM, the quarry does not generate truck trips during the PM peak hour, which is typically the critical time period for congestion in the City of San Rafael.

Three types of truck are typically used for shipping rock from the quarry, including 24'20, 28'20, and 28'30 ton units. Based on the frequency with which each size is used, the average shipment truck load is approximately 19.35 tons. In order to determine the average number of truck trips per day generated by the quarry, the total tonnage shipped via truck was divided by 240 working days/year and 20 tons/truck, then multiplied by 2. trips/truck (one in and one out). Over the last nine years the average number of truck trips per day has varied between 20.8 to 23.9 with an average of 22.8 truck trips per day. (296/13.4 = 22.8/trip)

Quarry staff has indicated that approximately 18 percent of their truck traffic generation occurs during the AM peak hour of 7:00-8:00 AM, while only 4 percent occur during the last hour of operation, 1:00-4:00 PM. Using these percentages, the average number of truck trips during the AM and PM peak hours were determined. Between 40 and 64 trips have occurred on the average during the AM peak hour over the nine year period reviewed. Much lower volumes typically occur during the last hour of operation in the afternoon.

The table below represents the yearly tonnage based on sales for both barge and highway shipments. These production figures have been converted to numbers of truck trips daily and during the AM peak hour and the last hour of operation in the afternoon, which is actually not during the PM peak period of 4:00-6:00 PM.

It is of interest to note that during years which include flood events the production peaks, in effect increasing the "average" quarry shipment.

Whillock & Weinberger Transportation Inc.
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Summary Tonnage and Revenue Data - Summary tonnage and revenue data are shown below in Table 2. Between 1980 and 1982, the volume of aggregate shipments increased significantly as poor weather conditions destroyed or damaged several levees in the Delta region served by Mchmar Quarry. During this period, tonnage of aggregate shipped increased from 557,000 tons in 1979 to 1,689,000 tons in 1983. In contrast to increased aggregate shipments, asphaltic concrete shipments declined throughout this period as the number of federal, state and local resurfacing projects were curtailed. However, offsetting this decline in volume was a significant increase in prices. A number of non-recurring events also influenced asphaltic concrete tonnage and revenue. In March 1981, the company's asphaltic concrete plant was destroyed by an explosion. The plant was subsequently rebuilt and reopened in March 1982, although during this period, the company continued to make shipments under long-term supply contracts by purchasing asphaltic concrete from other sources and reselling it to customers.

Since the latter half of 1982, as the economy has recovered and interest rates have abated, construction activity has also increased. Reflected in improved demand for aggregates, the company's product mix in 1982 and 1983 included a greater proportion of rip rap and larger crushed rocks which contributed to an increase in revenue from $6.7 million in 1981 to $9.3 million in 1982. Demand for large rock remained strong in 1983, although average selling prices were lower as a large quantity of overburden was removed and sold in order to extract additional reserves for SWOP. Asphaltic concrete volume and revenue also recovered in 1983 following a four year slide as the number of highway resurfacing projects increased.

Projected tonnage and revenue data are shown in Table 3. As a result of the frequency of levee breaks and related damage to agriculture and water supplies in past years, several state and federal agencies have developed a plan to rebuild damaged levees and to undertake a program to maintain the condition of others. The plan calls for approximately $400-$500 million to be invested in this region over an extended period of time. Mchmar serves this region by large primarily through its distribution to levee work, shipment from Mchmar Quarry in the 1986-1987 period are projected to be supplemented by rock production for SWOP. The SWOP project will require approximately 1.2 million tons in 1985 and 1986 and will generate $12 million in revenues. Management also expects that asphaltic concrete shipments will increase as a result of new federal and state highway legislation stimulating improved maintenance.

<table>
<thead>
<tr>
<th>Year</th>
<th>Tonnage</th>
<th>Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>1,200</td>
<td>$600</td>
</tr>
<tr>
<td>1981</td>
<td>1,500</td>
<td>$750</td>
</tr>
<tr>
<td>1982</td>
<td>1,800</td>
<td>$900</td>
</tr>
</tbody>
</table>

Table 2

Project historical Tonnage and Revenue - Mcnmar Quarry (000)

<table>
<thead>
<tr>
<th>Year</th>
<th>Tonnage</th>
<th>Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>1,200</td>
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</tr>
<tr>
<td>1981</td>
<td>1,500</td>
<td>$750</td>
</tr>
<tr>
<td>1982</td>
<td>1,800</td>
<td>$900</td>
</tr>
</tbody>
</table>

Table 3

<table>
<thead>
<tr>
<th>Year</th>
<th>Tonnage</th>
<th>Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>1,200</td>
<td>$600</td>
</tr>
<tr>
<td>1981</td>
<td>1,500</td>
<td>$750</td>
</tr>
<tr>
<td>1982</td>
<td>1,800</td>
<td>$900</td>
</tr>
</tbody>
</table>
May 29, 2002

Lee Mackrack  
20 Marin Bay Park Court  
San Rafael, CA 94901  

RE: People of the State of California v. San Rafael Rock Quarry, Inc.  
Marin County Superior Case No. CV 014610  

Dear Mr. Mackrack:  

Enclosed please find a copy of what appears to be the Basalt Rock prospectus you were referring to in our telephone conversation earlier today.

Sincerely,  

RAISYa S. LERNER  
Deputy Attorney General  

For BILL LOCKYER  
Attorney General  

RSL:tm  
Enclosure
Confidential

BASALT ROCK
A DIVISION OF DILLINGHAM HEAVY CONSTRUCTION, INC.

October 1984
MERRILL LYNCH CAPITAL MARKETS

The information contained herein has been obtained from sources believed to be reliable but Merrill Lynch, Pierce, Fenner and Smith Incorporated does not warrant its accuracy or completeness. Dillingham Corporation has agreed to indemnify Merrill Lynch, Pierce, Fenner and Smith Incorporated with respect to any untrue statement of a material fact contained in this Memorandum or related documents used in connection with this Memorandum or arising out of, or based upon the omission to state herein, a material fact required to be stated.
# Comment Letter 30

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## Introduction

Basalt Rock ("Basalt" or the "Company") is a division of a wholly owned subsidiary of Dillingham Corporation. The Company is one of the largest producers of construction aggregates in the Northern San Francisco Bay area with revenues in fiscal 1983 of $30 million.

Basalt was founded in 1924 and was closely held until it was acquired by Dillingham in 1960. In 1980, Dillingham Corporation was reorganized through a leveraged buyout. Dillingham Corporation has recently re-evaluated its strategic interests and determined that continued ownership of the Company's operations are no longer consistent with its interests. Dillingham Corporation intends to transfer the assets of the Company into a subsidiary corporation and to sell the stock of that subsidiary.

As discussed in greater detail in this memorandum, the following points characterize Basalt's operations:

- The Company is the leading producer of asphaltic concrete and aggregates in Marin, Napa and Sonoma counties. Basalt has capitalized upon its strategically located quarries and facilities to command a dominant position in the markets it serves. The remaining reserves available to the Company ensure Basalt's ability to maintain its leading position in the future.

- Reflecting its market leadership and competitive strengths, the Company has exhibited a strong record of profitability during the past five years. Recently, significant reductions in overhead have generated new economies which are expected to enhance projected earnings.

- During the next three years, the Company will benefit from SWIM, a major public works project, which will provide Basalt a significant increase in revenue and earnings while also permitting the Company to recoup its capital investments in new facilities.

- The future market potential for aggregates and asphaltic concrete should be enhanced by federal and state plans to invest as much as $500 million to rebuild and maintain levees in the Sacramento/San Joaquin Delta region and the expenditure of gas tax revenues to resurface major roads and highways in Basalt's market area.

- The Company is also well positioned to expand its market presence in neighboring Solano County, which is one of the fastest growing communities in California.

In addition to Basalt's aggregate business, one of the Company's major properties, McNear Quarry, located in exclusive Marin County, offers significant real estate development potential.
OVERVIEW OF THE COMPANY

The company mines and quarries various rock products used in the construction of roads, levees, dams and other projects. From the company's facilities located in Marin, Napa and Sonoma counties north of San Francisco, the company produces and markets rip rap, crushed rock, sand, gravel and asphaltic concrete. Management believes Basalt is the principal source of such products in these counties.

Within the Marin, Napa and Sonoma County markets that Basalt serves (see Map 1), the demand for aggregate products is driven principally by population growth and federal, state and local government projects. In general, population growth determines the level of private and public construction activity. Population growth also directly impacts the amount of gas tax monies appropriated for certain areas which are used to finance road construction and maintenance. In addition to population sensitive construction activity, a significant amount of the company's business is derived from federal projects to maintain and improve existing islands in the Sacramento/San Joaquin Delta. Finally, from time to time, poor weather conditions create a need for aggregate products to rebuild and repair levees, roadways, parking lots, air fields, industrial plants and buildings.

The market dynamics of the rock business are such that the company can define specific markets by evaluating its product line, its location with regard to customers and competition, and its accessibility to various forms of transportation. Transportation costs are an important component of the total cost of the delivered product. Consequently, proximity to customers and accessibility to road and water transportation are significant competitive advantages. In the Northern San Francisco Bay area, water transportation by barge is often the cheapest possible means of transporting aggregate materials.

The Marin County Facility is located near San Rafael at McNear's Point on the San Francisco Bay. Basalt first began operations at McNear Quarry in the early 1940's under a lease with the McNear family. At McNear, the company produces rip rap, engineers rock, and other finer grades which meet the highest state and federal specifications for construction uses. Rock can be drawn at McNear Quarry by both barge and truck. In addition to rock operations, McNear Quarry also offers attractive potential as a real estate development. A reclamation plan has been approved which would permit the eventual redevelopment of McNear Quarry into a commercial and residential real estate project.

At the Napa location, the Company produces high quality basalt rock which is primarily used as an aggregate source for two asphaltic concrete plants located at the site. The company also produces a base material from rhyolite at Napa. Quarrying began on these properties in 1924. Napa Quarry is adjacent to the Napa River and is easily accessible to barge transport or county roads and state highways.

The Sonoma facilities consist of two asphaltic concrete plants and a ready-mix concrete batch plant in Healdsburg and a stand-alone asphaltic concrete plant just south of Santa Rosa. Basalt began its aggregate business in Sonoma in 1931. From 1931 to 1967, were properties were acquired within the banks of the Russian River which increased gravel resources markedly. In 1967, Basalt acquired the 350 acre Grace Ranch from which the company is extracting reserves. The company is restoring the site as it extracts reserves by reclaiming processing waste and creating new vineyards. Basalt presently cultivates and manages 196 acres of vineyard.

Basalt's consolidated sales and operating income for the following five years ended December 31, 1983 are shown below:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>$26.3</td>
<td>$29.8</td>
<td>$25.1</td>
<td>$24.7</td>
<td>$30.4</td>
</tr>
<tr>
<td>Operating Income</td>
<td>1.7</td>
<td>3.7</td>
<td>0.0</td>
<td>1.6</td>
<td>2.8</td>
</tr>
</tbody>
</table>

At June 30, 1984, total assets of the company were $29.1 million.
MARIN COUNTY/MCEWAR QUARRY

Products and Property - McEvar Quarry is a major producer of a full range of rock products including rip rap, various grades of crushed rock, engineers rock, and asphaltic concrete. McEvar Quarry is the only facility in Marin County which offers a full range of products. Rip rap is used in the construction and maintenance of levees, jetties and breakwater and underwater projects. Engineers rock is also used in levee protection applications and for other uses such as base rock and trench backfill. A detailed product list for McEvar Quarry is provided in Exhibit 1.

The McEvar property consists of 696 acres (see Map 2 and Tab 3). Of this acreage, 411 acres are under-water side lots that are a part of San Francisco Bay and form the westernly and southerly quadrants of the property. The remaining 285 acres of land ground are used for hard rock quarrying by Basalt, and extraction of clays and shales for brick making by a local brick company which leases a production site. Basalt and appropriate regulatory agencies have agreed to a reclamation plan concerning McEvar Quarry (see McEvar Quarry - Real Estate Considerations).

Fixed plant facilities at McEvar Quarry consist of (i) a primary crushing plant which has a capacity of 500 tons per hour, (ii) a secondary crushing plant capable of producing at the rate of 600 tons per hour and, (iii) a 250 tons per hour asphaltic drum mix plant. The 600 tons per hour secondary plant was recently installed for a major project (see SWOP).

Owing to its bay-side location, McEvar Quarry is able to use low cost barge transportation to ship rock products to the San Francisco Bay and Sacramento/San Joaquin Delta region for levee, jetties and other projects. Water-borne transportation is served by barge load-out facilities which can handle 1,000 tons per hour. Truck departures are facilitated by a new efficient weigh station. In addition to these facilities, the Company recently constructed another loading facility for a major new project (see SWOP).

Reserves - The McEvar Quarry deposit consists of high quality Franciscan sandstone known as "blue rock" in the local market area. The Franciscan sandstone has a specific gravity of 2.6 and meets the highest state and federal specifications for construction uses. McEvar Quarry also contains weathered rock, clays and silts. Commonly referred to as "brown rock", the harder grades of this rock can be used for base rock and the finer grades for backfill. Management estimated the remaining life of these reserves are 16 years based upon an annual average extraction rate of 1.5 million tons.

Table 1

<table>
<thead>
<tr>
<th>Material</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weathered Rock/Fill Material</td>
<td>2,300,000</td>
</tr>
<tr>
<td>(Brown Rock)</td>
<td></td>
</tr>
<tr>
<td>Franciscan Sandstone (Blue Rock)</td>
<td>23,089,000</td>
</tr>
<tr>
<td>Total</td>
<td>25,389,000</td>
</tr>
</tbody>
</table>

SWOP - McEvar Quarry is presently engaged in a major contract to supply rock products for the Southwest Ocean Outfall Project (SWOP). This project is a joint venture including Morrison-Knudsen and Dillingham Construction. SWOP calls for construction of a five mile outfall pipe that extends into the Pacific Ocean for disposal of waste from the city of San Francisco. Delivery of rock began in May 1984 and is expected to continue through the spring of 1986. Basalt has contracted to provide an estimated 1.2 million tons of rock at an approximate value of $12.2 million.

To facilitate this venture, Basalt built a new plant which has a rated capacity of 600 tons per hour consisting of crushers, screens and conveyors with stockpiling and re-combining capabilities. A specially designed barge load-out facility was also constructed to accommodate the project. Basalt’s investment in these facilities was recently completed at a total cost of approximately $4 million. While these facilities will be utilized entirely for SWOP deliveries during the next 24 months, management plans to integrate the SWOP plant into regular operations after the SWOP project is completed. The pricing of the SWOP bid should enable Basalt to substantially recover the capital cost of new plant and improvements.

Marketing and Competition - McEvar Quarry's unique easy access to major roads and water transport, transportation, coupled with its close proximity to its principal customers are major competitive advantages. These advantages are enhanced by the use of a distributor who serves the Sacramento/San Joaquin Delta region with McEvar quarried rock. The distributor is a family owned company and has been engaged in levee construction and rehabilitation in this region for several generations. The distributor employs a fleet of barges to transport aggregates mined at the McEvar and Napa quarries.

McEvar Quarry is the principal high quality rock supplier in the Marin County market. The Company is estimated to produce more than two-thirds of the rip rap, base rock, crushed rock and asphaltic concrete in the Marin market area. Basalt expects its competitive position to improve in the near future because a competing quarry will be depleted within a few years and the competitor's new deposit is believed to be of only marginal quality.
Summary Tonnage and Revenue Data - Summary tonnage and revenue data are shown below in Table 2. Between 1980 and 1982, the volume of aggregate shipments increased significantly as poor weather conditions destroyed or damaged several levees in the Delta region served by McNear Quarry.

During this period, tonnage of aggregates shipped increased from 557,000 tons in 1979 to 1,689,000 tons in 1983. In contrast to increased aggregate shipments, asphaltic concrete shipments declined throughout this period as the number of federal, state and local resurfacing projects were curtailed. However, offsetting this decline in volume was a significant increase in prices. A number of non-recurring events also influenced asphaltic concrete tonnage and revenue. In March 1981, the company's asphaltic concrete plant was destroyed by an explosion. The plant was subsequently rebuilt and reopened in March 1982, although during this period, the company continued to make shipments under long-term supply contracts by purchasing asphaltic concrete from other sources and reselling it to customers.

Since the latter half of 1982, as the economy has recovered and interest rates have abated, construction activity has also increased. Reflecting improved demand for aggregates, the company's product mix in 1982 and 1983 included a greater proportion of rip rap and larger crushed rocks which contributed to an increase in revenue from $6.7 million in 1981 to $2.9 million in 1982. Demand for large rock remained strong in 1983, although average selling prices were lower as a large quantity of overburden was removed and sold in order to extract additional reserves for SWOP.

Asphaltic concrete volume and revenue also recovered in 1983 following a four year slide as the number of highway resurfacing projects increased.

Table 2

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregates</td>
<td>557</td>
<td>1,689</td>
<td>1,700</td>
<td>1,689</td>
<td>1,689</td>
</tr>
<tr>
<td>A.C.</td>
<td>283</td>
<td>288</td>
<td>273</td>
<td>273</td>
<td>273</td>
</tr>
<tr>
<td>Total</td>
<td>840</td>
<td>2,037</td>
<td>2,006</td>
<td>2,006</td>
<td>2,006</td>
</tr>
</tbody>
</table>

Projected tonnage and revenue data are shown in Table 3. As a result of the frequency of levee breaks and related damage to agriculture and water supplies in past years, several state and federal agencies have developed a plan to rebuild damaged levees and to undertake a program to maintain the condition of others. The plan calls for approximately $400-$500 million to be invested in this region over a period of time. McNear serves this region by barge primarily through its distributor.

Management estimates that more than 3.0 million tons of aggregate will be shipped to the Delta region from McNear as well as Napa during the next three years. In addition to levee work, shipments from McNear Quarry in the 1984-1987 period are projected to be supplemented by rock production for SWOP. The SWOP project will require approximately 1.2 million tons in 1985 and 1986 and will generate $12 million in revenues. Management also expects that asphaltic concrete shipments will increase as a result of new federal and state highway legislation stipulating improved maintenance.

Table 3

<table>
<thead>
<tr>
<th>Year</th>
<th>1984</th>
<th>1985</th>
<th>1986</th>
<th>1987</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tons</td>
<td>1,580</td>
<td>1,068</td>
<td>1,068</td>
<td>1,068</td>
</tr>
<tr>
<td>Dollars</td>
<td>$7,256</td>
<td>$9,630</td>
<td>$7,141</td>
<td>$3,725</td>
</tr>
<tr>
<td>A.C.</td>
<td>1,068</td>
<td>1,068</td>
<td>$9,630</td>
<td>$6,725</td>
</tr>
<tr>
<td>Total</td>
<td>2,648</td>
<td>2,126</td>
<td>$15,775</td>
<td>$14,475</td>
</tr>
</tbody>
</table>

Reclamation Plan - The company and the County of Marin have agreed to a reclamation plan which will permit the operator of McNear to extract the remaining proven reserves. The reclamation plan also calls for McNear Quarry to be developed for residential and commercial use within the next ten years (see McNear Quarry-Real Estate Considerations).
Comment Letter 30

Reserves - The following is an estimate of the remaining reserves by rock type and ownership, with the estimated life of these deposits based upon average extraction rates during the past five years. However, a large area within the site has not been explored and Napa Quarry could contain substantial additional reserves.

Table 4

<table>
<thead>
<tr>
<th>Reserves at December 31, 1988 - Napa</th>
<th>Tons</th>
<th>Life (Yrs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grey Rock-State Leased Area</td>
<td>7,100,000</td>
<td>12</td>
</tr>
<tr>
<td>Grey Rock-Basalt Owned Lands</td>
<td>3,000,000</td>
<td>6</td>
</tr>
<tr>
<td>Blue Rock-Basalt Owned Lands</td>
<td>1,500,000</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>11,600,000</td>
<td></td>
</tr>
</tbody>
</table>

In addition to these reserves, Basalt has an option to lease a forty-acre parcel of property which is located on the Napa/Solano County border. This property is believed to contain high-quality reserves and ensures for Basalt the opportunity to enter the Solano market which promises the highest prospective population growth in the North San Francisco Bay area. According to State of California projections, the population of Solano County is estimated to grow 15-20% during the next five years. The option permits the Company to explore for reserves on the property during the next three years and can be converted at the Company’s discretion to a fifteen-year lease. Management intends to open a quarry at this site and to operate that facility as an adjunct to the Napa Quarry operations.

The Napa Quarry site has loading facilities for barges in the Napa River, through which barges can efficiently access the San Francisco Bay and Sacramento Delta. Napa is an alternative source to McNear Quarry for rock products delivered via barge.

Marketing and Competition - As a result of the Company’s location, Basalt enjoys a leading market position. The Company’s principal competitor in the Napa market, within the market area, the Company is estimated to control approximately one-third of the aggregate market and one-half of the asphaltic concrete market. With the opening of the Napa Quarry, management believes the Company will have an opportunity to enhance its market position by further penetrating many of the highest growth communities within Solano County.

Summary Tonnage and Revenue Data - Summary tonnage and revenue data are shown in Table 5. Despite poor economic conditions during the four-year period ending in 1982, aggregate shipments and revenues increased steadily. During this period, aggregate revenues increased faster than volume as the tonnage of higher priced products such as rip rap and construction aggregate represented a greater percentage of total revenue produced relative to lower priced, finer grades. Management attributes this countercyclical performance to several projects initiated in 1978 and 1979 that were completed in 1982. The installation of the Napa barge loading facility in 1982 also contributed to increased volume as the facility began to serve as an alternate source to McNear for rip rap and crushed rock. The Napa barge facilities permitted the Company to serve several customers more competitively by water transportation. Barge shipments represented nearly one-half of the tonnage of aggregates shipped in 1983.

The Company’s asphaltic concrete business in the Napa market involves a higher percentage of private work relative to public projects than at McNear Quarry and consequently volume is often more cyclical. Although volume declined in 1980 and 1982, relaxed competitive pressures permitted the Company to maintain its asphaltic concrete prices without threatening its market position which partially offset lower unit shipments. During 1982 and the first half of 1983, the full impact of the recession affected the Napa market area. As capacity utilization fell, prices also declined resulting in lower total revenue. The market began accepting higher prices in the second half of 1983, as the initial stages of the economic recovery fostered increased demand. This trend has continued into 1984.

Table 5

<table>
<thead>
<tr>
<th>Year</th>
<th>Aggregate Tonnage</th>
<th>Aggregate Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>1979</td>
<td>420</td>
<td>$1,164</td>
</tr>
<tr>
<td>1980</td>
<td>456</td>
<td>1,292</td>
</tr>
<tr>
<td>1981</td>
<td>531</td>
<td>1,326</td>
</tr>
<tr>
<td>1982</td>
<td>470</td>
<td>1,012</td>
</tr>
<tr>
<td>1983</td>
<td>516</td>
<td>1,126</td>
</tr>
</tbody>
</table>

- 9 -
In fiscal 1984, the Company closed a quarry located in Napa County near Napa Quarry. During prior years, Basalt had extracted as much as 250,000 tons annually from this deposit. Management determined that the facility's return on investment did not meet the Company's long-term competitive objectives. Consequently, as shown in Table 6, during the next three years, the Company expects its aggregate volume to decline from 1983 levels although the future product mix should generate increased revenue and greater profitability. Asphaltic concrete revenues should also increase due to greater demand. In general, the Company believes Napa is a relatively mature market. However, the Company's projections do not give effect to any increase in volume or revenue attributed to Solano County and, therefore, may underestimate the true potential of this market.

Table 6
Projected Tonnage and Revenue - Napa

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tons</td>
<td>Sales</td>
<td>Sales</td>
<td>Sales</td>
<td>Sales</td>
</tr>
<tr>
<td>Aggregate</td>
<td>846</td>
<td>$4,035</td>
<td>663</td>
<td>$3,640</td>
</tr>
<tr>
<td>A.C.</td>
<td>195</td>
<td>4,100</td>
<td>172</td>
<td>3,200</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,041</td>
<td>$8,135</td>
<td>835</td>
<td>$6,840</td>
</tr>
</tbody>
</table>

Reclamation Plan - The Company and Napa County have agreed to a reclamation plan for the site which provides for the modification of certain open pits and the planting of various vegetation to retard erosion and maintain the aesthetics of the surrounding area. The reclamation plan does not call for any secondary use until the twenty-first century. Basalt is in the final stages of securing an amendment to the approved reclamation plan for Napa Quarry. The amendment pertains to revegetation of properties quarried since the earlier reclamation plan was approved.

SONOMA COUNTY

Products and Property - Basalt's Sonoma operations consist of a total of 1,700 acres of land which are distributed over sites known as Healdsburg, Doyle, Todd Road, Jintown, Geyserville and Grace Ranch (see Map 4). The total acreage of each of these areas is shown in Table 7, of which the principal acreage and reserves are located on the Russian River. A complete product list for the Sonoma facilities is provided in Exhibit 3.

Table 7
Approximate Acreage Owned in Sonoma County

<table>
<thead>
<tr>
<th>Acreage</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Grace Ranch</td>
<td>350</td>
</tr>
<tr>
<td>Russian River</td>
<td></td>
</tr>
<tr>
<td>Including Jintown and Geyserville</td>
<td>1,230</td>
</tr>
<tr>
<td>Other</td>
<td>120</td>
</tr>
<tr>
<td>Total Acreage</td>
<td>1,700</td>
</tr>
</tbody>
</table>

The Sonoma County operations principally produce sand and gravel and asphaltic concrete. Total tonnage produced during the past five years has averaged 1.2 million tons annually of which nearly all is produced at the Healdsburg facility. The Healdsburg sand and gravel processing plant is equipped with recovery tunnels which permit the blending and re-combining of 16 different sizes of materials. This capacity gives Basalt an advantage over its major competitors in the area who offer only limited blending capabilities. The Healdsburg site also features an automatic rail car loading facility which permits the Company to serve distant markets competitively through less expensive rail transportation. There are also two asphaltic concrete plants located at the processing plant site with a combined rated capacity of 450 tons per hour.

The Doyle plant, located six miles south of the Healdsburg plant, is devoted to the production of base rock and aggregate concrete sand with a capacity of 250 tons per hour. The Todd Road facility is a 225-ton per hour asphaltic concrete plant which is located directly south of Santa Rosa.

Basalt owns land between the banks of the Russian River for approximately six miles south of the Healdsburg processing plant, referred to as the middle reach, and approximately seven miles of the Russian River in the Alexander Valley, north of Healdsburg. This latter area is commonly referred to as the Jintown and Geyserville areas. Between 1931 and 1967, sand and gravel was extracted exclusively from within the banks of the river at rates exceeding one million tons per year. However, in recent years environmental concerns and Sonoma County ordinances governing gravel extraction have limited in-river operations. On several re-stream parcels, the Company has been granted vested rights which permit it to extract as much as 200,000 to 350,000 tons annually from such areas. At this rate of extraction, rock and sand extracted from within the river are naturally replenished annually. The Company is reviewing the vested rights issue to determine whether additional areas of the river should be so designated.
In 1967, the Company acquired the Grace Ranch Terrace area which is an additional source of supply to the Russian River property. At the Grace Ranch Terrace, the Company is extracting sand and gravel below the topsoil and replacing the excavated pit with sediments from the adjacent Healdsburg plant. Topsoil initially removed is being replaced as the land is restored for agricultural use, primarily as vineyard. Acreage that cannot be reclaimed for agricultural uses will be used for the creation of a series of ponds for waste water treatment and fish farming. The Company presently owns 194 acres of producing vineyard. At present, management believes the value of such vineyards are approximately $25,000 per acre.

Reserves - The following is an estimate of the Company's remaining reserves of sand and gravel in Sonoma County based upon estimates made five years ago and average extractions since that time. In addition to these reserves, approximately 300-350 thousand tons of sand and gravel are renewed annually in the Russian River basin through natural replenishment.

Table 8
Proven Reserves at December 31, 1978 - Sonoma

<table>
<thead>
<tr>
<th>Tons</th>
<th>Life (Yrs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doyle Base Plant - Terrace Area</td>
<td>900,000</td>
</tr>
<tr>
<td>Grace Ranch - Terrace Area</td>
<td>17,000,000</td>
</tr>
<tr>
<td>Total:</td>
<td>17,900,000</td>
</tr>
</tbody>
</table>

Marketing and Competitors - Basalt enjoys a strategic location advantage in the Sonoma County markets. Customers can easily reach the processing plants by means of Highway 101 or can ship products via a rail spur at the Healdsburg plant. From its Sonoma operations, Basalt also offers more capacity than its competitors and a broader line of products. These competitive advantages have enabled Basalt to capture considerable market share in Sonoma County. Basalt's primary competition in this region comes from three other sand and gravel producers. Basalt is estimated to presently control over one-third of the base and crushed rock market in the area, one-half of the concrete aggregate market and over one-third of the asphaltic-concrete market.

Table 9
Historical Tonneage and Revenues - Sonoma (000's)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tons</td>
<td>Sales</td>
<td>Tons</td>
<td>Sales</td>
</tr>
<tr>
<td>Aggregate</td>
<td>1,324</td>
<td>$4,245</td>
<td>1,113</td>
</tr>
<tr>
<td>A.C.</td>
<td>349</td>
<td>3,823</td>
<td>227</td>
</tr>
<tr>
<td>Total</td>
<td>1,673</td>
<td>7,068</td>
<td>1,340</td>
</tr>
</tbody>
</table>

Summary Tonneage and Revenues Data - Summary sales and tonnage shipments are shown in Table 9. Basalt's Sonoma operations are tied closely to the general construction cycle. Volume declined steadily between 1979 and 1982 and rebounded significantly in 1983 and 1984. A significant increase in both sand and gravel and asphaltic concrete prices during earlier years partially offset the decline in unit shipments.

The population of Sonoma County is expected to grow 11-15% during the next five year period. The Sonoma area presently offers the least expensive land and building values in the Northern San Francisco Bay region. Taking advantage of this opportunity, several high technology companies, such as Hewlett Packard, have made commitments to build new facilities in this market. Management expects shipments from the Sonoma facility to continue to grow steadily during the next three years as highway resurfacing and construction activity increases within this growing market. Unlike Marin and Napa counties, the Company believes the Sonoma market promises substantial growth during the next three years for both road and building construction.

Table 10
Projected Tonneage and Revenues - Sonoma (000's)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tons</td>
<td>Sales</td>
<td>Tons</td>
<td>Sales</td>
</tr>
<tr>
<td>Aggregate</td>
<td>1,033</td>
<td>$5,182</td>
<td>1,080</td>
</tr>
<tr>
<td>A.C.</td>
<td>215</td>
<td>4,926</td>
<td>238</td>
</tr>
<tr>
<td>Total</td>
<td>1,248</td>
<td>10,108</td>
<td>1,318</td>
</tr>
</tbody>
</table>

Reclamation Plan - The Company has submitted to the County of Sonoma a reclamation plan. The plan calls for the Company to continue to extract reserves during the next 20-25 years, after which time, Basalt would refill the properties and return it to agricultural use or construct a series of ponds to be used for water treatment or other purposes. The Company has also initiated hearings with regard to establishing vested rights on those parcels of property in Sonoma County that have not been so designated. Proceedings are pending.

OTHER INFORMATION

Other Property - In addition to the quarry property and equipment described above, the Company owns a 17,300 square foot building which was built in 1970, and serves as Basalt's administrative offices. The building is located in Napa, adjacent to the Napa Quarry and the Company's large loading facility.
Distribution Agreement - In 1980, Basalt entered into an exclusive distribution arrangement to serve the Delta of San Francisco Bay, the Sacramento River and the San Joaquin River. The distributor is a family-owned company and has been engaged in construction and leevale rehabilitation in the Delta region for several generations. The distributor’s knowledge of the region, rock transport and placing equipment and marketing expertise, have proven beneficial to Basalt over the past four years. The agreement expires in 1988 and provides for McNeil and Napa quarries to supply aggregates as needed by the distributor to serve the territory. The distributor owns and operates its own barges and may draw rock at either the McNeil or Napa facilities.

Employees - At July 31, 1984, the Company employed a total of 205 union, 30 non-union and 28 management employees. Most union employees are covered by a multi-union contract which is negotiated on behalf of the Company by the Aggregates and Concrete Association of Northern California. The major unions representing Basalt’s union employees are the International Brotherhood of Teamsters Local Union #3 Operating Engineers, International Association of Machinists and Aerospace Workers and Laborers’ International Union of North America. Of the Company’s union employees, 63 are employed at McNeil, 92 at Napa Quarry and 50 at the Sonoma operations. Management at McNeil consists of 4, with 6 at Napa and 4 at Sonoma. The balance of management and non-union employees are located at the Company’s corporate headquarters in Napa. In recent years, the Company has enjoyed good relations with its unions. To the Company’s best knowledge, all of its major competitors are union operators. To date, the Company has never experienced a work stoppage attributable to labor dissatisfaction.

Regulation - Each of the Company’s operating facilities is governed by local agencies which approve the Company’s reclamation plan and oversee the use of explosives and access to certain roads or right of ways. Each of these local authorities are governed by the California Surface Mining and Reclamation Act. The Act sets forth policies and minimum standards for surface mining practices and reclamation plan criteria. The Act, however, specifically excludes from its jurisdictional sites which have established a vested right to conduct surface mining operations prior to January 1, 1976. Section 2770 of the Act states as follows: "A person shall be deemed to have such vested rights if prior to January 1, 1976, he has, in good faith and in reliance upon a permit or other authorization, if such permit or other authorization were required, diligently commenced surface mining operations”. The Company believes it has established vested rights at each of its operating sites, but continues to work closely with local authorities to develop and amend reclamation plans as necessary.

Litigation - The Company is not named as a defendant in any suits, claims or other litigation which in the opinion of management could materially affect the financial condition of the Company.

30-106 cont.

HISTORICAL AND PROJECTED OPERATING RESULTS
AND FINANCIAL POSITION

The Company’s operating performance is closely tied to the general level of construction activity in the markets Basalt serves. Income is affected by the volume of rock and asphaltic concrete sold, the price for such products and the relative mix of rip rap, engineers rock, crushed rock and asphaltic concrete sold in any year. In general, asphaltic concrete is the most consistently profitable of the Company’s products while the income derived from rip rap and larger crushed rock is more volatile. Due to the relatively high operating leverage employed in rock mining, during periods of strong demand, margins for rip rap and engineers rock can be substantial, while during periods of recession, margins erode quickly.

Owing to the steady growth of the Sonoma market and the relative stability of asphaltic concrete and sand and gravel prices, Basalt’s Sonoma operations have been the most consistently profitable among the Company’s principal divisions. At Napa, the relative importance of asphaltic concrete to total revenue has grown during the past five years and, balanced out the often cyclical swings in aggregate volume and margins. McNeil’s business, on the other hand, is oriented more toward rip rap and crushed rock and consequently its earnings are often volatile.

Table 11

<table>
<thead>
<tr>
<th>Historical Operating Data</th>
<th>($000's)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Sales</td>
<td>$26,334</td>
</tr>
<tr>
<td>Cost of Sales</td>
<td>23,714</td>
</tr>
<tr>
<td>Gross Profit</td>
<td>2,620</td>
</tr>
<tr>
<td>General &amp; Administrative Expense</td>
<td>1,445</td>
</tr>
<tr>
<td>Income Before Taxes</td>
<td>1,175</td>
</tr>
<tr>
<td>Provision for Taxes</td>
<td>563</td>
</tr>
<tr>
<td>Income Before Discontinued Operations &amp; Non-recurring Items</td>
<td>1,112</td>
</tr>
<tr>
<td>Discontinued Items and Non-recurring Items (net of tax)</td>
<td>578</td>
</tr>
<tr>
<td>Net Income</td>
<td>1,690</td>
</tr>
</tbody>
</table>

30-106 cont.
In 1980, increased shipments of rip rap and larger grades of crushed rock used in levee construction accounted for a significant increase in consolidated gross margins and operating profit. During 1981, as the recession impacted general construction activity, sales of rock and asphaltic concrete declined at each facility and earnings declined as price discounting eroded margins. Income in 1981 was also reduced by the closing of the McNear asphaltic concrete plant which was destroyed in March 1981. In 1982, the McNear asphalt plant reopened and aggregate operations recovered quickly. Although McNear generated near record profits during 1982, income at Napa and Sonoma continued to fall; however, for the year as a whole, the Company's operating performance was significantly improved relative to 1981. During 1983, construction activity increased as declining interest rates facilitated new private construction and several public highway projects were initiated. Sales increased to $30.4 million in 1983 and Basalt's gross margin improved to 14.9%. Operating earnings were further enhanced in 1983 by reduced overhead and production efficiencies implemented. During the past 10 months, the Company has reduced annualized general and administrative expenses by more than $200,000.

As discussed above, due to the cyclical nature inherent in the industry, changes in earnings can be material. From time to time, management has sold devalued properties as a means to reduce unproductive assets and complement earnings. Voluntary earnings are also balanced by Basalt's high cash flow which is generated through depreciation and depletion. Working capital generated from operations is shown below in Table 12.

### Table 12

**Historical Cash Flow from Operations**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Income</td>
<td>$1,690</td>
<td>$2,706</td>
<td>$1,986</td>
<td>$985</td>
<td>$1,045</td>
</tr>
<tr>
<td>Depreciation &amp; Depletion</td>
<td>1,291</td>
<td>1,275</td>
<td>1,413</td>
<td>1,063</td>
<td>1,064</td>
</tr>
<tr>
<td>Deferred Taxes, Net</td>
<td>(254)</td>
<td>65</td>
<td>207</td>
<td>(69)</td>
<td>100</td>
</tr>
<tr>
<td>Working Capital from Operations</td>
<td>$2,727</td>
<td>$4,046</td>
<td>$3,606</td>
<td>$2,578</td>
<td>$3,012</td>
</tr>
</tbody>
</table>

### Table 14

**Projected Operating Data**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Sales</td>
<td>$10,129</td>
<td>$10,210</td>
<td>$10,305</td>
<td>$10,295</td>
</tr>
<tr>
<td>Cost of Goods Sold</td>
<td>26,004</td>
<td>30,768</td>
<td>32,062</td>
<td>32,019</td>
</tr>
<tr>
<td>Gross Profit</td>
<td>4,176</td>
<td>5,852</td>
<td>5,923</td>
<td>5,607</td>
</tr>
<tr>
<td>General and</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administrative Expense</td>
<td>1,910</td>
<td>1,485</td>
<td>1,560</td>
<td>1,630</td>
</tr>
<tr>
<td>Income Before Taxes</td>
<td>2,206</td>
<td>4,377</td>
<td>4,273</td>
<td>4,987</td>
</tr>
<tr>
<td>Provisions for Taxes</td>
<td>912</td>
<td>1,532</td>
<td>1,496</td>
<td>1,396</td>
</tr>
<tr>
<td>Income Before Non-Recurring Items</td>
<td>1,694</td>
<td>2,845</td>
<td>2,777</td>
<td>2,591</td>
</tr>
<tr>
<td>Gain on sale of equipment net of tax</td>
<td>450</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Income</td>
<td>$7,114</td>
<td>$2,845</td>
<td>$2,777</td>
<td>$2,591</td>
</tr>
</tbody>
</table>
Projected increases in income will also contribute to greater cash flow generated by operations. In addition, as SMOOP billings are paid, reductions of balances of costs in excess of billings representing earlier investment in new facilities related to SMOOP will generate a significant source of additional cash flow. Through such payments, Basalt expects to reduce working capital by approximately $3.5 million. An additional $900,000 of residual costs in excess of billings will be capitalized in 1986 after the SMOOP project is completed. From cash flow will be further enhanced by relatively lower projected capital expenditure requirements, with the exception of 1986, when Basalt plans to open the Solano/Napa Quarry. Projected working capital generated by operations and gross capital expenditures including additional investment in SMOOP in 1984 are shown below in Table 15.

Table 15

Projected Cash Flow from Operations (in $000's)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Income</td>
<td>$2,144</td>
<td>$2,045</td>
<td>$2,777</td>
<td>$2,591</td>
</tr>
<tr>
<td>Depreciation, Depletion</td>
<td>1,925</td>
<td>2,025</td>
<td>2,925</td>
<td>2,425</td>
</tr>
<tr>
<td>Deferred Taxes</td>
<td>139</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Working Capital from Operations</td>
<td>$4,208</td>
<td>$4,970</td>
<td>$5,102</td>
<td>$5,116</td>
</tr>
<tr>
<td>Reduction in Working Capital Related to SMOOP</td>
<td>$900</td>
<td>$1,000</td>
<td>$1,700</td>
<td>-</td>
</tr>
<tr>
<td>Capital Expenditures (including investment in SMOOP)</td>
<td>$3,135</td>
<td>$2,070</td>
<td>$1,370</td>
<td>$2,470</td>
</tr>
</tbody>
</table>

The principal officers of the Company are as follows:

G. Bruce Casten (53)
President and Operations Officer

Mr. Casten has twenty-five years experience in the heavy construction industry. He has held the Presidency since March 1984. His most recent assignment was Project Manager of the construction of the $120,000,000 Nasirah Island Air Base in Oman. Previously, he was Vice President-Operations Manager for Dillingham Heavy Construction, Inc., and its predecessor company, Gordon H. Boll, Inc. He is a member of the Basalt Executive Committee.

Mr. Casten received an engineering degree from San Jose State University. Mr. Casten is a permanent employee of Dillingham Construction and it is not presently anticipated that he will resign from Basalt following its sale.

Jack Streblow (57)
Past President and Consultant

Mr. Streblow has had thirty-four years experience with Basalt Rock, the past fourteen of which he served as President until March 1, 1984. He continued in an advisory capacity.

Mr. Streblow has a direct involvement in obtaining quarry permits, reclamation planning and community relations. Mr. Streblow began his career in 1950 as a salesman, became Vice President of Basalt from 1962-1969 and Vice President & General Manager of Basalt from 1969-1970. Mr. Streblow received a BA degree from the University of the Pacific, attended the Stanford University Executive Management Program, and attended the management course of Presidents and strategic planning at AMA.
N. David Mcgee (40)
Vice President-Administration

Mr. Mcgee has fifteen years experience with Basalt Rock/Oildingham, and eighteen years experience in the construction and materials supply industries. He has spent twenty-seven years in accounting, financial analysis and internal auditing. Mr. Mcgee's responsibilities include management of accounting, data processing, purchasing, credit, as well as being a key participant in the strategic and financial planning process. In addition, Mr. Mcgee is a graduate of the American Institute of Business, Des Moines, Iowa, and attended the Executive Development Program at the University of Illinois.

Ralph V. Locke (40)
Vice President-Marketing

Mr. Locke has twenty-one years of marketing and sales management experience in the Northern California aggregate and asphaltic concrete industry and has been with Basalt Rock for two years. Mr. Locke was a sales manager at Granite Rock, Co. from 1970-1982 and a sales and marketing manager at Teichert and Son from 1962-1970. He is a member of the Basalt Rock Executive Committee, Mr. Locke attended San Francisco State College, and attended the Marketing Management Program at Stanford University.

David M. Hornsby (28)
Plant Engineer

Mr. Hornsby joined Oildingham Heavy Construction, Inc. in 1979 where he served as an Engineer on various construction projects. On March 1, 1984 he transferred to Basalt Rock as its Plant Engineer. Mr. Hornsby is a graduate of Pennsylvania State University where he received a BS Degree in Mining Engineering.

John W. Sales (40)
Manager-Napa/Solano County Operations

Mr. Sales has twenty-eight years experience with Basalt Rock including his current position since 1979. Mr. Sales current duties include responsibility for all quarries and processing plants and asphaltic concrete plants at Napa Quarry. He has extensive operating experience in truck transportation and heavy maintenance of plant facilities and mobile equipment. Mr. Sales is a member of the Basalt Executive Committee. Mr. Sales is a graduate of San Jose State University and attended the Advanced Management Program at the University of Hawaii.

Richard L. Tonascia (58)
Manager-Sonoma County Operations

Mr. Tonascia has been with Basalt Rock for twenty-seven years. He has held his present position since 1980, and previously had the responsibilities of Assistant Manager/Sonoma County operations, Transportation Manager and Basalt Rock Division Manager. Mr. Tonascia is a member of the Basalt Rock Executive Committee. Mr. Tonascia graduated from San Jose State University.

Marvin F. Larson (40)
Manager-Marin County Operations

Mr. Larson has four years experience with Basalt Rock. Currently he is responsible for the entire McNear Quarry operations. He has had extensive experience in quarry operations, heavy construction and construction equipment sales. He is a member of the Basalt Rock Executive Committee. Mr. Larson graduated from the University of California/Berkeley with a degree in civil engineering.
MC NEAR QUARRY-REAL ESTATE CONSIDERATIONS

MARIN COUNTY

McNear Quarry is located in an unincorporated area of Marin County immediately adjacent to the city limits of San Rafael. Marin County is located on San Francisco Bay, across the Golden Gate Bridge north of San Francisco. Marin County is bounded on the south by San Francisco, on the west by the Pacific Ocean, on the north by Sonoma County and on the east by San Francisco and San Pablo Bay.

Marin County is a "bedroom community". The Marin Chamber of Commerce estimates that approximately 60% of the workforce in Marin County commute to San Francisco or Oakland. Marin County has fostered a policy of maintaining wide open space and has limited development to the inland area of the eastern business corridor. McNear Quarry is located in this corridor.

The population of Marin County increased eleven percent between 1970 and 1980 according to the California Chamber of Commerce. Within Marin County, the cities of Larkspur, San Rafael and Novato have lead this growth. Marin is desirable for its natural beauty, its temperate climate, its lack of pollution, and its lower density in comparison to San Francisco. Home prices, accordingly, have increased at high rates limiting the housing market to upper income levels. The 1980 census indicated the mean effective buying income per family in Marin County was $31,800, and the median income was $28,062, among the highest levels in the State of California.

MCNEAR REAL ESTATE DEVELOPMENT

In 1982, the Company and Marin County agreed to amend a reclamation plan submitted by Basalt and approved by the County in 1976. The 1982 amendment permits the Company to quarry new found reserves in the North Hill of McNear Quarry. Both the original reclamation plan and the amended plan anticipate that the Company will reclaim a major portion of the surface area of the Quarry after mining is completed. While the reclamation plan does not imply acceptance by local authorities of the future land uses stipulated in the Plan, the County of Marin has adopted the Peacock Gap Neighborhood Plan which anticipates the future development of McNear Quarry consistent with the reclamation plan as amended.

According to the reclamation plan, future land use would consist of developing single family detached dwellings, a neighborhood scale office and commercial complex, bay oriented townhouses and condominiums and a harbor and marina (see Tab I and II). Both the reclamation plan and the Peacock Gap Neighborhood Plan state that the primary factor determining

the intensity of development and permitted densities will be traffic considerations for the Company to Point San Pablo Road and Highway 101.

The Company believes it will be able to operate the Quarry at the present production rate for 10-15 years until proven reserves are depleted. However, Basalt recognizes that the value of McNear Quarry as real property may be maximized by beginning the development process earlier. To this end, a future developer may determine that it would be more economical to leave certain reserves in the Quarry in order to accelerate development or to retain certain geographical features such as hills and slopes in order to maximize density. Each of these factors, in turn, would impact the value of McNear Quarry as an on-going operation.

At this time, no permits have been granted to begin development and a future owner would have to initiate this process. The Company is required to submit a plan three years prior to completion of quarrying that sets forth Basalt's intended measures to re-vegetate selected areas. At this time, Marin County and other local agencies have not stipulated any other requirements for the Company prior to development.
**Exhibit 1**

McKearney Quarry - Product List

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 2 Aggregate Base 3/4</td>
<td></td>
</tr>
<tr>
<td>1-1/2 x 3/4 Crushed Rock</td>
<td></td>
</tr>
<tr>
<td>3/4 x 1/2 Crushed Rock</td>
<td></td>
</tr>
<tr>
<td>3/4 x 3/8 Crushed Rock</td>
<td></td>
</tr>
<tr>
<td>3/4 x 4 1/2 Crushed Rock</td>
<td></td>
</tr>
<tr>
<td>Slope Protection Rock - Engineer Rock</td>
<td></td>
</tr>
<tr>
<td>3/8 Minus</td>
<td></td>
</tr>
<tr>
<td>Backfill Sand</td>
<td></td>
</tr>
<tr>
<td>1 x 6 Crushed Rock</td>
<td></td>
</tr>
<tr>
<td>1 x 3/4 Crushed Rock</td>
<td></td>
</tr>
<tr>
<td>Class 4 Aggregate Subbase</td>
<td></td>
</tr>
<tr>
<td>3/4 x 1/4 Crushed Rock</td>
<td></td>
</tr>
<tr>
<td>0 x 6 Brown fill</td>
<td></td>
</tr>
<tr>
<td>0 x 6 Blue fill</td>
<td></td>
</tr>
<tr>
<td>Bank Run</td>
<td></td>
</tr>
<tr>
<td>3 x 1-1/2 Crushed Rock</td>
<td></td>
</tr>
<tr>
<td>1/2 x 1/4 Crushed Rock</td>
<td></td>
</tr>
<tr>
<td>Class 1 Type B Permeable</td>
<td></td>
</tr>
<tr>
<td>Berm Mix</td>
<td></td>
</tr>
<tr>
<td>1/2 Open Grade</td>
<td></td>
</tr>
<tr>
<td>3/8 Asphaltic Concrete</td>
<td></td>
</tr>
<tr>
<td>3/4 Asphaltic Concrete</td>
<td></td>
</tr>
<tr>
<td>1/4 Cold Mix</td>
<td></td>
</tr>
<tr>
<td>Slope Protection Rock - A Engineer Rock</td>
<td></td>
</tr>
<tr>
<td>Gabion Rock</td>
<td></td>
</tr>
<tr>
<td>Slope Protection Rock - B</td>
<td></td>
</tr>
<tr>
<td>Light Class Rip Rop</td>
<td></td>
</tr>
<tr>
<td>Method A Armor Stone</td>
<td></td>
</tr>
<tr>
<td>Facing Rock</td>
<td></td>
</tr>
</tbody>
</table>

**Exhibit 2**

Napa Quarry - Product List

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Napa Grey</td>
<td></td>
</tr>
<tr>
<td>Slope Protection Rock</td>
<td></td>
</tr>
<tr>
<td>Slope Protection Rock - A</td>
<td></td>
</tr>
<tr>
<td>Slope Protection Rock - B</td>
<td></td>
</tr>
<tr>
<td>Engineer Rock</td>
<td></td>
</tr>
<tr>
<td>Slope Protection Rock - B</td>
<td></td>
</tr>
<tr>
<td>Gabion Rock</td>
<td></td>
</tr>
<tr>
<td>Crushed Rock 3 x 6</td>
<td></td>
</tr>
<tr>
<td>Crushed Rock 2-1/2 x 1-1/2</td>
<td></td>
</tr>
<tr>
<td>Crushed Rock 2 x 1/2</td>
<td></td>
</tr>
<tr>
<td>Crushed Rock 2 x 1/2</td>
<td></td>
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<tr>
<td>Crushed Rock 3/4 x 1/4</td>
<td></td>
</tr>
<tr>
<td>Base Materials</td>
<td></td>
</tr>
<tr>
<td>Aggregate Subbase</td>
<td></td>
</tr>
<tr>
<td>Class 2 Base 1-1/2</td>
<td></td>
</tr>
<tr>
<td>Class 2 Base 3/4</td>
<td></td>
</tr>
<tr>
<td>Misc. Products</td>
<td></td>
</tr>
<tr>
<td>Masonry Stone</td>
<td></td>
</tr>
<tr>
<td>Road Rock</td>
<td></td>
</tr>
<tr>
<td>Aggregate Subbase</td>
<td></td>
</tr>
<tr>
<td>6 Minus</td>
<td></td>
</tr>
<tr>
<td>Fill Run</td>
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<tr>
<td>Field Stone</td>
<td></td>
</tr>
<tr>
<td>1/2 Minus</td>
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</tr>
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<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Napa Blue</td>
<td></td>
</tr>
<tr>
<td>Crushed Rock 3/4 x 1/2</td>
<td></td>
</tr>
<tr>
<td>Class 1 Type B Permeable</td>
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</tr>
<tr>
<td>Blue Rock 3/4 x 1/2</td>
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<tr>
<td>Blue Rock 1/2 x 1/4</td>
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<td>Blue Rock F11</td>
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<tr>
<td>Blue Rock Dust</td>
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<tr>
<td>Washed 3/8 Minus</td>
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<tr>
<td>Asphaltic Concrete</td>
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<tr>
<td>Asphaltic Concrete 3/8</td>
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<tr>
<td>Asphaltic Concrete 1/4</td>
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<tr>
<td>Asphaltic Concrete 1/2</td>
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<tr>
<td>A/C Open Grade 1/2</td>
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<tr>
<td>A/C Open Grade 3/8</td>
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<td>Cold Mix 1/2</td>
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<tr>
<td>Cold Mix 3/8</td>
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<td>Cold Mix 3/4</td>
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<td>U.P.M. Cold Patch</td>
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<tr>
<td>Topaka Mix</td>
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<tr>
<td>Berm Mix</td>
<td></td>
</tr>
<tr>
<td>Paving/Cut-Back Asphalt</td>
<td></td>
</tr>
<tr>
<td>Paving Asphalt AH 4000/Ton</td>
<td></td>
</tr>
<tr>
<td>Paving Asphalt AC 8000/Ton</td>
<td></td>
</tr>
<tr>
<td>Asphalt Cut-Back SC50U/Ton</td>
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<tr>
<td>Emulsified Asphalt</td>
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<tr>
<td>Emulaphsph R15/Tons &amp; Gals</td>
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<tr>
<td>Emulaphsph SS1/Tons &amp; Gals</td>
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</table>
Comment Letter 30

Exhibit 3
Sonoma Quarry - Product List

Asphaltic Concrete
Asphaltic Concrete 1/2
Asphaltic Concrete 3/8
Asphaltic Concrete 1/4
A/C Open Grade 1/2
A/C Open Grade 3/8
Cold Mix 3/8
Cold Mix 1/4
Topeka Mix
Berm Mix
Marshall Mix A/C

Healdsburg Plaster Sand
Backfill Sand
Sturpy Sand
Structure Backfill
Bedding Material
Backfill Pea Gravel

Concrete Aggregate
Concrete Gravel 2-1/2 x 1/2
Concrete Gravel 1-1/2 x 1/4
Concrete Gravel 1-1/4 x 1/4
Concrete Gravel 1 x 1/4
Concrete Gravel 3/4 x 1/4
Concrete Sand
Kiln Dried Sand
Gunite Sand
Concrete Mix
Pea Gravel Rewashed

Crushed Rock
Crushed Rock 1
Crushed Rock 3/8
Crushed Rock 1-1/2
Crushed Rock 1-1/4
Crushed Rock 1-1/4 x 1/4

Base Materials
Class 2 Base 1-1/2
Class 2 Base 3/4
Stabilize Aggregate Base - Coarse

Additional Products
Class 1 Perm Type A
Class 1 Perm Type B
Class 2 Permeable
River Run
Processed River Run
Cobbles 3 x 6
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<tr>
<th>Material</th>
<th>Quantity</th>
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<td>Class 2 Aggregate Base 3/4</td>
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<tr>
<td>1-1/2 x 3/4 Crushed Rock</td>
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<td>3/4 x 3/8 Crushed Rock</td>
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<tr>
<td>Slope Protection Rock -</td>
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<td>Engineer Rock</td>
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<tr>
<td>3/8 Mixture</td>
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<td>Backfill Sand</td>
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<td>3 x 6 Crushed Rock</td>
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<td>1 x 3/4 Crushed Rock</td>
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<tr>
<td>Class 4 Aggregate Subbase</td>
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<td>3/4 x 1/4 Crushed Rock</td>
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<tr>
<td>0 x 6 Brown fill</td>
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<tr>
<td>0 x 6 Blue fill</td>
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<td>Bank Run</td>
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<tr>
<td>3 x 1-1/2 Crushed Rock</td>
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<tr>
<td>1/2 x 1/4 Crushed Rock</td>
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<tr>
<td>Class 7 Type B permeable</td>
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<tr>
<td>Berra Mix</td>
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<tr>
<td>I/2 open Grade</td>
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<tr>
<td>3/8 Asphaltic Concrete</td>
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<tr>
<td>3/4 Asphaltic Concrete</td>
<td></td>
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<tr>
<td>1/4 Cold Mix</td>
<td></td>
</tr>
<tr>
<td>Slope Protection Rock - A</td>
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<tr>
<td>Engineer Rock</td>
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<tr>
<td>Slope Protection Rock - B</td>
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<tr>
<td>Sabion Rock</td>
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<tr>
<td>Slope Protection Rock - B</td>
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</tr>
<tr>
<td>Light Class Rip Rap</td>
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<tr>
<td>Method A Armor Stone</td>
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<tr>
<td>Facing Rock</td>
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</table>
### Exhibit 2
**Napa Quarry - Product List**

<table>
<thead>
<tr>
<th>Napa Gray</th>
<th></th>
<th>Napa Blue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slope Protection Rock</td>
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<td>Crushed Rock</td>
</tr>
<tr>
<td>Slope Protection Rock - A</td>
<td></td>
<td>Blue Rock 3/4 x 1/2</td>
</tr>
<tr>
<td>Slope Protection Rock - B</td>
<td></td>
<td>Class 1 Type B Porous</td>
</tr>
<tr>
<td>Slope Protection Rock - E</td>
<td></td>
<td>Crushed Rock 3/4 x 1/2</td>
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<td>Engineer Rock</td>
<td></td>
<td>Blue Rock 3/4 x 1/2</td>
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<tr>
<td>Slope Protection Rock</td>
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<td>Blue Rock 1/2 x 1/4</td>
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<tr>
<td>Gabion Rock</td>
<td></td>
<td>Blue Rock 1/4 x 10</td>
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<td></td>
<td></td>
<td>Blue Rock Filler</td>
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<td></td>
<td>Blue Rock Dust</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Washed 3/8 minus</td>
</tr>
</tbody>
</table>

#### Base Materials
- Aggregate Subbase
- Class 2 Base 1-1/2
- Class 2 Base 3/4

#### Misc Products
- Masonry Stone
- Road Rock
- Aggregate Subbase 6 minus
- Pit Run
- Field Stone 1/2 minus

#### Paving/Cut-Back Asphalts
- Paving Asphalt AR 4000/Tons
- Paving Asphalt AR 6000/Tons
- Asphalt Cut-Back 2250/Tons

#### Emulsified Asphalts
- Emulashphalt RSI/Tons & Gals
- Emulashphalt SSI/Tons & Gals

### Exhibit 3
**Sonoma Quarry - Product List**

<table>
<thead>
<tr>
<th>Asphallic Concrete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphaltic Concrete 1/2</td>
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<tr>
<td>Asphaltic Concrete 3/4</td>
</tr>
<tr>
<td>Asphaltic Concrete 1/4</td>
</tr>
<tr>
<td>A/C Open Grade 1/2</td>
</tr>
<tr>
<td>A/C Open Grade 3/4</td>
</tr>
<tr>
<td>Cold Mix 1/2</td>
</tr>
<tr>
<td>Cold Mix 3/8</td>
</tr>
<tr>
<td>Cold Mix 1/4</td>
</tr>
<tr>
<td>Topeka Mix</td>
</tr>
<tr>
<td>Berm Mix</td>
</tr>
<tr>
<td>Marshall Mix A/C</td>
</tr>
<tr>
<td>Healdsburg Paver Sand</td>
</tr>
<tr>
<td>Backfill Sand</td>
</tr>
<tr>
<td>Slurry Sand</td>
</tr>
<tr>
<td>Structure Backfill</td>
</tr>
<tr>
<td>Bedding Material</td>
</tr>
<tr>
<td>Backfill Pea Gravel</td>
</tr>
</tbody>
</table>

#### Additional Products
- Class 1 Perm Type A
- Class 2 Perm Type B
- River Run
- Processed River Run
- Coboles 3 x 6

#### Concrete Aggregate
- Concrete Gravel 2-1/2 x 1/2
- Concrete Gravel 1-1/2 x 3/4
- Concrete Gravel 1-1/2 x 4
- Concrete Gravel 1 x 4
- Concrete Gravel 3/4 x 4
- Concrete Sand
- Kiln Dried Sand
- Gunite Sand
- Concrete Mix
- Pea Gravel Washed

#### Crushed Rock
- Crushed Rock 1
- Crushed Rock 5/8
- Crushed Rock 1-1/2 x 4
- Crushed Rock 3/4 x 4
- Crushed Rock 1/4 x 10

#### Base Materials
- Class 2 Base 1-1/2
- Class 2 Base 3/4
- Stabilized Aggregate Base - Coarse
<table>
<thead>
<tr>
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<th>Input</th>
<th>Export</th>
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<tbody>
<tr>
<td><strong>Aggregate</strong></td>
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<tr>
<td>425,000 tons</td>
<td>600</td>
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<tr>
<td>71,000 tons</td>
<td>900</td>
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<tr>
<td>675 tons</td>
<td>3</td>
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<tr>
<td>150,000 tons</td>
<td>6,222</td>
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<tr>
<td>325,000 tons</td>
<td>1,175</td>
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<tr>
<td>650,875 tons</td>
<td>7,350</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td>3,122</td>
<td></td>
</tr>
<tr>
<td>6,382,868 gals</td>
<td>7,382</td>
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<tr>
<td>1,149,096</td>
<td>14,287</td>
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<tr>
<td><strong>Average Annual Daily Traffic (AADT) (= Annual / 250 work days per year)</strong></td>
<td>62,543</td>
<td>60,449</td>
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<tr>
<td><strong>Adjusted Daily Trips (with Peak Hour Trips = AADT x 0.5)</strong></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>AM Peak Hour Truck Trips (= Daily Trips / 3 hours per day)</strong></td>
<td>70</td>
<td>150</td>
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<tr>
<td><strong>PM Peak Hour Truck Trips (note based on existing patterns)</strong></td>
<td>0</td>
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<tr>
<td><strong>AM Peak Hour Passenger Car Trips (= Track Trips x 3)</strong></td>
<td>32</td>
<td>80</td>
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<tr>
<td><strong>PM Peak Hour Passenger Car Trips (note based on existing patterns)</strong></td>
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<td>0</td>
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<tr>
<td><strong>Peak Hour Non-Track Vehicle Trips</strong></td>
<td>10</td>
<td>10</td>
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<tr>
<td><strong>Total Trips AM</strong></td>
<td>233</td>
<td>225</td>
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<tr>
<td><strong>Total Trips PM</strong></td>
<td>0</td>
<td>10</td>
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* 3,122,868 gals of oil equals 13,500 tons

Source: Fehr and Peers, 2004
### EXHIBIT 4 of DEIR letter by Pt. San Pedro Road Coalition

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<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Aggregate Production, t/yr</td>
<td>1,140,700</td>
<td>1,399,000</td>
<td>1,265,000</td>
<td>1,344,000</td>
<td>1,067,000</td>
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<tr>
<td>Aggregate Concrete Production, t/yr</td>
<td>50,000</td>
<td>75,000</td>
<td>50,000</td>
<td>124,000</td>
<td>136,000</td>
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<tr>
<td>Total Tonnage, t/yr</td>
<td>1,290,700</td>
<td>1,474,000</td>
<td>1,315,000</td>
<td>1,468,000</td>
<td>1,193,000</td>
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</tbody>
</table>

Increase in Aggregate Production, due to
- Levee Breake breached out of BRRQ
- Add

Aggregate Production, t/yr

Levee Breake Baseline production, t/yr

Increase Production due to Levee Breake 1

Normal Production & Shipment of Aggregate Products, t/yr

Before Levee breach production, t/yr

**TOTAL BARGE TONNAGE, t/yr**

Total Barge Tonnage, t/yr

**DATE TONNAGE, t/yr**

Total Aggregate Production, t/yr

Less Aggregate Production shipped on Barge, t/yr

Aggregate Production shipped via gate, t/yr

Add Asphalt Concrete, t/yr

**TOTAL 1996 DATE TONNAGE SHIPPED, t/yr**

**AVERAGE DAILY TRUCK TRIPS, t/yr**

Average Number of 30 Ton Trucks, t/yr

Average Number of 35 Ton Trucks, t/yr

Average Number of 40 Ton Trucks, t/yr

**AVERAGE DAILY TRUCK TRIPS, EIR 24/7 WORK DAYS, t/yr**

**ESTIMATED DAILY TONNAGE PER 24/7 WORK DAYS, t/yr**

**DAILY NUMBER OF 30 TON TRUCKS, t/yr**

**DAILY NUMBER OF 35 TON TRUCKS, t/yr**

**DAILY NUMBER OF 40 TON TRUCKS, t/yr**

**The June 2006 truck tonnage provided to the Court shows that the truck alignments to the Publican and Richmond sites are in excess of 30 tons. This is in violation of the Court Order.**

---

**ATTACHMENT 2**

**EXHIBIT D**

---

**30-108 cont.**
<table>
<thead>
<tr>
<th>#</th>
<th>NAME &amp; COUNTY</th>
<th>ORGANIZATION</th>
<th>CONTACT PERSON</th>
<th>PHONE NUMBER</th>
<th>ADDRESS</th>
<th>FILL</th>
<th>BID DEQ</th>
<th>RFP RAP</th>
<th>ACCESS</th>
<th>NOTES</th>
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<tbody>
<tr>
<td>1</td>
<td>Anderson Valley Quarries, Inc.</td>
<td>Grange Road, Inc.</td>
<td>Bill Brackett</td>
<td>335-800-9800</td>
<td>150 S.</td>
<td>1/4&quot;</td>
<td>1,500 tons (higher W/C from CA)</td>
<td>1,500 tons (higher W/C from CA)</td>
<td>Truck</td>
<td>Hay 88</td>
</tr>
<tr>
<td>2</td>
<td>Bangor Rock Quarry (Rutte Co.)</td>
<td>Bay S. Land</td>
<td>Mark Onstott</td>
<td>540-203-1112</td>
<td>4500 S.</td>
<td>1/2&quot;</td>
<td>12&quot;x18&quot;</td>
<td>2&quot;</td>
<td>Truck</td>
<td>Hay 50</td>
</tr>
<tr>
<td>3</td>
<td>Canyon Hill (Elkins Co.)</td>
<td>Canyon Hill Rock Products</td>
<td>Bill Plummer</td>
<td>303-765-6928</td>
<td>300 S.</td>
<td>1/2&quot;</td>
<td>12&quot;x18&quot;</td>
<td>2&quot;</td>
<td>Truck</td>
<td>Hay 30</td>
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<tr>
<td>4</td>
<td>Rogue Valley (Elkins Co.)</td>
<td>Fund Transportation</td>
<td>Jeri Modrink</td>
<td>250-203-9707</td>
<td>3000 S.</td>
<td>1/2&quot;</td>
<td>12&quot;x18&quot;</td>
<td>2&quot;</td>
<td>Truck</td>
<td>Hay 10</td>
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**ATTACHMENT 2 EXHIBIT E 30-109 cont.**
### LEVEE EMERGENCY REPAIR PROJECT
#### Material Sourcing Information Spreadsheet

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<th>NAME &amp; COUNTY</th>
<th>SITE</th>
<th>CONTACT/PHONE &amp; MAIL ADDRESS</th>
<th>PRODUCED RATE</th>
<th>STOCKPILE SIZE &amp; PRICE</th>
<th>ACCRES</th>
<th>NOTES</th>
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</thead>
<tbody>
<tr>
<td>14</td>
<td>Carl J. Woods Construction Co.</td>
<td>Bill Woods</td>
<td>High compaction, good drainage</td>
<td>7'-8&quot;</td>
<td>14&quot; minus</td>
<td>6000 tons</td>
</tr>
<tr>
<td>15</td>
<td>Carl J. Woods Construction Co.</td>
<td>Bill Woods</td>
<td>High compaction, good drainage</td>
<td>42&quot;</td>
<td>0.7&quot; minus</td>
<td>6000 tons</td>
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<tr>
<td>16</td>
<td>Nordic Industries, Inc.</td>
<td>Nordic Industries, Inc.</td>
<td>Nordic Industries, Inc.</td>
<td>29'-0&quot; x 24'-0&quot;</td>
<td>0.0&quot;</td>
<td>300 tons</td>
</tr>
<tr>
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<td>Nordic Industries, Inc.</td>
<td>Nordic Industries, Inc.</td>
<td>Nordic Industries, Inc.</td>
<td>29'-0&quot; x 24'-0&quot;</td>
<td>0.0&quot;</td>
<td>300 tons</td>
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</tbody>
</table>

**Comment Letter 30**

**Board of Directors:**
- Denise Lurie, Co-President
- Bonnie Marmor, Co-President
- Dave Crutchler, Secretary/Treasurer
- Amanda Metcalfe, Past President
- Alan Schaeffer, Volunteer

**Point San Pedro Road Coalition**
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**October 3, 2007**

Tim Hadad
Marin Community Development Agency
350 Civic Center Drive, Room 308
San Rafael, CA 94903

Dear Mr. Hadad:

**Re:** Scoping Comments for EIR on SRRO Amended Quarrying Permit

The Pt. San Pedro Road Coalition (the "Coalition") consists with the decision to require an Environmental Impact Report ("EIR") for the amended San Rafael Rock Quarry permit (the "AQO") that has been proposed by the San Rafael Rock Quarry ("SRQ") or the "Quarry"). Although the initial study ("IS") released in June identifies many potential significant impacts from the AQO, it ignores or materially understates many negative consequences, such as damage and disturbance from blasting, the detrimental effects of the increasing intensity of the Quarry's operations on traffic, noise and the general environment of the Pt. San Pedro Road peninsula.

**A. Overview**

This letter discusses the following general topics:

- Baseline Determination. The baseline determinations contained in the IS appear to be substantially overstated, particularly relating to overall production levels and the percentage of Quarry materials shipped by truck instead of by barge. Because of the fundamental importance of the baseline, the EIR must make a greater effort to determine an accurate baseline. It must also analyze trucking impacts and alternatives to a much greater extent that contained in the IS.
- Overburden Disposal. The EIR should be prepared on the assumption that SRRO's proposal to deposit overburden material in the Northeast Quadrant constitutes quarrying activity that is not permitted by Court order.
- Consistency with Countywide Plan. There has been substantial evolution in the residential setting of the Quarry over the past quarter century, which is appropriately reflected in the CWP. However, the CWP's proposals and plans for the Pt. San Pedro Road corridor are generally inconsistent with increased mining intensity at the

**Attachment 3**
Comment Letter 30

Scoping Comments for EIR on SRRO Amended Quarrying Permit

Quarry. The EIR must evaluate the AQP much more rigorously with respect to its consistency with the CWP.

Air Quality. The IS understates the health hazards posed by particulate matter produced by Quarry operations, in particular respirable crystalline silica and diesel particles. Several studies over the past decade stand as a red flag that something may be terribly wrong, notwithstanding the more benign study on which the IS principally relies. The EIR must dramatically enhance its review of air quality over the area contained in the IS.

Biological Issues. Increased quarrying activity is likely to have a significant and negative effect on the site's marshland and native species. The EIR should analyze these effects, including the AQP’s consistency with setbacks for the Bayland’s Corridor in the CWP and with the Quarry’s status as a Bayfront Conservation zone.

Barging. The IS generally asserts that bargeing causes few negative impacts and thus need not be studied or upgraded. For this reason, the AQP proposed to increase barge activity over the baseline dramatically. In fact, bargeing is a safety and dust-suppressing activity. On the other hand, it is also confined to a relatively small part of the Quarry site, and lends itself to very effective mitigation through enclosuure. The EIR should study all the effects of additional bargeing, and seriously examine the practicability of enclosing the entire barge loading activity. Practicability should be applied to the context of a large capital budget that an operation the scale of the Quarry should report.

Hours of Operation. SRRO is proposing to expand substantially the hours during which it may conduct operations, including barge loading until 10 p.m. every day. The EIR should address the effects of these increased hours, which will exacerbate most of the negative effects of quarrying that are discussed in this letter.

Blasting. Blasting is a major concern of residents close to the Quarry. Though this letter proposes a number of mitigation approaches, the basic objective is to reduce the effect of a blast to the "barely perceptible" standard that the Quarry (and the IS) incorrectly assumes is currently being met.

Noise. The AQP should have high expectations of SRRO with respect to reducing the amount of noise resulting from Quarry operations. Though we suggest investigating a number of approaches, enclosing the most offending aspects of the operation may well be feasible economically (considering the scale of the Quarry operation), and would almost certainly reduce dramatically the noise problem. It would address other environmental problems as well, such as dust production. Serious consideration must be given to enclosing as much of the quarrying operation as possible.

Aesthetics. As with any strip mine, the Quarry is an eyesore. However, it proposes to hide from the view of residents by erecting berms in Quarry locations that are off-limits to quarrying activity. The construction of these berms over years and years would have a devastating effect on nearby neighborhoods. They should be rejected as prohibited operations.

Cumulative Effects. The EIR must also consider the cumulative effects of all negative impacts on the residents and the environment, taken as a whole. None of these effects should be analyzed solely by themselves. The EIR must consider the cumulative pollution effects of all Quarry sources in combination with nearby non-SRRO operations in the area, such as McNear’s Brick yard, other construction projects in the neighborhood, diesel from ships and particulates from nearby refineries. The EIR should consider the complaints presented during the Court at trial and subsequently submitted to the Court for consideration at status conferences, as well as the Coalition’s surveys that were submitted to the County and SRRO, in order to assess the cumulative impacts on the community.

Alternative Plan. Finally, we propose alternative set of operating conditions that are reasonable and strike an appropriate balance between the residents living on the Pt. San Pedro Road peninsula.

II. Baseline Determination

The most fundamental and consequential assumption underlying the scope of the EIR is the determination of the 1982 baseline. Specific components of the baseline have been determined on the basis of incomplete and inaccurate facts, and unchallenged assumptions. Though inaccurate baseline production levels and truck traffic are discussed above, these are not the only inaccurate baseline components.

Level of Production

The IS estimates the average production for the Quarry in 1980-1982 at 1,414,667 tons. This number is an average reported for those years in a document prepared in October 1984 by Merrill Lynch Capital Markets for the purpose of marketing the Quarry to potential buyers. The IS notes the tonnage from 1979, but disregards it when determining the estimated tonnage even though it was included in Table FD-2 of the IS. The following table presents tonnages for 1979 through 1982:

<table>
<thead>
<tr>
<th>Year</th>
<th>1979</th>
<th>1980</th>
<th>1981</th>
<th>1982</th>
</tr>
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<tbody>
<tr>
<td>Tons</td>
<td>692</td>
<td>1,467</td>
<td>1,304</td>
<td>1,473</td>
</tr>
</tbody>
</table>

If the IS had included the much lower 1979 production the average would have been 1,234,000 tons. The 1979 production statistic is historic data that should have been included in the calculation.

\[\text{The County must research much more thoroughly both SRRO’s internal records and their external reports to regulators in order to arrive at more accurate current and historical production estimates. This would allow the full impact of the AQP to be examined in light of current and projected future levels of Quarry activity.}\]

Truck Traffic

The IS states (at page 17, bullet 12) that there are no known records of the number of truck trips associated with SRRO operations in 1982, and that the Marin County Planning Department estimated the number of truck trips in 1981 and 1982 by assuming that half of the Quarry’s annual production was shipped by truck and the other half by barge, that the Quarry operated 240 days per year, and that the average truck load was 20 tons. The table lists production level by ton and assumes half was shipped by truck.

Attachment 3
computations have never been independently analyzed and are inconsistent with other reliable documents.

- The EIR should provide a more accurate estimate of both the number of days that the Quarry operated during 1979 through 1982 and its current hours and days of operations.

The EIR translates tonnages into truck trips using an average truck size as its denominator. Over the years, the gravel trucks coming to and from the Quarry have increased materially in size from 20 tons to 25 tons.

- Since a high percentage of the materials shipped out of the Quarry go to SRQQ plants in Richmond and Petaluma, the EIR should study the impact on the community if these loads were shipped by barge instead of trucks.

Other sources of baseline information seem not to have been considered. For example, Norman T. Gilroy and Associates testified at the 2004 trial of Marin County Case No. CV014584 about his May 12, 1982, letter to Mehdi Maqad-Sadjadi, Assistant Land Development Engineer of Marin County Department of Public Works. On page 4, paragraph 6, Mr. Gilroy wrote:

"The vast majority of the material quarried at the property is shipped out by deep water barge, thereby minimizing the kind of truck traffic which might normally be associated with an operation of this size."

Gilroy testified that a reasonable interpretation of "vast majority" is that at least 75% of material quarried at the property in 1982 was shipped out by barge, meaning that at most 25%, or 368,250 tons, were shipped out by truck in 1982. Gilroy also testified that Basalt was sensitive to the neighbors' concerns with the truck traffic and accepted many bargeable projects to take traffic off the road. There is no valid basis for making any upward adjustment from the 1982 baseline figure of 368,250 tons. Despite Gilroy's assurance that no increase in truck traffic was expected, 456,775 tons of materials were shipped by truck in 1989, the first year for which SRQQ has provided data. In 2000, 748,220 tons were shipped out and in 2001, 713,382 tons were shipped out by truck.

These are the two years for which SRQQ provided data. The 2000 tonnage trucked out is a 103% increase over the amount trucked out in 1982, a very substantial intensification of truck use. SRQQ has significantly exceeded the 368,250 ton baseline figure for every year for which records are available between 1989 and 2001.

- The EIR should deem 368,250 tons of products per year from the SRQQ as the baseline amount of truck traffic and evaluate the environmental impacts of SRQQ's current and proposed use in comparison to that level of trucking.

- The EIR should explain the discrepancy between the IS estimation that 50% of all Quarry products were shipped by truck compared to Gilroy Associates' letter of May 12, 1982, and Gilroy's trial testimony stating that at least 75% of the Quarry's output was being shipped by barge.

SRQQ should have the burden for determining higher baseline levels. They are the only party that has been in a position to produce and safeguard the records necessary to support their own production claim. If the records they produce are inadequate to that task, then only they are to blame. SRQQ cannot claim that they should not be penalized for their predecessor's (Basalt's) lack of adequate production records. Though they might not have anticipated they would need production records to support an eventual permit, their lack of due diligence in the course of their acquisition regarding the stewardship of quarry records is their own fault. It is unacceptable that the County would constitute production evidence in SRQQ's favor.

- If the County cannot definitively determine which of multiple pieces of conflicting evidence is the most accurate for determining the operating baseline, the evidence should be construed against SRQQ in favor of other competent evidence.

- Consultants hired by the County have demonstrated that they are ill-suited estimators of past Quarry activity. To obtain a more accurate baseline, a cultural anthropologist should be hired to interview residents and take other appropriate steps to investigate how people co-existed with the operators of the Quarry site since 1972 and gain a far more accurate sense of the intensity of Quarry operations.

- That same cultural anthropologist should be asked to review and comment in the EIR on how the proposed increase in quarrying intensity is likely to affect residents living near the Quarry.

- The EIR should review the court case records and the ongoing complaints submitted to the County regarding complaints by neighbors regarding trucking operations.

SRQQ has stated its intent to continue quarrying operations for another 20 or 30 years, at least. The AQP will constitute the principal rules under which the Quarry will operate for this future period. Because the public may have no effective opportunity to question the environmental impacts resulting from the AQP, these new rules should at least be examined against an accurate well-researched baseline.

The EIR has relied upon SRQQ's representations of full adherence to the SRQQ "Truckers' Management Plan." There has been no independent verification of adherence to any aspect of that plan. Though SRQQ has represented that all trucks leaving the Quarry will be tarped, and trucks will depart from intervals to avoid caravanning on Pt. San Pedro Road, the experience of almost anyone who drives on Pt. San Pedro Road is inconsistent with those representations.

- The EIR should consider the environmental impacts of the "Truckers' Management Plan."

- More generally, the EIR should not rely solely, or even primarily, on SRQQ representations of their intent as to how the Quarry will be operated without accounting for SRQQ's past record relating to the particular representation.

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1 Alternatively, they may have allowed useful records to disintegrate if those records did not support their claims. Though we have no specific basis to make that assertion, at a minimum SRQQ would have had far less incentive to safeguard records that might set a low baseline number.
Apart from the baseline determination, the EIR should consider the impact of the use of these larger gravel trucks on road wear, noise levels for homes close to Pt. San Pedro Road, increased dust emissions and overall traffic flow.

C. Use of the Brick Resource Area for Disposal of Overburden

The Coalition asserted at the Scoping Hearing for the EIR on the Amended Reclamation Plan that the much of SRQ’s plant must be considered operations, not reclamation. For that reason, we direct you to the matters we raised in our November 28, 2003, scoping letter as if they were set forth fully herein. Of particular concern is the Quarry’s proposal to use the Brick Resource Area for disposal of overburden.

The Quarry’s proposals are depicted and labeled as such in the figure labeled “Existing Use Areas” attached to Basalt’s 1976 Reclamation Plan and in Fig. 4 of the Amended Reclamation Plan (1982). It is located north of the Main Pit/North Hill area at the northern end of the SRQ property. It is also adjacent to Cantara Way, the entry to McNear Beach County Park, and to the homes in the Marin Bay Park development that lie just north of Cantara Way, on a hillside overlooking it. SRQ has obtained that the Brick Resource Area was not used for disposal of overburden in 1982, when it became a non-conforming use. To the contrary, SRQ has admitted that the first year it placed excavated overburden material from rock quarrying activities for the Brick Resource Area was 1995. See Plaintiff’s Trial Exs. 52, 53 (Coalition Interrog. No. 19, SRQ Responses to Interrog. No. 19). SRQ has admitted that as part of its operations, it placed 136,742 tons of overburden in the Brick Resource Area in 2002 (the only year for which it supplied data) and placed 232,474 tons of washed fines in the Brick Resource Area between 1998 and 2002. See Plaintiff’s Trial Exs. 52, 53 (Coalition Interrog. No. 20, SRQ Responses to Interrog. No. 20). Brian Peer, the Quarry’s manager, testified in the 2004 trial that SRQ disposed of overburden in the northeast portion of the Brick Resource Area at that time. (Reporter’s Transcript at Oral trial at page 346, lines 14-18.) The Brick Resource Area differs from the Main Pit/North Hill and South Hill Areas in that Basalt’s intent was to use the adjacent camp area to extract rock in this area. Instead, indicated is the fact that the SRQ has not yet commenced this operation, and that the SRQ is using the Brick Resource Area as if it were a new quarry. Basalt’s intent is to use the Brick Resource Area as a disposal area.

As a result of these findings, Judge Stuto’s April 19, 2004 post-trial Order provides that:

"Defendant Quarry is enjoined from depositing any overburden, tailings, dredged material or other waste materials in the Brick Resource Area [the northeast quadrant] depicted in Figure 1 of the 1982 Amended Reclamation Plan."
Yet, draft ARP-04 now provides that the Quarry will place very large volumes of overburden and tailings "pond fines" in the brick resource area, despite the prohibition in the Court's Order and the severe noise, dust and visual impacts such activities have had on the Quarry's residential and County park neighbors in the past. SRQQ tries to justify this proposed violation of the Court Order and impacts on the neighbors by claiming the County has requested some interim restoration activities in the Brick Resource Area. However, the County's request is not an invitation to continue the illegal waste disposal activities of the past. In light of the Court's April 19, 2004 Order finding that SRQQ has no vested right to conduct waste disposal operations in the Brick Resource Area and that such past operations were illegal exemptions of SRQQ's non-conforming use, SRQQ's proposal to continue these waste disposal operations in ARP-04 is an illegal expansion of the SRQQ's use, a zoning violation, and a violation of the Court's April 19, 2004 Order.

SRQQ ignores this prohibition by dressing up its plan to continue its waste disposal activities in the Brick Resource Area as "interim reclamation." SRQQ's proposed recommencement of this expanded and illegal use of the Quarry property for continued waste disposal activities remain illegal, no matter how the Quarry characterizes it. The AQP must incorporate the Court's conclusion that, as a matter of law, SRQQ cannot use the Brick Resource Area for disposal of overburden or pond fines, and reject SRQQ's claim that such disposal is "reclamation." SRQQ never saved such materials for reclamation in 1982 or before, never disposed of them in the Brick Resource Area before, and should not be allowed now to dispose of over two million tons of such material in that area now, and to excavate and redeposit those materials later, all activities that will have severe and negative environmental impacts on surrounding residents and the environment.

The EIR should be prepared on the assumption that SRQQ's proposal to deposit overburden material in the Northeast Quadrant constitutes quarrying activity that is not permitted by Court order.

The IS says (page 33) that the SRQQ does not "intend" to produce pond fines in the future. To promote the vitality of this intent, production of pond fines should be prohibited under the AQP.

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* Site-wide, the Quarry estimates that the "phased reclamation process" will require the relocation of over 2 million tons of material. The Quarry also states that "[r]eclamation will continue over the remaining life of the Quarry.

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* The Quarry's proposed "reclamation" activities in the Brick Resource Area include "[r]emove and replace pond fines in the Brick Resource Area with a mix of pond fines and overburden from South Hill..."; "build new berm on the Brick Resource Area" to provide continuing raised and visual protection for nearby neighbors to the north, and "building a temporary berm along the north edge of the [Brick Resource Area]" which "will be of sufficient height and bulk to fully screen noise fences and views of, the quarry activities and facilities from neighbors to the north." This proposed extensive waste disposal activity is to occur on property directly adjacent to the residential and park neighbors to the north for the remaining life of the Quarry.

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D. Land Use and Planning

Consistency with County Wide Plan

The CWP generally reflects a heightened need to protect adjacent properties from impacts of active mining operations, and specifically cites the Quarry as an example of a conflict between extraction activities and neighboring uses.

"In some areas of the County, quarry operations, including truck traffic and blasting, have resulted in substantial conflicts with nearby residential and recreational uses. Among examples of such impacts is [the] noise and truck traffic experienced by neighbors of the San Rafael Rock Quarry, which operates under a permit granted in 1972." (P. 3-104)

"When the need to extract material is not accompanied by appropriate protection of the environment and the health and safety of surrounding neighbors, such operations can create nuisances, hazards, or significant environmental impacts." (P. 3-105)

The EIR should discuss strategies to comply with relevant policies and programs in the new CWP (including, but not limited to, MIN-1, MIN-1A, programs MIN-1f, MIN-1i and MIN-1j).

Change in Surrounding Landscape and Resulting Incompatibility

The increased residential density and proximity of homes to the Quarry since approval of the 1972 permit and establishment of the 1982 baseline results in operations impacting more people more often. Many of the surrounding neighborhoods did not exist or were under development before 1982.

To build a picture of the change from then to the present, the EIR should describe the characteristics of the area surrounding the Quarry for a distance reasonably judged to be within range of view, sound, blast vibration, truck traffic and airborne pollution. This should include changes in the approximate number of housing units, recreational users of McNear's Beach and individuals dependent on Pt. San Pedro Road for access to homes and recreational destinations.

The EIR should examine cumulative impacts of the proposed project on the surrounding residential neighborhood and recreational areas, noting the difference in the number of households and users affected by operations in 1972 and the present, and comparing impacts of the prior permit on the same geographic area.

The continuing incompatibility of Quarry operations with nearby residential and recreational land uses, as stated in Impact 1.2, should be analyzed in depth.

Pages 121 and 122 of the IS notes the availability of sidewalks and the intention of adding bike paths on Pt. San Pedro Road under General Plan 2020 policies. Given that there are three schools in the area (San Rafael High, San Pedro Elementary and
Glenwood Elementary), and that our children are being encouraged to walk or bike to school, this is particularly important.

- The EIR should consider the impact of having multi-ton double trucks on the same road as bike riders and pedestrians, including the likelihood of rocks being thrown up from the roadway that could seriously injure a biker or pedestrian.

E. Air Quality

There is strong evidence that the SI has seriously underestimated health risks from air pollutants due to Quarry operations (including McNair's Brickyard). Also, we are concerned that some proposed mitigation measures should themselves be subject to analysis for impacts.

In 2004, Sonoma Technologies (STT), the County's air quality consultant, conducted air quality monitoring tests for PM-10 and PM-2.5 concentrations in the air close to the Quarry. These tests concluded that particulate matter concentrations in areas adjacent to the Quarry were least when the wind was coming from a direction other than the Quarry, suggesting that the air coming from the direction of the Quarry is actually cleaner than the air that comes from the opposite direction. STT also concluded that most Quarry activities result in no identifiable change in air quality to nearby residents, that average PM-10 and PM-2.5 daily and annual concentrations were well below federal significance thresholds, and that whatever pollution was measured was not likely attributable to the Quarry.

These findings are entirely inconsistent with the personal experience of those who live adjacent to the Quarry. Residents near the Quarry have long complained about the copious amounts of dust that blanket their patios, window sills and foliage as a direct result of Quarry blasting activities. During July 2006 through December 2006, data submitted to Judge Stuart by the County contained some 246 complaints submitted by residents of the Pt. San Pedro Road corridor describing the negative impacts of Quarry operations on their lives. A high percentage of those complaints related to dust. That the air coming from the Quarry is cleaner than the air coming from the opposite direction is not a plausible factual finding to nearby residents who see firsthand, in and around their homes, the fine gray cement-like powder that is almost certainly produced by Quarry operations.

At least three sampling episodes funded by the Marin Bay Park Homeowners’ Association conducted over the past decade or so have consistently found potentially dangerous amounts of crystalline silica deposited on and about homes in the general vicinity of the Quarry. The first sample, funded by several concerned residents, collected samples of the gray dust that is common around area homes and had the sample analyzed. The conclusion reached in the analytical report by Slakey, an independent consultant, was that the dust contained high amounts of respirable crystalline silica. A 2001 County-funded study by Onsite Environmental Labs found that silica exposure exceeded acceptable daily and annual thresholds for two principal testing stations downwind of the Quarry. Finally, the SI cites a study performed in early 2007 by a concerned neighbor (Rod Warters) that, consistent with the prior two sampling episodes, found high concentrations of respirable crystalline silica in samples taken from several disparate locations close to the Quarry.

The results of the Warters study, along with background academic literature for context, were presented in some detail to County officials. These studies are inconsistent with STT’s conclusions that the Quarry produces no significant amounts of PM-10 and PM-2.5 (such as respirable crystalline silica) and its inference that air coming from the direction of the Quarry is less polluted than air coming from other directions.

Though the SI identifies PM emissions as a significant impact, the SI does not mention the potential health dangers of ultrafine particles ("ultrafine"), which are very small particles of airborne soot that are routinely emitted by diesel engines. Ultrafine have been implicated in cancer, heart attack and stroke (initiating and worsening atherosclerosis), narrowing of the airways (contributing to chronic obstructive pulmonary disease or COPD, and asthma) and otherwise altering the chemistry inside cells and precipitating medical problems. There have been reports that damaged lungs retain a higher proportion of ultrafine than healthy lungs, and that retaining more ultrafine causes more lung damage.

- The EIR should examine the cumulative impacts (over the 30-year life projected by SRQ) from all pollutants resulting from Quarry and brickyard operations that impact the health of humans and wildlife, and damage property or create a nuisance for residents. For example, the EIR should examine dust emitted directly from the Quarry site and dust that's stirred up from trucks exiting the Quarry that settles in driveways and yards all along Pt. San Pedro Road. These could include toxic air contaminants and volatile organic compounds. Whether from stationary or moving sources, and with PM-10 and PM-2.5 concentrations, ultrafine should also be studied. The EIR should report on the impacts at locations near the Quarry, along Pt. San Pedro Road, and in the highly congested downtown area where traffic often疏导 through several traffic light cycles.

Affected residents must have confidence that the air they breathe today will not cause themselves and their children serious and possibly fatal heath consequences in the future.

- The EIR should perform extensive air quality testing to either rebut or corroborate, conclusively, the three studies cited above suggesting the existence of dangerous amounts of crystalline silica in the environment surrounding SRQ. That testing should test the air and, separately, the dust itself that has already been deposited on area property.

Given the very high likelihood that respirable crystalline silica is produced by the Quarry, it is indefensible to rely on one non-existent study against the negative conclusions of three, and equally indefensible to refuse to test previously-settled dust that abounds in air around the homes and parks close to the Quarry on the grounds that its source might not be the Quarry. (The County should be concerned about the existence of previously-deposited respirable silica regardless of its source. The unlikely possibility that it might not have come from the Quarry in an irrelevant reason to avoid testing it.)

- Emissions analysis should include emissions from truck traffic to and from the Quarry as part of operations.
Regardless of the absolute measurements of PM material in the air at any one time, the EIR should consider the propensity of PM material to concentrate over time within peoples homes, such as their carpets, bedding and drapes.

Separate from the EIR, the County should determine whether residents should be advised to filter the air within their homes, upgrade their vacuum cleaners and discourage small children from crawling around on carpeting that contains small-particle respirable silica.

The EIR should describe outdoor activities that take place within range of airborne pollution from the Quarry and trucks coming and going from the Quarry, including neighbors’ use of their patios and decks.

Perhaps at one time, due to work patterns, people concentrated all-home activities on the weekend. But census and anecdotal experience portray a changing work climate with a growing number of people working from their homes.

The EIR should discuss whether weekday and weekends should be viewed differently for purposes of planning operations. For example, to what extent are there fewer people at home, other working indoors or taking part in outdoor activity, during the week as opposed to the weekend?

Because of the potentially profound consequences that respirable silica production can have on human beings over time, the testing that we urge above must reflect the conditions that will exist when the Quarry will operate at its maximum dust-producing output under weather conditions that exacerbate the risk to residents. Any current test results should be evaluated in context with the results of prior tests. For example, do negative (benign) current test results reflect safe operations, or do they reflect temporary reduced Quarry activity of the type that produces dust, or seasonal conditions that are favorable to negative testing results?

SRRQ proposes to create a new haul road on the south rim of the main pit, which will presumably be used by heavy vehicles transporting mined material around the mine site. (Initial Study, page 28.) This elevated road will likely create additional dust to be blown from the site onto nearby residential properties.

The EIR should review the court case records and the ongoing complaints submitted to the County regarding complaints by neighbors regarding dust impacts.

The County should determine whether the likely increase in dust blown into residential neighborhoods from vehicles on the new haul road could be mitigated. For example, the 25 mph wind threshold above which some quarrying operations are suspended might need to be reduced and extended to use of the haul road.

The EIR should examine the cumulative effects of exposure by residents and persons using recreational areas of the listed TACs and DPM emissions (including ultrafines) over the proposed extended operation. Air pollutants have different impacts on respiratory systems depending on a person’s activity level and this should be discussed in light of recreational activities that take place within range of the Quarry, including many weekday events.

The difference in impact due to the increase in resident population near the Quarry from 1972/82 to the present should also be discussed. How many more homes and people are within one-half mile of SRRQ, and much more intense will the effects of SRRQ operations be felt by those individuals over others who live in the Pt. San Pedro Road corridor?

The health risk assessment of long-term exposure to DPM emissions that was not conducted as a part of the monitoring study should be performed. This could include local elementary schools and the immediate community’s large number of elderly residents.

IS Mitigation Measure 5.1b suggests strategies for reducing airborne dust by watering, sweeping and use of dust suppressants to keep materials on the ground. Would there be impacts on adjacent wetlands or other properties from these materials? These measures were largely in effect when prior dust studies were performed, and those studies still measured dangerous levels of silica. Why will they be effective in the future?

The EIR should consider the feasibility of continuous air monitoring of PM-10 and PM-2.5 material with an extremely low, or no, tolerance for excess emissions. Penalties for exceeding safe limits should be sufficiently high to discourage violations (e.g., the closure of the facility).

As the IS already notes, cumulative emission impacts should include increases at outlying facilities in Petaluma and affected populations away from the immediate neighborhood.

The EIR should study the impact of reducing dust if all of the trucks were tarped. The feasibility of requiring SRRQ to contract only with haulers who agree to tarp their trucks should be considered.

### Biological Resources

The draft 2007 CWP establishes setbacks for the Baylands Corridor, and states the following at BIO-5.1:

**BIO-5.1.** "For large parcels (over 2 acres in size) adhere to development setback standards for areas qualifying for protection under the WCA and SCA, but increase setback distances as necessary to ensure that hydrologically isolated features such as seasonal wetlands and freshwater marsh are adequately linked to permanently protected habitat. These additional development setbacks shall serve to prevent fragmentation and preserve essential upland buffers in the Baylands Corridor."

It also suggests broadened protections as follows:

Page 2-42. GOAL BIO-5. "Where applicable for large parcels (more than two acres in size) which are primarily undeveloped and, based upon site specific characteristics, an additional area of 300 feet or more of associated habitat is included..."

The EIR should discuss how the proposed operations would conform to the setbacks established for the Baylands Corridor in the draft 2007 CWP.
The IS notes that residential development since the last permit approval has reduced the buffer between the Quarry and adjacent uses.

- The EIR should examine what buffers would be needed to protect sensitive environmental resources such as wetlands and the adjacent marine habitat (for example, the 300 foot buffer recommended in the Habitat Goals Report).

The IS, at page 54, concludes that the AQP is consistent with designating NWQ marshland as a Bayfront Conservation zone because the AQP does not contemplate diking, filling or dredging of tidalflats. However, the IS later discusses (at page 108) how the proposal to eliminate prohibition limitations will likely result in additional tons of particulate material being released into the air each year. Some of that material will end up in the marshland, and will have diking and filling effects.

The IS should rely on the Cowardin definition of wetlands as this would meet the requirements of all agencies with jurisdiction.

- The EIR should evaluate the extent to which the proposed additional quarrying activity will cause particulate matter to settle in adjacent marshlands, whether that will have a diking and filling effect, and whether those effects can be mitigated to cause the project to be consistent with NWQ’s designation as a Bayfront Conservation Zone.

- The EIR should consider impacts of the mining and barge operations, including blasting, vehicle fluids, and airborne particles on marine life as well as the bird and terrestrial populations, and should comment on any effects on the Marin Islands National Wildlife Refuge.

- The EIR should determine whether dust from blasting, crushing and vehicle traffic contains water-soluble salts having the potential to pollute runoff or alter the chemistry of wetland areas.

- The EIR should identify any of the following that could be found on the Quarry site, using CDFG/USFWS protocol surveys: species listed, proposed for listing, or that are candidates under federal and state endangered species acts; species listed as fully protected under the California Fish and Game Code; species identified as those of Special Concern by the California Department of Fish and Game, including but not limited to the Red-Legged Frog, and birds protected under the Migratory Bird Treaty Act.

- The EIR should evaluate the mining and grading activity on South Hill relative to breeding and migrations of species.

- The EIR should inventory non-native species.

- The EIR should describe the impacts on the marsh, Bay and any wildlife habitats, of public access (including traffic to and from the Quarry and all internal operational traffic of the Quarry and the brickyard and their associated haul roads).

G. Barges

Barge operations and its impact on residents, wildlife and the county park are totally ignored in the IS, even though the proposal proposes to operate barges seven days a week, 7 a.m. to 10 p.m.

- The EIR should analyze the impact if all material going out of the Marin County were barged and only material headed for County destinations were trucked out.

- The EIR should discuss the best available management and mining and conveyance techniques to reduce the impact of barge traffic on the community and the environment.

- The EIR should review the court case records regarding complaints by neighbors regarding barge operations.

- The EIR should study whether appropriate loading techniques are being used in the barge process to ensure that waste material is not dumped into the Bay.

- There is a busy field used by the Quarry for field storing materials in barges in the middle of the bay. The EIR should study the impact on views related to these buoys and on the environment.

- The EIR should determine whether the machinery (including the conveyor belt and the barges themselves) employed to load barges can practically be enclosed or substantially shielded to mitigate dramatically the amount of dust and noise resulting from barge loading.

Relating to the comment directly above, the EIR should define how it applies "economic viability." In general, whether a particular modernizing and impact-mitigating capital expenditure is inappropriate because it reduces economic viability is a complex question. SRRQ routinely refuses to implement (or ignores) major proposals for impact-reducing improvements because they purport to be too expensive and generally reduce economic viability.

- The EIR should evaluate proposed substantial impact-mitigating improvements in its broad context, considering such factors as (i) the proposal’s annualized depreciable cost over its useful life relative to the scope of the SRRQ operation, (ii) the likely effectiveness of the proposal and (iii) the success of similar proposals (adjusted for scale) implemented by similarly-situated quarries throughout the world.

For example, SRRQ has shown no interest in even investigating the practicability of enclosing most or all of the barge operation, generally suggesting that it would be too expensive. The EIR should assume that the proposal’s cost is reasonable relative to the Quarry operation unless SRRQ can prove otherwise. If SRRQ makes an assertion about economic unviability that it claims is based on information that is confidential or proprietary, the County should deem the assertion as unsupported by the facts.
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H. Hours of Operation

The IS states that SRRO is requesting an estimated 3,350 hours per year, with an additional 4,695 hours per year of barging. In effect, SRRO is seeking to become a seven-day-per-week operation, which is profoundly alarming to nearby residents.

- The EIR should compare the proposed operating hours with the operation of other quarries that are located inside a residential neighborhood along with the 1982 baseline.
- The EIR should evaluate the proposed expansion of hours on all significant effects discussed in this letter, including traffic, noise, dust, blasting and related environmental impacts.
- The EIR should review the formal comments made by nearby residents of other urban quarries in connection with those quarries’ EIRs to determine what issues and problems were raised relating to operating hours, and what other problems might be going unaddressed with this EIR out of inadvertence.

I. Blasting

The IS bas its conclusions regarding mitigation of blast effects on a report prepared by Revey Associates in January 2007. That report is little more than a theoretical discussion of blast effects. It does not properly evaluate numerous neighbors’ complaints lodged over many years as to the effect on their lives of heavy-duty shaking/damaging of their homes by Quarry blasts. SRRO over the past several years has settled numerous claims lodged by nearby neighbors related to damage to structures and contents of their homes.

- The EIR should discuss what might reduce the shock nearby homeowners receive when their structures are hit by a Quarry blast.
- The EIR should review the court case records and the ongoing complaints submitted to the County regarding complaints by neighbors regarding blasting operations.

There is no serious evaluation in the IS of alternative blasting protocols such as reduced charges per delay, electronic detonation, pre-splitting and rock fracturing using explosive materials instead of explosives. The current protocol is accepted as sufficient.

- The EIR should evaluate other blasting protocols with a view to achieving the “barely perceptible” standard that the IS prescribes but that the Quarry plainly does not meet.

In Section 2.4 (page 9) of Appendix B of the IS (Blasting Impacts Assessment for SRRO), Revey uses Figure 2.6 to demonstrate that all Quarry blasts fall in the “barely perceptible” range for nearby residences. No hard data measurements are provided to support this conclusion, nor is there any consideration of variations from the theoretical scheme in geologic conditions (rock and soil types) or construction methods used in residences surrounding the Quarry. The measurements evaluated are all on ground surface instruments and converted to the perceptibility chart for humans by a formula developed in 1977. No measurements were made with seismographs attached to the foundations of structures nor were humans present in structures to report on “annoyance levels.”

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The current trend is that the number of blasts is increasing. In 2005 there were 52 blasts, in 2006 106 blasts and in the first five months of 2007 there were 51 blasts. The problem is intensifying and increasing for the neighborhood (source of data is County website) and there is no indication of any mitigation on the increased blasting in the IS.

- The EIR should study cumulative effects, including health effects, on residents using standards contained in ANSI S3.29-198 and ISO Standard 2631, which provide criteria especially relevant to human response to vibrations.
- Section 2.6 of Appendix B (Effects of Environmental Factors versus Blast Vibration) contains a theoretical discussion of craft monitoring indicating that environmental factors will have a greater impact on residence damage than the Quarry blasts. There is no discussion or measure of the cumulative structural effects of blasting by the Quarry over the proposed extension of its life by several decades. For example, the effects of blast on the double-paned windows required in many of the nearby residences and the rates of failure experienced in these windows should be examined.

- Blasts should be measured using seismographs attached to the foundations of structures in homes on a varying range of soil types within range of vibration. Related, the EIR should examine how the various ground compositions influence cumulative impacts from blasting vibration and noise on homes and residents.

During July 2006 through December 2006, data submitted to Judge Satro by the County contained some 246 complaints submitted by residents of the Pt. San Pedro Road corridor describing the negative impacts of Quarry operations on their lives. Of these complaints, 99 or 41% contained complaints about blasts. In addition, in late 2006, the Coalition surveyed residents of the Quarry area about impacts from Quarry operations. Blasting and dust were the major issues mentioned.

- The EIR must conduct an independent analysis of blasting effects on residences and must conduct tests in structures with humans present to determine an acceptable blast level (1982 standard). We suggest that tests be conducted in the pit on the north wall at various depths with delay loading of varying levels of explosives.

Floyd (SRRO’s blasting consultant) pointed out in his study for the SRRO that the prime variable in reducing blast effects is the charge per delay.

- The EIR should establish the proper level of explosive charge per delay by scientific field tests conducted fairly to show what charge intensity will result in a finding of “barely perceptible” in nearby structures. The test should be related to activities in the main pit.

- The complaint record must be considered and analyzed as part of the EIR. Also, factors such as shear wave variations, rock types encountered, structural characteristics of surrounding homes and the geographic range of the area where the complaints are originating should be considered.

The IS accepts the recommendations in Mitigation Measure 10.3 on page 179 (copied from the Revev Associates report, page 23) with no proof that they would result in a

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reduction in the effects felt by neighbors of Quarry blasting. A following paragraph states that "the level of continuing impact may be considered below the threshold of significance," while also admitting that "it is likely...that such [disturbing] effects will continue." There is no supporting evidence that the continuing impact will remain, or has consistently ever been, below the threshold of significance.

SRRQ proposes to "provide 36 hours advance notification of blasting to local residents and the County of Marin by posting the date and approximate time of scheduled blasts on a website" (p. 32 of IS). Web posting does not assure that neighbors are notified, since not all neighbors own a computer, have Internet access, nor constantly monitor SRRQ's website.

- The EIR should discuss supplemental notice procedures that would assure more effective notification to neighbors.

J. Noise

Noise is an obvious problem with the Quarry, and many of the comments made elsewhere in this letter relating to environmental issues include noise as one of its elements.

The 1982 Salter report, which helped to determine the baseline conditions, took 15-minute noise measurements to conclude that noise levels at the selected San Marino homes were 44 to 60 dBA, Leq. However, the ESA monitoring in 2006, used to establish existing conditions, measured noise at a Marin Bay Park Court residence over 24-hour periods to arrive at the 52 to 55 dBA Ldn. The use of Ldn measurements over 24-hour periods does not adequately assess the impact of noise from the Quarry on surrounding residences because it is an average of a long period. Why wasn't the same system of 15-minute noise measurements used to describe current conditions?

- Noise from Quarry trucks passing through San Rafael should be analyzed for compliance with the San Rafael Noise Ordinance.
- The EIR should study the truck noise at 25 mph instead of the posted 35 mph to determine if the noise can be significantly reduced.
- The EIR should study whether rubberizing the roadway would significantly mitigate noise levels.
- Since a high percentage of shipped material goes to SRRQ plants in Richmond and Petaluma, the EIR should study the impact on the community if these loads were shipped by barge instead of trucks.
- The EIR should consider enclosures as much of the noise-producing Quarry operation (in particular, the barge operation and the crushers) as is possible. This would mitigate other environmental effects as well, such as dust production.
- The EIR should review whether SRRQ can employ far more modern and state-of-the-art equipment that makes less noise.
- Given the pervasiveness of noise as a typical problem associated with quarries, the EIR should discuss how other quarries have reduced noise levels, and comment on the feasibility of employing successful noise-reducing strategies to the Quarry.
- The EIR should review the court case records and the ongoing complaints submitted to the County regarding complaints by neighbors regarding noise impacts.

K. Aesthetics/Visual Resources

The IS deals inadequately with buffers, which are a major tool suggested for reducing visual and noise impacts. The IS notes, in a footnote on page 33, that SRRQ proposes construction of a berm on the north end of the property in the Northeast Quadrant. The proposed berm would be 175 feet high within about 100 feet of the property line and would take in two million tons of dirt over 17 years. Although the berm is part of the proposed Amended Reclamation Plan, it is clearly an operational issue.

- The EIR should analyze the visual impact of a new berm as well as the noise and air quality effects of its construction over 17 years.
- The EIR should study the view impact of barges and the unsightly industrial-looking machinery that dominates the southeastern water-border of the Quarry site.

L. Project Alternative

A project alternative should be evaluated that allows for no expansion of impacts over the 1982 baseline. We ask that the County consider an alternative operation that includes at least the following features:

1. Noise
   a) Reduce noise at source by enclosing crushing operations, barge loading, and all other operations that can be enclosed.
   b) Quarry must use modern, improved equipment to decrease noise, similar to that used by state-of-the-art quarry operations, and suitable for a quarry situated in close proximity to residential areas.
   c) Noise measured in decibels at nearest property receptor, based on hourly average with limits per San Rafael noise ordinance, 50 dBA daytime (7 a.m. to 7 p.m.) and 40 dBA nighttime (5 p.m. to 7 a.m.) with recognition of effect of tonal quality and consistency of noise.

2. Blasting
   a) Blasting controls that limit the charge of explosive per delay to 200 lbs; use of electronic detonator and delay system.
   b) Require pre-fracturing of blasts and limit number and diameter or blasting bore holes.
   c) Blasting time limited to weekdays 11:30 a.m. to 1:30 p.m., with at least a 36 hour notice posted on the Quarry website.
3. Transportation and Circulation
   a) Baseline for transportation (as per the Gilroy testimony that the vast majority should be shipped by barge) to be defined as at least 75% by barge. The EIR should deem 368,250 tons of products per year from the SRQQ as the baseline amount of truck traffic and evaluate the environmental impacts of the Quarry’s current and proposed use in comparison to that level of trucking.
   b) Gates and access for trucks, contractors and other non-employee traffic may open no earlier than 7 a.m.
   c) Materials may be only transported out of the Quarry by truck for delivery to Marin County projects and only on the day of delivery. All other material to be shipped by barge.
   d) Trucks of 10 or more tons driving on Pt. San Pedro Road travel no more than 25 mph (to be enforced by contract, if not by statute or ordinance).
   e) Trucks leaving the Quarry shall leave at no less than 5 minute intervals during operating hours.
   f) Quarry must substantially increase its commitment to supply resources and materials annually for the ongoing repair and maintenance of Pt. San Pedro Road in both the City and County. This should include a financial commitment to fund rubberizing the road to mitigate noise impacts.

4. Dust and Air Quality
   a) All loaded trucks must be tarped (to be enforced by contract, if not by statute or ordinance).
   b) Trucks leaving the Quarry must first be washed down.
   c) Quarry must use best practices to minimize diesel emissions and dust (PM-10 and PM2.5).
   d) Quarry must use a state-of-the-art vacuum sweeper on Pt. San Pedro Road at least twice per day during operating days.
   e) The Quarry must cease all operations that increase air pollution, including but not limited to blasting, on declared “Spa the Air Days.”

5. Light Pollution
   The Quarry must propose a plan to reduce light pollution from all Quarry activities that require lighting, including security lights.

6. Hours of Operation
   a) No Quarry operations, including maintenance and barge loading, shall take place on weekends or State and Federal holidays, unless for a declared emergency. Emergency operations, and associated quarrying work conditions must receive prior approval from the County of Marin.
   b) All Operations are limited to 7 a.m. to 5 p.m., except administrative office hours.

7. Operating Permit Renewal
   a) Each year Quarry must submit a compliance report, to be certified by the County, ensuring that Quarry operations comply with the permit conditions.
   b) The operating permit should be reviewed every two years to account for changes in mining technology, evolving health standards and problems that might arise under the existing operating conditions.
   c) County has authority to amend the operating permit at any time in its sole discretion if deemed appropriate.
   d) This operating permit will expire in 4 years.

8. If the cumulative effects of all the negative impacts of the SRQQ project cannot be adequately mitigated, then the SRQQ operation should cease.

Thank you for your consideration of these comments.

Sincerely,

Denise M. Lucy
Co-President

Bennie Marmor
Co-President
Comment Letter 30: Point San Pedro Road Coalition  
(Letter of April 14, 2008)

30-1 This comment is preamble, and therefore does not require a separate response.

30-2 Please refer to Impact C4.6-7 in Section 4.6, Land Use and Planning. This impact addresses land use incompatibility. Oversight responsibility for mitigation measures stated in the EIR are shown in the sections titled, “Mitigation Monitoring and Reporting.” Contemplation of penalties for violation of terms and conditions of Quarry operations are beyond the scope of the EIR.

30-3 Health risk impacts are discussed in detail in Section 4.2, Air Quality. See also Master Response 5 in Section 7.2 of this document, and also individual responses to comments below. Where significant impacts are identified, feasible mitigation measures are provided to reduce the severity of the impacts, and the resulting level of significance stated. The only significant unavoidable health risk impact identified in the Draft EIR is Impact C4.2-12, which describes the cumulative effects of past, present, and foreseeable future impacts of toxic air contaminant emissions from the Quarry. Note that the great majority of the health risk is associated with past operations. Chapter 6, Alternatives, also provides several alternatives to the project that could reduce emissions further. See Master Response 4 in Section 7.2 of this document. Note that crystalline silica exposure is not expected to exceed threshold values, and is therefore not identified as a significant impact in the Draft EIR.

30-4 Mitigation Measure C4.3-18b in Section 4.3, Biological Resources, requires the Quarry to prepare and implement a Tidal Marsh Restoration Plan prior to the end of Phase 1 reclamation. See Master Response 10 in Section 7.2 of this document for more detail on this mitigation measure. The applicant’s proposed Amended Reclamation Plan does include a planned beneficial end use; see Chapter 3, Project Description (section 3.4.6, Post-Reclamation Use of the Site). See also the description of the alternatives to the Amended Reclamation Plan contained in Chapter 6, Alternatives.

30-5 New information on the project is discussed in Master Response 1 in Section 7.2 of this document. Since the applicant now proposes to stagger reclamation and operations, impacts will be reduced in comparison to those described in the Draft EIR. Therefore, recirculation will not be required. See the CEQA Guidelines §15088.5

30-6 This comment is preamble to Dr. Damian’s comments, and does not require a separate response.

30-7 The AERMOD and HARP model input and output files, along with emission calculation datasheets were provided to Dr. Damian for review in March of 2008. For ease of interpretation, the results, including several tables and figures, are provided in Section 4.2, Air Quality. For incremental cancer risk, these data included contour maps (Figure 4.2-4),
table of the cancer risk contribution by source type (Table 4.2-16), and contour maps showing health risks with incorporation of mitigation measures (Figure 4.2-5) and for cumulative exposure (Figure 4.2-8). For chronic health impacts, Section 4.2, Air Quality includes a contour map (Figure 4.2-6) and a table showing contribution by source type (Table 4.2-17). For acute health impacts, Section 4.2, Air Quality includes a contour map (Figure 4.2-7). As explained in Impact C4.2-11, acute health impacts would be largely due to hydrogen sulfide emissions from the asphalt processing, and would be less than significant.

30-8 In accordance with California Office of Environmental Health Hazard Assessment guidelines (OEHHA), the HRA was accomplished by applying the highest estimated pollutant concentrations (including DPM and crystalline silica) at the receptors analyzed to the established cancer risk estimates and acceptable reference concentrations (RfC) for non-cancer health effects. The HRA for this project utilized CARB Hotspot Analysis and Reporting Program (HARP) to determine the cancer risks and non-cancer health effects. Within HARP, the cancer risk is estimated by utilizing the cancer potency factor in milligrams per kilogram of body weight per day (mg/kg-day), the annual average concentration in micrograms per cubic meter ($\mu g/m^3$), and the lifetime exposure adjustment. For DPM, the cancer potency factor is 1.1 mg/kg-day.

For the Hazard Index the relationship for the non-cancer health effects is given by the annual concentration ($\mu g/m^3$) and the Reference Exposure Level ($\mu g/m^3$). The chronic reference exposure level for DPM was established by the California OEHHA as 5 $\mu g/m^3$. The chronic reference exposure level for crystalline silica was established by the California OEHHA as 3 $\mu g/m^3$. For the other pollutants included in the analysis, OEHHA established values were also used.

30-9 The chronic health impacts of crystalline silica are based on an annual average concentration, but the analysis uses an entire year of hourly meteorological data. In this manner, the annual concentration accounts for seasonal wind patterns and surface conditions. The AERMET model, which is used to develop the hourly meteorological data base from two stations, accounts for the surface conditions which occur within several wind sectors (in this case, accounting for differences in surface albedo, Bowen Ratio, and surface roughness) every 45 degrees, for the variation between the water surface and grassland surrounding the proposed project. These parameters also allow for seasonal adjustments due to moisture content.

30-10 Please see the response to comment 23-18 regarding the Onsite study.

30-11 This comment supports the approach to the evaluation of cumulative health risks presented in the Draft EIR.

30-12 Figure 4.2-1 in Section 4.2, Air Quality, includes the windrose for the two meteorological stations used in the health risk assessment. They indicate that the predominant wind directions are from the south, south-southeast, and southwest, and less frequently from
the north and northwest. Wind direction is customarily expressed as the direction from which the wind blows. Thus a southerly wind blows from the south and toward the north.

30-13 The following is from page 4.2-17 of the Draft EIR:

The toxicity of crystalline silica has been studied over several years, and questions have arisen about the health outcomes from exposure to crystalline silica. The California Office of Health Hazard Assessment (OEHHA) has published a report that summarizes the toxicity of respirable crystalline silica from chronic exposure to the substance (OEHHA, 2005). The OEHHA report states that inhalation of crystalline silica initially causes respiratory irritation and an inflammatory reaction in the lungs. Chronic exposure can lead to deterioration of lung tissue. High levels of respirable crystalline silica, as have been experienced in certain work environments, have led to silicosis, which is a form of lung disease usually associated with occupational exposure to silica dust over a number of years. Silicosis causes slowly progressive fibrosis of the lungs and impairment of lung function.

The possible carcinogenicity of crystalline silica dust became a subject of considerable debate in the scientific community in the 1980s and 90s, and several epidemiological studies examined the association of lung cancer with exposure to crystalline silica (Gunel, et al, 1989, Costello et al, 1995, and Dong et al, 1995). These studies generally found a link to cancer for workers who already had severe cases of silicosis. As a result, the National Institute for Occupational Safety and Health (NIOSH) declared crystalline silica to be a human carcinogen (NIOSH, 2002).

Another report (de Klerk and Musk, 1998) studied 2,297 surface and underground gold miners and found that lung cancer mortality was related to total cumulative silica dust exposure after adjustment for smoking and for the presence of bronchitis. However, the effect of cumulative silica dust exposure on lung cancer mortality was not significant after adjustment for smoking, bronchitis, and compensation for silicosis. The results of this study do not support a relationship between lung cancer and silica exposure, in the absence of silicosis.

Since the OEHHA report analyzed health outcomes from environmental exposure to crystalline silica, it assumed that chronic levels of crystalline silica would not be great enough to result in the formation of silicosis. It thus concluded that, based on studies, such as the de Klerk study, there is no statistical evidence for the formation of cancer in the absence of silicosis. OEHHA established only a chronic non-carcinogenic relative exposure level (REL), and it did not establish a carcinogenic toxicity factor for the substance.

The EIR preparers reviewed the International Agency for Research on Cancer (IARC) – Summary and Evaluation of Silica, which was last updated in 1997 (IARC, 1997). IARC states that crystalline silica inhaled in the form of quartz or cristobalite from occupational
sources is carcinogenic to humans (Group 1); and that amorphous silica is not classifiable as to its carcinogenicity to humans (Group 3) (ibid). This assessment does not, however, comment on whether lung cancer from crystalline silica exposure occurs in the absence of silicosis; neither does it conclude that environmental exposure (as opposed to occupational exposure) to crystalline silica is associated with an increased risk of lung cancer; the one human study that IARC reviewed on subjects exposed to dust containing crystalline silica had no indication of the level of exposure; it showed an increase in the levels of sister chromatid exchange and chromosomal aberrations in peripheral blood lymphocytes (ibid).

Two more recent articles on this subject were reviewed for this response (Corbett, et al, 2005, Pelucci, et al, 2006). The Corbett article acknowledges a causal relationship between lung cancer and quartz exposure, but it does not address the issue of whether it is necessary for a person to acquire silicosis before contracting lung cancer. The second article, by Pelucci et al, provides a summary analysis of several papers that address the relationship between silicosis and lung cancer. The Pelucci paper concludes:

“The association with lung cancer was consistent for those with silicosis, but the data were limited for non-silicosis subjects…..The available data leave open the issue as to whether silica \textit{per se} materially increases lung cancer in absence of silicosis.”

Neither of these articles, nor IARC or any other agency or scientific source that the EIR preparers are aware of, nor the health risk assessment model that was used for the HRA conducted for this EIR, HARP (which is recommended by OEHHA for carrying out health risk assessments), establishes a cancer potency factor for crystalline silica. As noted above, OEHHA established only a chronic non-carcinogenic relative exposure level (REL) of 3 micrograms per cubic meter, averaged over a 1-year period, and it did not establish a carcinogenic toxicity factor for the substance. The logic behind this decision is that silicosis can be expected to occur before cancer, and that cancer will not occur until an individual has already developed silicosis. Therefore, the REL should be set to avoid the risk of silicosis (and other chronic, non-cancer diseases). Since silicosis does not always lead to cancer, but cancer is (statistically) preceded by silicosis, this standard is more protective than a cancer standard would be. Furthermore, the REL is based on a 1-year average exposure period, while cancer risk is based on 70-year average exposure, so again, the REL is more protective than a cancer potency factor would be.

With respect to long-term and cumulative exposure to crystalline silica, the chronic REL that was published by OEHHA was derived from observing health effects on workers exposed to crystalline silica for a period of 8 to 16 years. Based on this exposure period, OEHHA derived the chronic REL of 3 micrograms per cubic meter, averaged over one year. Therefore the REL accounts for long-term (cumulative) exposure. The Draft EIR analyzes a worst case condition for the projects by calculating the annual average concentration for the year of highest emissions and compares this value to the chronic REL established by OEHHA; even though the multi-year average exposure level from the projects would actually be lower. Therefore, long-term (cumulative) exposure is
accounted for, and its effects conservatively estimated (that is, the estimate represents a worst-case scenario), in the analysis; see more on the emissions assumptions used in the HRA in the response to comment 30-19, below.

30-14 OEHHA guidance provides for a chronic REL of 3.0 µg/m³; chronic exposure is defined by OEHHA as the one-year average exposure. The modeling conducted for the Draft EIR resulted in maximum modeled concentrations of crystalline silica of 1.68 µg/m³ for the annual period (located at a residence on Cantera Way just east of the intersection with Point San Pedro Road). Thus, the predicted annual concentration is well below the significance threshold. OEHHA does not provide significance thresholds for other averaging periods. The values reported in the commenter’s figures could not be derived from the Draft EIR dispersion modeling information or from any information provided within the comment.

The commenter cites a time-weighted average “threshold limit value” (TLV) established by the American Council of Government Industrial Hygienists (ACGIH) of 25 µg/m³ for a 30-day period, but does not provide a full citation for this standard; it appears in any event that this threshold is not appropriate for this health risk assessment, and in any event the maximum modeled 30-day concentration is well below this threshold. The federal Occupational Safety and Health Administration (OSHA) established a Permissible Exposure Limit for crystalline silica for an 8-hour period of 0.5 mg/m³ (or 500 µg/m³). Note that OEHHA has not identified a short-term or acute REL for crystalline silica. As such, the HRA addressed the chronic exposure to crystalline silica and not acute exposure.

4 The following is from the ACGIH website:

“Policy Statement on the Uses of TLVs® and BEIs®

“The Threshold Limit Values (TLVs®) and Biological Exposure Indices (BEIs®) are developed as guidelines to assist in the control of health hazards. These recommendations or guidelines are intended for use in the practice of industrial hygiene, to be interpreted and applied only by a person trained in this discipline. They are not developed for use as legal standards and ACGIH® does not advocate their use as such. However, it is recognized that in certain circumstances individuals or organizations may wish to make use of these recommendations or guidelines as a supplement to their occupational safety and health program. ACGIH® will not oppose their use in this manner, if the use of TLVs® and BEIs® in these instances will contribute to the overall improvement in worker protection. However, the user must recognize the constraints and limitations subject to their proper use and bear the responsibility for such use.

“The Introductions to the TLV®/BEI® Book and the TLV®/BEI® Documentation provide the philosophical and practical bases for the uses and limitations of the TLVs® and BEIs®. To extend those uses of the TLVs® and BEIs® to include other applications, such as use without the judgment of an industrial hygienist, application to a different population, development of new exposure/recovery time models, or new effect endpoints, stretches the reliability and even viability of the database for the TLV® or BEI® as evidenced by the individual Documentation.

“It is not appropriate for individuals or organizations to impose on the TLVs® or the BEIs® their concepts of what the TLVs® or BEIs® should be or how they should be applied or to transfer regulatory standards requirements to the TLVs® or BEIs®.”

(https://www.acgih.org/Products/tlvintro.htm )

Accessed September 17, 2008; emphasis (in italics) added.

5 OSHA sets enforceable permissible exposure limits (PELs) to protect workers against the health effects of exposure to hazardous substances.
30-15 As the Draft EIR states, the acute health impacts are primarily due to hydrogen sulfide (H$_2$S) emissions from the asphalt plant, which would not change as a result of the proposed project. Figure 4.2-7 shows that the greatest acute health hazard, which is, however, below the significance threshold, is isolated to recreational areas at McNear’s Beach County Park; the hazard index value at residences and schools is well beneath the significance threshold. Furthermore, the Marin County Public Works Department reports no odor complaints attributable to the H$_2$S emissions$^6$ in the vicinity of the Quarry, indicating that actual H$_2$S emission rates from the asphalt plant are likely much lower than those used in the HRA.$^7$ The combination of dispersion modeling with a tendency to provide conservative (i.e., high-end) estimates of concentrations; the Reference Exposure Limit, which includes a margin of safety; and conservative assumptions related to the emission rates, all lead to a worst-case estimate of exposure levels, to ensure that modeled health risks are not underestimated. Thus, the acute health impacts are considered less than significant, as stated in Impact C4.2-11 Section 4.2, Air Quality.

30-16 The Draft EIR recognized the differences between amorphous and crystalline silica with regard to health impacts (page 4.2-17 in Section 4.2, Air Quality). The HRA used a conservative (i.e., high-end) estimate of the crystalline silica content of fugitive dust derived from results of laboratory analysis of rock samples to ensure that modeled health risks are not underestimated. As shown in Table 4.2-8b in Section 4.2, Air Quality, sample results indicate crystalline silica content ranged from 40-65 percent, though the highest values were from materials stockpiles at McNear’s Brickyard, not from rock samples from the Quarry. Rock samples from the Quarry itself yielded values of 40-60 percent crystalline silica content; a conservative value of 56 percent was assumed for fugitive dust emissions from the Quarry (note that SRRQ’s own sampling and laboratory analysis, using another analytical method, resulted in substantially lower levels of crystalline silica; see comment 19-102). The combination of dispersion modeling with a tendency to over-predict concentrations; the Reference Exposure Limit, which includes a margin of safety; and conservative assumptions related to the emission rates (and in this case, crystalline silica content), all combine to ensure that the modeling results in a worst-case estimate of exposure.

30-17 Per OEHHA guidance, cancer risks are based on a 70-year exposure duration. In the case of the AQP, the project duration is 17 years. Thus, the cancer risks were based on 17 years of exposure to project operations over a 70-year lifetime. This approach is consistent with OEHHA guidance. Chronic and acute impacts were based on a maximum annual and 1-hour exposure, respectively, during the project operations.

The comment incorrectly states the crystalline silica emission rates used in the HRA. All emission rates for crystalline silica used in the HRA are contained in Appendix D,

$^6$ H$_2$S has a highly distinctive, highly disagreeable odor (“rotten egg” smell) at very low concentrations, below the level at which a significant acute health risk would occur.

$^7$ Emission rates used in the HRA for the asphalt plant are based on USEPA’s Compilation of Air Pollutant Emission Factors (AP-42).
Section C, and summarized in Table 30-17.1. For emissions from the aggregate plant, the maximum annual rate of 5,292 pounds per year was used (see Table C-3 of Appendix D, Section C). The HARP analysis used the 70-year average crystalline silica annual emission rate of 1,285 pounds per year to initially determine the chronic Hazard Index (HI). The chronic HI was then multiplied by 70/17 (or 4.2) to revert to the maximum annual emission rate of 5,292 pounds per year (since 1,285 pounds per year times 4.2 equals 5,292 pounds per year). The use of the 70-year average annual emission rate was for the convenience of the modeling exercise to limit the number of analyses and computations but does not affect the reported results.

| TABLE 30-17.1
<p>| PROPOSED PROJECTS – CRYSTALLINE SILICA EMISSION RATES USED IN THE HEALTH RISK ASSESSMENT (pounds per year) |</p>
<table>
<thead>
<tr>
<th>Emission Source</th>
<th>Maximum Annual</th>
<th>Appendix D, Attachment C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AQP Operations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aggregate Plant</td>
<td>5,292</td>
<td>Table C-3</td>
</tr>
<tr>
<td>Aggregate Processing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blasting</td>
<td>408</td>
<td>Table C-21</td>
</tr>
<tr>
<td>Unpaved Roads</td>
<td>13,770</td>
<td>Table C-21</td>
</tr>
<tr>
<td>Material Handling</td>
<td>1,630</td>
<td>Table C-21</td>
</tr>
<tr>
<td><strong>Total AQP Operations</strong></td>
<td><strong>21,100</strong></td>
<td></td>
</tr>
<tr>
<td><strong>ARP Reclamation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reclamation Phase 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unpaved Roads</td>
<td>4,313</td>
<td>Table C-23</td>
</tr>
<tr>
<td>Material Handling</td>
<td>98</td>
<td>Table C-23</td>
</tr>
<tr>
<td>Reclamation Phase 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unpaved Roads</td>
<td>4,639</td>
<td>Table C-24</td>
</tr>
<tr>
<td>Material Handling</td>
<td>105</td>
<td>Table C-24</td>
</tr>
<tr>
<td>Reclamation Phase 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unpaved Roads</td>
<td>5,891</td>
<td>Table C-25</td>
</tr>
<tr>
<td>Material Handling</td>
<td>134</td>
<td>Table C-25</td>
</tr>
<tr>
<td>Reclamation Phase 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unpaved Roads</td>
<td>8,953</td>
<td>Table C-26</td>
</tr>
<tr>
<td>Material Handling</td>
<td>203</td>
<td>Table C-26</td>
</tr>
<tr>
<td>Reclamation (Average of all four phases)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unpaved Roads</td>
<td>5,949</td>
<td></td>
</tr>
<tr>
<td>Material Handling</td>
<td>135</td>
<td></td>
</tr>
<tr>
<td><strong>ARP Reclamation Total</strong></td>
<td><strong>6,084</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Combined Total</strong></td>
<td><strong>27,184</strong></td>
<td></td>
</tr>
</tbody>
</table>

Importantly, the concentrations underlying the chronic hazard impact stated in Table 4.2-17 accurately reflect the result of modeling of annual emissions of crystalline silica using representative meteorological conditions and are consistent both with OEHHA guidance for chronic health impacts and with the conclusion of a less-than significant chronic health risk impact (Impact 4.2-10). See further discussion of assumptions used for crystalline silica emissions in the response to comment 30-19, below.
As stated elsewhere, OEHHA has not established a cancer potency factor for crystalline silica. To the knowledge of the EIR preparers, no other regulatory agency has established a cancer potency factor for crystalline silica. Therefore, only chronic health effects of crystalline silica exposure are evaluated in the EIR.

Appendix D in Volume III contains emission calculations, methodologies and assumptions related to crystalline silica from aggregate plant operations, aggregate processing (blasting, unpaved roads, and material handling), and reclamation activities (unpaved roads and material handling).

Section C of Appendix D in Volume III contains DPM emission calculations for off-road equipment, haul trucks, barges, and the reclamation phases, as well as emissions for other pollutants examined. The values used in the HRA for DPM are summarized in Table 30-18.1. The Final EIR provides supplemental information regarding emission calculations from haul trucks and off-road equipment. Table 30-18.1 presents the maximum annual and 70-year average annual emission rates used to determine the chronic impacts and cancer risks for DPM.

<table>
<thead>
<tr>
<th>Emission Source</th>
<th>Maximum Annual</th>
<th>70-Year Average Annual</th>
<th>Appendix D, Attachment C</th>
</tr>
</thead>
<tbody>
<tr>
<td>AQP Operations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Offroad Equipment</td>
<td>1,653</td>
<td>258</td>
<td>Table C-33</td>
</tr>
<tr>
<td>Haul Trucks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Along Quarry Route</td>
<td>55.9</td>
<td>1.4</td>
<td>Table C-29</td>
</tr>
<tr>
<td>Along Unpaved Route</td>
<td>25.8</td>
<td>4.0</td>
<td>Table C-29</td>
</tr>
<tr>
<td>Via Brickyard Road</td>
<td>9.0</td>
<td>1.4</td>
<td>Table C-29</td>
</tr>
<tr>
<td>Along Offsite Route 1</td>
<td>285</td>
<td>44.6</td>
<td>Table C-29</td>
</tr>
<tr>
<td>Barges 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maneuvering</td>
<td>345</td>
<td>83.7</td>
<td>Table C-17</td>
</tr>
<tr>
<td>Cruising</td>
<td>1,378</td>
<td>335</td>
<td>Table C-17</td>
</tr>
<tr>
<td>Total AQP Operations</td>
<td>3,751.7</td>
<td>728.1</td>
<td></td>
</tr>
<tr>
<td>ARP Reclamation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reclamation Phase 1</td>
<td>220</td>
<td>15.7</td>
<td>Table C-23</td>
</tr>
<tr>
<td>Reclamation Phase 2</td>
<td>186</td>
<td>13.3</td>
<td>Table C-24</td>
</tr>
<tr>
<td>Reclamation Phase 3</td>
<td>111</td>
<td>7.9</td>
<td>Table C-25</td>
</tr>
<tr>
<td>Reclamation Phase 4</td>
<td>54.8</td>
<td>3.9</td>
<td>Table C-26</td>
</tr>
<tr>
<td>ARP Reclamation (Average of Maximum Annual Emission Rates for each phase)</td>
<td>143</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARP Reclamation (Total of all four phases)</td>
<td>40.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combined Total</td>
<td>3,895</td>
<td>769</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1 Barge and haul truck emissions for the HRA are those which occur in the dispersion modeling domain only.
30-19 See response to comment 30-17 and 30-18 for the modeled emission rates for crystalline silica and DPM; see Tables 30-17.1 and 30-18.1 for the emission rates of these substances used in the modeling.

All emission sources operating within the proposed project were included in the HRA, including DPM emission from off-road equipment, haul trucks (both within the facility and along haul routes), barges, and the equipment used during reclamation activities; fugitive dust from aggregate plant operations, aggregate processing (blasting, unpaved roads, and material handling), and reclamation activities (unpaved roads and material handling). Additional sources of TACs include the asphalt plant, asphalt silo, and brick kiln. The portable aggregate plant and generator were included in the Air Quality Assessment but not the HRA, as these occur within the Bay Area air basin but not at the project site. Section C of Appendix D includes emission calculations for these emission sources.

When comparing the air emissions used for the analysis of criteria air pollutants (Impacts R4.2-1, R4.2-2, R4.2-4, P4.2-6, and C4.2-8) in Section 4.2, Air Quality with those used for the HRA in the same chapter (Impacts C4.2-9 through C4.2-12), several issues are of importance. Barge and haul truck emissions for the HRA are those which occur in the dispersion modeling domain only (within several miles of the facility in which receptors were analyzed). Barge and haul truck emissions for the criteria air pollutant assessment include the emissions which occur within the entire air basin. For acute impacts, the hourly emission rates were used. For chronic impacts, the maximum annual emission rates for operational (AQP) emissions were used. For reclamation emissions, the average of the maximum annual emission rate of each of the four phases was used.

It could be argued that the highest maximum annual rate from among the four reclamation periods (Phase 4 for crystalline silica emissions and Phase 1 for DPM emissions – see Tables 30-17.1 and 30-18.1) should have been selected as the input value for the chronic impact assessment, not the average, as was used. For the following reasons, the average is considered appropriate and adequately conservative:

- For crystalline silica, the average value used is higher than the value for 3 of the 4 reclamation phases (see Table 30-17.1);
- Reclamation grading will be limited to 8-10 weeks per year, and is likely to be further limited by the availability of equipment and logistical considerations; these constraints to some extent limit the potential for fugitive dust emissions from reclamation grading activities;
- The applicant has expressed their willingness to limit reclamation grading occurring simultaneously with mining operations, in order to avoid exceeding the daily threshold for criteria pollutants (see Master Response 1 in Section 7.2, and response to comment 2-3, above; see also new Mitigation Measure R4.2-1j in Section 4.2, Air Quality); this will also have the effect of reducing or offsetting
emissions of crystalline silica from Phase 4 reclamation grading that occur during the period that the Quarry is still operating, and also DPM emissions from all four phases of reclamation;

- Much of Phase 4 reclamation grading will occur after the cessation of mining, such that the total emissions of crystalline silica during this period will be much lower than the average used in the modeling, which also includes emissions from the mining operation;

- Due to the other conservative assumptions and tendencies in the modeling, as well as the considerations stated above, the overall assessment of chronic health risks is still considered conservative, in that health risks are not underestimated.

- Additional modeling conducted for this response concludes that, even if the higher (Phase 4 for crystalline silica and Phase 1 for DPM) emission rates were used instead of the average rates, the resulting Hazard Index would still be below the threshold value of >1.0.

As shown in Table 30-18.1, to determine cancer risks from DPM exposure, the 70-year average of 40.9 pounds per year from reclamation activities was added to the 728.1 pounds per year from mining operations for a total of 769 pounds per year of DPM emissions over the 70 year exposure period. The average annual emission rate of 143 pounds per year from reclamation grading was added to the maximum annual emission rate of 3,751.7 pounds per year from mining operations for a total of 3,895 pounds per year to determine the chronic impact for DPM.

As shown in Table 30-17.1, as a basis for determining the chronic effects of exposure to crystalline silica, the average annual emission rate of 6,084 pounds per year from reclamation grading was added to the maximum annual emission rate of 21,100 pounds per year for mining operations for a total of 37,184 pounds.

As stated above, the Draft EIR used the 70-year average annual emission rates to determine initially the chronic hazard index; these values were then multiplied by 4.2 (or 70/17: 70 year averaging period divided by 17 year actual exposure period) to calculate the hazard index for the annual emission rate, as described above. This was done for the convenience of the HRA modeling exercise, in order to limit the number of analyses and computations. This does not, however, affect the reported results: the reported results do not underestimate the chronic health risks of the projects.

30-20 The portable aggregate plant does not operate at the SRRQ facility. Thus, the equipment was not included in the HRA but nevertheless disclosed in the emission estimation. The portable aggregate facility has obtained (dated April 1, 2006) a CARB Statewide Portable Equipment Registration Program.

30-21 Annual particulate emission rates including crystalline silica, were derived based on the annual material throughput, not hourly emission rates. However, the maximum hourly
emission rates were used to determine acute health impacts for substances for which an REL has been established for acute exposure. Particulate emissions rates were determined based on accepted emission factors (in pounds of PM per ton of material processed; see Appendix D in Volume III) and the amount of material processed. In the case of the aggregate plant for the proposed AQP, these processing amounts are 1,200 tons per hour and 1,697,600 tons per year. It should be noted that the aggregate plant does not operate at the hourly rate of 1,200 tons for the entire year (365 days) nor for the entire day during those days when it does operate (approximately 260 days). For the acute analysis, the hourly emission rate was used. However, for the chronic and cancer risk calculations, the annual emission rate was used. Crystalline silica emission rates were assumed to be 56 percent (per soil sampling results) of the PM10 emission rate, as documented within Section C of Appendix D.

30-22 The assumption of six-wheel haul trucks is consistent with the Initial Study and the Reclamation Plan analysis. The haul trucks primarily used by the Quarry for off-road movement of materials are the Caterpillar 735 articulated truck. This is a very large dump truck with six wheels. Photographs of this vehicle and specifications are available at the Caterpillar website: http://www.cat.com/eda/layout?f=226809. The calculation of fugitive dust from vehicle travel on unpaved roads, shown on page 5 of Appendix D in the section titled “Unpaved Roads,” requires the mean number of wheels. Although there may be some 18-wheeled trucks operating on unpaved roads, these are not the typical off-road haul truck operating at the facility. The calculation of fugitive dust from unpaved roads also accounts for the vehicle weight, vehicle speed, roadway silt content and moisture content, frequency of measurable precipitation and control technologies such as periodic watering.

30-23 The portable generator does not operate at the SRRQ facility. Thus, the equipment was not included in the HRA but nevertheless disclosed in the emission estimations. The portable generator has obtained (date April 1, 2006) the necessary air quality permits from the BAAQMD.

30-24 The value of 24.7 in a million noted in the comment is for a recreational receptor at McNear’s Beach County Park. Cancer risks are not, however, reported for recreational receptors, since it is assumed they would not be exposed for a long enough period of time to enable calculation of a cancer risk. The HARP model outputs cancer risks for these receptors, but they are not reported nor used in the determination of impacts, per OEHHA guidance.

The reported HARP results for calculating cancer risks are for residential receptors (Section 4.2, Air Quality, Tables 4.2-15 and 4.2-16; Figures 4.2-4, 4.2-5, and 4.2-8). Secondary calculations were made for receptors including school children and teachers, off-site workers, and other sensitive receptors by accounting for differences in breathing rates and exposure durations. As provided, the HARP output assumes each receptor is a residential location. Where necessary, the HARP output was then adjusted to account for
locations where other types of receptors may be exposed to emissions, such as school children and teachers, off-site workers, and people recreating, by accounting for differences in breathing rates and exposure durations. For example, cancer risk analysis for school aged children assumes a higher breathing rate than for residents, but lower exposure duration (180 day school year for 9 years). These adjusted values were reported within the Draft EIR (Draft EIR Table 4.2-15 and 4.2-16; Figures 4.2-4, 4.2-5, and 4.2-8); regarding the breathing rates used, please see the responses to comments 2-10 and 19-100.

30-25 Emission multipliers within HARP are included when the AERMOD analysis includes an emission source which has emissions by hour of day, by day of the week, or seasonal emission factors. In the case of blasting operations, the operations do not occur 365 days per year nor do they occur 24 hours per day. As a worst-case estimate for the proposed project, blasting events were assumed to occur 180 days per year (one hour per event), thus, the applied multiplier was 8,760/180 or 48.7, where 8,760 is the number of hours per year. Other emission sources also applied HARP multipliers relative to their operating conditions.

30-26 We acknowledge the commenter’s agreement that the selection of the AERMOD model for modeling the dispersion of Quarry emissions is appropriate.

As described in the responses to comments 30-6 through 30-25, the HRA was correctly completed and is fully documented. These responses provide additional information and clarifications regarding the emission sources included in the analysis, their emission rates, and how they were used in the HRA.

Given the tendency for dispersion modeling analysis to over-predict concentrations, the REL and cancer potency factor, both of which include a margin of safety, and conservative assumptions related to the emission rates, the calculated health risks are conservative -- that is, they provide a worst-case estimate of the severity of the impacts. The results of the HRA are presented in a number of figures and tables which show the results within the area surrounding the proposed project and the contribution by emission source to each impact.

30-27 Please see response to comment 23-18 regarding the Onsite study.

30-28 The comment shows windroses from the two SRRQ meteorological monitoring stations. These data were included in the Draft EIR and used for the HRA.

30-29 The EIR preparers disagree with the figures presented in these tables, since they are based on incorrect assumptions regarding emission rates, and since they express data in units for which health risk standards for an HRA of this kind have not been established. Please see the responses to comments 30-8, 30-14, 30-17, 30-19, 30-20, 30-21, 30-22, and 30-23. As reported in the Draft EIR, the projects’ incremental cancer risks, chronic, and acute health impacts due to DPM, crystalline silica and other pollutants are all below
the significance thresholds, with the incorporation of mitigation measures specified in the Air Quality section. Only cumulative cancer risks from past operations in combination with predicted future emissions are deemed significant and unavoidable.

30-30 Please see responses to comments 30-17, 30-19, and 30-21.

30-31 Please see response to comment 30-13.

30-32 Under the AQP, the applicant proposes to continue blasting 2-3 times per week. For the air quality and health risk analyses, it was assumed that up to 180 blasts per year would occur. This is an average of over 3 times per week, so it is a conservative assumption. The PM10 emissions from blasting are estimated at 4 pounds per blast and the crystalline silica emissions from blasting are estimated at 2.3 pounds per blast. The emission calculations are based on USEPA AP-42 Section 11.9 as documented in the Draft EIR. The crystalline silica content is assumed to be 56 percent, a conservatively high estimate based on samples of rock from the Quarry. An assumption of lower crystalline silica content, based on the range cited by the commenter (a range of 25.4 to 29.1 percent) would result in lower crystalline silica emissions per blast.

As reported in Section 4.2, Air Quality, STI (2004) conducted an extensive study of ambient air quality downwind of the Quarry. Several conclusions from the study are discussed in the Draft EIR. Of note, the 24-hour and annual PM2.5 concentrations during the monitoring programs were well below the state and federal ambient air quality standards. Sampling was conducted between April and June of 2005, not during the period of October to February (rainy season), as noted by the commenter. Analysis of filter samples collected on 15 days during this period resulted in no detection of crystalline silica (detection limit was greater than 0.5 micrograms per cubic meter).

30-33 Please see response to comments 30-13 and 30-29.

30-34 The commenter recommends ambient monitoring of crystalline silica over a 1-2 month period during the dry season and a health risk assessment conducted using AERMOD, local meteorological data, and using standard toxicity factors (specifically OEHHA REL). As presented in the Draft EIR, several months of ambient monitoring of particulate matter at two locations near SRRQ was conducted in 2004. The study included filter sampling and analysis for metals, as well as crystalline silica and amorphous silica. The following is from page 4.2-19 of the Draft EIR:

Concentrations of crystalline silica were analyzed in 15 of the PM-10 filters collected in 2004 as a part of the County-sponsored air quality study. Detectable quantities (greater than 0.5 micrograms per cubic meter) of crystalline silica were not found in any of the fifteen filters tested [note that the REL is 3.0 micrograms per cubic meter, averaged over a 1-year period]. Concentrations of amorphous silica were also analyzed in the 15 PM-10 filters collected in 2004. Only one of the 15 samples contained amorphous silica in excess of the detection limit, at a concentration of 0.6
micrograms per cubic meter, which is well below the federal relative exposure level (REL) for amorphous silica of 6,000 micrograms per cubic meter.

The results of this study support the conclusions of the HRA: that dispersion of crystalline silica emissions from the Quarry do not exceed the relative exposure limit for health effects established by OEHHA.

This comment further suggests “a health risk assessment using comprehensive, not screening methodologies, should be conducted to determine the long-term pattern of C-silica and diesel exhaust exposure to the community,” and that the HRA should be based on emission factors from all dust and diesel particulate generating processes, use local meteorological data, use the AERMOD model, and be interpreted based on current health-risk based benchmarks of C-silica exposure and using standard toxicity criteria for diesel particulate risks. As described in detail above, the HRA performed for the Draft EIR exactly meets these specifications; in addition, the HRA conducted for this EIR used several conservative assumptions that would tend to overstate risks. Furthermore, the modeling results are corroborated by empirical study of ambient air quality downwind of the Quarry. Therefore, the conclusions in the Draft EIR regarding crystalline silica and diesel particulate exposure are well-supported.

30-35 The list of references to the January 14, 2008 memo is acknowledged.

30-36 The ambient monitoring program conducted by STI in 2004 is described and results documented within the Draft EIR. See pages 4.2-14 – 4.2-16, 4.2-19, and Tables 4.2-6 and 4.2-7 in Section 4.2, Air Quality. A copy of the report is available from the Marin County Community Development Agency. Please contact Tamara Taylor at 415-499-7873.

30-37 The County is not currently conducting ambient air quality monitoring. Such a requirement could be taken up by the Board of Supervisors when considering project approval.

30-38 There is currently no indoor air monitoring of crystalline silica being conducted, and there are no plans to do so. Since the EIR concludes that the chronic health risk impact is less than significant (Impact C4.2-10), there is no nexus for requiring the Quarry to conduct such monitoring, nor does there appear to be a need to do so, based both on the emission dispersion modeling conducted for the EIR, and on the results of the 2004 ambient air quality monitoring study.

30-39 There is currently no ambient air monitoring for crystalline silica being conducted.

30-40 There is currently no ambient monitoring being conducted. The results of the 2004 study are available from the County, and summarized in Section 4.2, Air Quality. See responses to comment 30-36.
7. Comments and Responses

7.3 Comments on the Draft EIR and Responses

30-41 An HRA was conducted as part of the Draft EIR.

30-42 Please refer to Impact C4.2-10 (Chronic health impacts) in Section 4.2, Air Quality. See also comments above.

30-43 Please see response to comment 30-32.

30-44 The MSDS for sandstone is acknowledged.

30-45 The baseline used in the Draft EIR is discussed in Chapter 3, Project Description. See pages 3-18 through 3-24; and 3-65 through 3-70. The attachment of the full 1984 Merrill Lynch report on Basalt Rock to this comment letter (comment 30-106) is acknowledged. The EIR preparers have reviewed the entire report and find no information contained therein that conflicts with or suggests the need to modify the baseline as presented in the Draft EIR. Please note that Table 2 on Page 6 of the Merrill Lynch report, which shows historic production levels, shows the same annual volume as in Table 3-8 in Chapter 3, Project Description. The average of 1980, 1981, and 1982 production levels (1,414,667) was used to establish the baseline for 1982 in the Draft EIR because production levels were all similar in these years, and best reflect the conditions at the time the Quarry became a legal non-conforming use. Production levels from prior years were excluded from the averaging exercise, because they were much lower, and do not reflect the level of activity that was occurring in 1982.

30-46 The Draft EIR uses the average production level for the period 1980-1982 as the baseline for operational intensity. This level was also used to estimate the level of truck traffic in 1982, with an assumption that trucks were used to transport ½ of the Quarry’s product. Since the applicant now proposes in the AQP to limit trucks to this level (250 trips per day, or 125 loads per day), this would not trigger the requirement for a traffic study.

30-47 Since the 2-minute interval is currently in place, and is proposed to continue, and since there was no such requirement in 1982, it is assumed that this will result in an improvement in effects of truck traffic over baseline conditions. See the traffic analysis in the Initial Study for the AQP, which found a less than significant impact. See pages 120-121 of the Initial Study.

30-48 The mining that has taken place on South Hill recently is consistent with the 1982 Amended Reclamation Plan. Therefore, the effects of this mining are considered a part of the baseline, and not the project. Therefore, impacts on scenic views are not considered project impacts. The photographs in Section 4.1 were taken in the fall of 2006 during preparation of the Draft EIR and show conditions at that time. It is acknowledged that the visual character of the site has now changed substantially. As noted above, however, these changes are consistent with the Quarry’s existing, approved Amended Reclamation Plan. The Initial Study for the AQP concludes on page 187 that this project would not substantially reduce, obstruct, or degrade a scenic vista open to the public or scenic highway, or conflict with adopted aesthetic or visual policies or standards. Visual
simulations in Section 4.1 show conditions at the conclusion of proposed reclamation, and so show the net effect of the proposed 2004 ARP.

Cumulative effects of mining on biological resources, including the marshes on the Quarry property, are discussed in Section 4.3, Biological Resources. See particularly Impact C4.3-18 (regarding impacts of the ARP and AQP combined on marsh habitat).

30-49 Please see response to comments 30-6 through 30-44, which respond to Dr. Damian’s comments in detail, and which conclude that the HRA was properly conducted, and that the conclusions reached in the Draft EIR regarding health risks should not be changed.

30-50 Please see response to comment 30-7.

30-51 Nowhere in the Draft EIR review of the STI study is it stated or implied that “quarry air is cleaner than non-quarry air.” The STI study sampled ambient air quality in locations close to the Quarry, and downwind of the Quarry relative to the predominant winds in the area, but did not sample air from the Quarry itself; therefore, there would be no basis for such a comparison.

Please see response to comment 23-18 regarding the Onsite study.

30-52 Because the Draft EIR concludes that health effects of crystalline silica are less than significant, there is no basis for specifying additional mitigation measures to control emissions of this substance. The Draft EIR does, however, conclude that dust (i.e., PM-10 and PM-2.5) emissions of both the ARP and AQP would be significant (see Impacts R4.2-1 and R4.2-2 regarding ARP dust emissions; and P4.2-6 regarding AQP emissions), and specifies numerous mitigation measures that will also result in a decrease in crystalline silica emissions.

Note also that, as discussed in the Draft EIR, SRRQ’s existing BAAQMD and County permits include requirements to reduce dust emissions. These include the following:

- Use of baghouses, scrubbers and pulse jets on applicable stationary sources;
- Throughput restrictions for crushers and screening equipment, conveyors and storage piles;
- Facility-wide particulate emission limitation of Ringlemann 0.51;
- Watering of storage piles and roads;
- Particulate emissions restriction of 0.01 grains per cubic foot for primary crushers and screening equipment to be confirmed with source testing; and
- Maintenance of throughput records for crushers and screening equipment.
An independent assessment of air quality permits and emissions at SRRQ was conducted on behalf of the County in August of 2005 (STI, 2005). This assessment found that all applicable stationery sources on site were operating under BAAQMD permits. The study also concluded that BAAQMD inspectors had found the facility to be operating in compliance with its permits. The assessment identified improvements to water spraying techniques as the appropriate method of further controlling particulate matter emissions.

Many of the existing practices and permit conditions under which SRRQ currently operates may be considered “best management practices,” though there is no single set of such practices that could be applied to this or any other mining operation (see Appendix O in Volume III). Taken as a whole, the mitigation measures specified in the Draft EIR will reduce most of the projects’ impacts to less than significant, and may also be considered “best management practices.” The Reduced Project Alternative, which is evaluated in Chapter 6, includes consideration of enclosure of crushing, sorting, and barge loading operations; see, however, further discussion of this alternative in Master Response 4 in Section 7.2 of this document.

30-53 Chronic and acute health impacts were found in the Draft EIR to be below significance thresholds. Ambient air monitoring for DPM is considered unnecessary, as the mitigation measures specified to reduce DPM emissions can be more directly monitored through site inspections and operator reports. The Board of Supervisors may, however, wish to specify such a measure as a condition of approval when considering action on the AQP and ARP.

30-54 As explained in detail in the responses to comments 30-6 through 30-34, the HRA conducted for this EIR did not underestimate health risks associated with the AQP and ARP projects and the Draft EIR does not underestimate such risks; in fact, many conservative assumptions were used in order to provide a worst-case estimate of health risks. The conclusions reached in the Draft EIR should be considered a conservative estimate of actual health risks, not an underestimation.

30-55 Data sets from two meteorological monitoring stations located near SRRQ were used for the HRA. The highest predicted concentration from either analysis was used in the HRA results. The HRA used the AERMOD dispersion model, which uses terrain and site-specific meteorological conditions. Dr. Damian concurs in comment 30-26 that the AERMOD model was the appropriate model for this HRA.

30-56 The EIR preparers are unaware of any credible studies that conclude that production of biodiesel uses more fossil energy than its use saves. The commenter may be confusing biodiesel with corn-based ethanol, which has been the subject of such criticism. Some biodiesel is produced from waste oil, such as used oil from restaurant fryers, and so uses very little fossil fuel in its production. A study prepared by the National Renewable Energy Laboratory states that biodiesel derived from soy oil reduces net CO₂ emissions by 78.45% compared to petroleum diesel (Sheehan et al, 1998). The use of biodiesel is
also an effective mitigation measure for the reduction in PM, including DPM, emissions, as was intended to reduce impact R4.2-3.

30-57 Regarding the required greenhouse gas reduction plan, please refer to Master Response 6 in Section 7.2 of this document.

30-58 McNear’s Brickyard, although not part of the proposed project and not changing as a result of the proposed project, was included in the air quality analysis from the perspective of cumulative health risk effects. This included the brick manufacturing operations and an estimate of the truck traffic. See Appendix D, Health Risk Assessment, in Volume III.

30-59 Please refer to Table B-1 in Appendix D, Health Risk Assessment, in Volume III for a list of all toxic pollutants included in the HRA. Please refer to figures 4.2-6 and 4.2-7 in Section 4.2, Air Quality, which show the chronic and acute health risks for the area surrounding the Quarry.

30-60 DPM sampling was conducted as part of the 2004 monitoring program by STI. The sampling was conducted from May 16 through July 14, 2004. A monitoring station was established approximately 18 meters from the center of Point San Pedro Road adjacent to residences along Heritage Drive. Concentrations of DPM were estimated by measuring carbon black particulates and polycyclic aromatic hydrocarbons indicator species. Monitoring indicated spikes in DPM concentrations from 15 to 45 ng/m\(^3\) regularly occurred during work days at the Quarry, while weekend concentrations were less than 5 ng/m\(^3\), indicating that trucks entering and leaving the Quarry were the likely source of DPM emissions in the area.

The HRA conducted as part of the Draft EIR did not rely on the STI study’s monitoring results, but instead modeled DPM emissions and dispersion of emissions from all sources associated with the Quarry, projecting back to 1982 and forward to 2024.

30-61 The STI filter sampling and analysis of ambient air in the vicinity of the Quarry, conducted during 2004 indicated that, on the days sampled, concentrations of many metals (including antimony, cobalt, lead, mercury, selenium, vanadium, and amorphous silica), well below reference concentrations where health effects occur. For some other metals (including arsenic, beryllium, cadmium, chromium, and nickel), measured concentrations were below non-cancer reference concentrations, but method detection limits were not low enough to allow a comparison to cancer benchmarks.

See also the concentrations of various metals in rock samples taken at the Quarry in Table 4.2-8c in Section 4.2, Air Quality. These were used as the basis for estimating metals emissions for the purpose of the HRA conducted for the Draft EIR.

30-62 Please see response to comment 30-13.
30-63 The Draft EIR does not “equate” crystalline silica and amorphous silica, but rather distinguishes between the two. Amorphous silica has a REL of 6,000 µg/m³, while crystalline silica has a REL of 3 µg/m³.

The findings and conclusions of the HRA conducted for the Draft EIR, as reflected in Impact C4.2-10, do not contradict the statements made in this comment regarding dust dispersion from the Quarry and crystalline silica content of that dust. As stated in Impact C4.2-10 and further elaborated above, however, the modeled level of exposure is below the REL set for chronic crystalline silica exposure set by OEHHA.

30-64 Future DPM emissions from on-road vehicles were based on an assumption of 250 one-way trips (125 round trips) per day with an approximate load capacity of 25 tons, because this is the limit proposed by the applicant. This restriction (which is already in effect as part of the Superior Court Order), would apply to trucks for the transport of quarry resources including asphalt. This restriction does not apply to McNear's Brickyard operations.

30-65 Cancer risks are expressed as the risk for an increase in the number of new or additional cancer cases per million persons. See Impact C4.2-9 (cancer risks of the AQP and ARP projects combined) and Impact C4.2-12 (cumulative cancer risks). The hazard index, for which the significance threshold is greater than 1, is applied to chronic (maximum 1-year average) and acute (maximum 1-hour) risks, not cancer risks.

30-66 The HRA models emissions of hydrogen sulfide. The acute health impacts were below CEQA significance thresholds. This conclusion was supplemented by odor complaint data, but does not rely upon it.

30-67 Please see response to comment 30-14.

30-68 Please see response to comment 30-17.

30-69 Please see response to comment 30-8.

30-70 The following text is added to Page 4.7-18 in Section 4.7, Noise and Vibration, under the heading “Complaint History”.

The Countywide Plan indicates that noise generated by San Rafael Rock Quarry has been a source of complaints from neighboring residents. Additionally, complaints of neighboring residents regarding noise levels generated by SRRO activities have been documented in Marin Superior Court Case No. CV 014584.

30-71 The comment states concerns that the Draft EIR did not include an analysis of vibration impacts from haul truck using Point San Pedro Road.
Because the rubber tires and suspension systems of trucks provide vibration isolation, it is unusual for trucks to cause groundborne noise or vibration problems (U.S.DOT, 2006). Most problems with truck-related vibration can be directly related to a pothole, expansion joist or other discontinuity in the road surface. U.S. DOT reports vibration levels generated by a truck over a bump of 72 VdB which is equivalent to a PPV of about 0.015 in/sec. This is substantially below the recommended safe ground motion limits ranging from 0.5 to 2.0 in/s, which are the basis for most regulatory blast-induced vibration levels in most State and federal jurisdictions throughout the United States and are specifically intended to prevent cosmetic crack damage in plaster or drywall in typical wood frame homes. Therefore, the level of truck-induced vibration likely to be experienced by residents along Pt. San Pedro Road can best be characterized as an annoyance. Since the maximum number of daily truck trips generated by SRRQ would not increase with implementation of either the AQP or the ARP, there would be no net increase in truck-generated vibration with either project element.

30-72 Please see Impact P4.7-7 and Mitigation Measures P4.7-7a and b in Section 4.7, Noise and Vibration. These mitigation measures, particularly P4.7-7b, are expected to reduce to the extent practical the disturbing effects of blasting on the Quarry’s neighbors, as stated on page 4.7-31 in Section 4.7. However, as stated in that discussion, neighbors of the Quarry will likely continue to be annoyed by blast vibrations. This is expected to contribute to Impact C4.6-7 (continuing incompatibility of operations and phased reclamation grading with neighboring residential and recreational land uses) in Section 4.6, Land Use and Planning, which is found to be a significant unavoidable effect.

30-73 The comment asks why 1982 noise monitoring data were collected in 15 minute intervals and suggests that the conditions of the San Rafael noise ordinance be applied to the project.

The noise data collected in 1982 was not performed for the purposes of environmental impact assessment relative to CEQA, but rather to assess the ramifications of lowering North Hill. The measurements were collected to determine the general operational noise of the Quarry under normal operating conditions and not for comparison to the 24-hour Ldn standards of the Countywide Plan.

Please refer to Master Response 11 in Section 7.2 regarding the applicability and enforcement of the City of San Rafael’s noise ordinance upon an operator outside of the city limits.

30-74 The comment states that the Draft EIR did not consider reduction of truck speed as a possible mitigation measure. As stated in Impact P4.7-6 in Section 4.7, Noise and Vibration, the maximum daily level of truck traffic proposed under the AQP would not exceed the levels apparently experienced in 1982, when the Quarry became a legal non-conforming use. Therefore, noise and vibration levels from trucks along Point San Pedro Road would be expected to be similar to the levels in 1982 and there would not be a
significant noise and vibration impact with regards to trucks along Point San Pedro Road. Therefore, mitigation measures are not warranted for SRRQ trucks operating along Point San Pedro Road. However, the Board of Supervisors may, when considering the merits of the projects, consider imposition of the measures suggested in the comment.

30-75 The comment states that the Draft EIR did not consider spacing of trucks in its analysis. As previously stated, the applicant does not propose to increase the number of daily maximum truck trips above baseline levels. Therefore there is no basis for identification of an impact of this kind.

30-76 The comment asks that the San Rafael noise ordinance be applied to the project and also expresses concern that the Ldn noise descriptor of the Countywide Plan’s Land Use Compatibility guidelines does not reflect the noise issues currently experienced by residents in the quarry area.

The City of San Rafael has its own Noise Ordinance implemented in Section 8.13 of its municipal code. The City of San Rafael’s noise ordinance, unlike the County’s noise ordinance, establishes quantitative noise limits. While noise ordinance standards contained in the noise ordinance may be used to assess noise impacts of development projects within the City of San Rafael, these standards are not applicable outside of the City and cannot be enforced upon an operator outside of the City and, consequently, were not applied in the analysis of noise impacts in the Draft EIR. Regardless, the analysis of noise impacts in the Draft EIR, outside of a required assessment of land use compatibility, is based on incremental increase or decrease in noise levels. In cases where operational noise levels exceed the short-term standards of the Countywide Plan, a combination of noise control measures and mitigation measures would result in an overall decrease in operational noise levels compared to existing conditions.

30-77 The comment asks why noise from the operations of McNear’s Brickyard were not considered in the Draft EIR. Noise from brickyard operations were included in all noise measurements collected for the Draft EIR to characterize current ambient noise levels, and in subsequent analysis that used collected noise data to estimate noise impacts. McNear’s Brickyard is operated independently of SRRQ and its operations would be unaffected by implementation of either the proposed AQP or ARP. Therefore noise and vibration from brickyard operations would not be expected to contribute to noise impacts of the proposed project when compared to the existing conditions.

30-78 The comment asks why noise from rock crushing was not captured at monitoring locations close to the plant on Lagoon Road and Marin Bay Park Court when it is audible at Peacock Drive and suggests that additional locations should be monitored. The comment also suggests that other noise descriptors other than just the 24-hour average Ldn be measured.

As indicated in Table 4.7-4 in Section 4.7, Noise and Vibration, Quarry operations are identified as a predominant noise source at location LT-1 on Marin Bay Park Court.
Monitoring location ST-7 on Lagoon Road is adjacent to Point San Pedro Road where the predominant noise source was truck pass-by events which, because of the greater noise level, generally masked noise generated by conveyors or other quarry operations. Noise from quarry operations was also identified for location ST-8 on Via Montebello and location ST-3 at McNear’s Beach County Park. These locations were selected as they are closest to the quarry. Noise levels from quarry operations along Peacock Gap Road (approximately 1 mile from rock crushing equipment) would be expected to be less than those monitored at ST-8 (approximately 0.5 mile from rock crushing equipment).

Of the ten measurements presented in Table 4.7-4, only location LT-1 was a 24 hour measurement for which a 24-hour average Ldn noise descriptor was generated for comparison to the 24-hour Ldn standards of the Countywide Plan. The other nine locations were 15 minute daytime measurements during which the monitoring technician could identify quarry operations as presently ongoing during the monitoring period.

30-79 The comment suggests that noise monitoring location should have been conducted at locations close to the roadway.

As indicated on Page 4.7-15 in Section 4.7, Noise and Vibration, noise monitoring location ST-1 is approximately 40 feet from the centerline of Point San Pedro Road. Noise monitoring location St-2 is approximately 150 feet from the centerline of Point San Pedro Road. Noise monitoring location ST-7 is approximately 100 feet from the centerline of Point San Pedro Road.

30-80 The comment suggests that the Draft EIR include a measurement or comparison of noise reduction achieved by the padding of “bang boards” on quarry loading platforms.

Noise measurements quantifying the noise reduction effectiveness of treatment of bang boards was conducted in September of 2007 on behalf of the applicant. The applicant forwarded the results to the County. The bang board is located at the end of the conveyor belt that drops the rocks onto a barge and is used to direct the flow of materials into piles. Treatments consisted of covering the metal surface of the bang board with 5-inch rubber lining. Noise measurements indicated a decrease in the median noise level of up to 2 dBA after treatment at a distance of about 250 feet (Rosen, Goldberg, Der & Lewitz, 2007).

30-81 The comment states that truck noise should be monitored at residences located closer to the road than 60 feet and that the potential noise implications of caravanning trucks should be studied.

As indicated on Page 4.7-15, Noise and Vibration, noise monitoring location ST-1 is approximately 40 feet from the centerline of Point San Pedro Road, or approximately 28 feet from the roadway edge. Noise monitoring location ST-7 is approximately 100 feet from the centerline of Point San Pedro Road (where it is two lanes in each direction) or about 70 feet from the roadway edge. These measurements captured consecutive truck pass-by events.
There would be no change in the number of daily maximum truck trips with implementation of either the ARP or the AQP. Therefore any noise increases or other impacts associated with consecutive truck pass-by events would occur with or without the project and would not represent a potential impact of either the AQP or ARP.

30-82 The comment states that the Draft EIR did not determine the maximum daily truck traffic in the 1982 baseline, that a noise survey of residents should be conducted to determine a noise baseline and that the baseline should include vehicle trips generated by residential development constructed since the 1982 baseline.

As stated on Page 3-66 in Chapter 3, Project Description, \textit{While there are no known records of the number of truck trips associated with Quarry operations in 1982, the Marin County Planning Department estimates that the number of truck trips in 1981 was an average of 272 per day, and in 1982 307 per day.}

A noise monitoring survey of residential areas surrounding the quarry is presented on pages 4.7-13 through 4.7-17 of the Draft EIR and includes vehicle trips generating by existing uses.

30-83 The following is from page 184 of the Initial Study for the AQP:

“The current annual entitlement to the Quarry [from Marin Municipal Water District] is 17.13 acre feet, amounting to an average of approximately 465,000 gallons per month. Water is also used to mitigate dust during operation of the Quarry. Water used for this purpose is collected during the rainy season in an open pond located at the bottom of the Main Quarry Bowl and pumped out on demand throughout the year.

The anticipated future water allocations are expected to provide adequate amounts of treated water to the site for continued site operations. Therefore, a finding of less-than-significant impact [regarding any need for new or substantial alterations to existing utility and service systems] is warranted.”

30-84 Baseline for the ARP is discussed in the Draft EIR commencing with page 3-18 in Chapter 3, Project Description. Baseline for the AQP is also described in Chapter 3, commencing with page 3-65, including baseline levels of production. Because the Initial Study for the AQP concluded that there would be no increase in traffic from the AQP and therefore no traffic impacts of the AQP, there is no further discussion or analysis of operations-related traffic in the Draft EIR. See the impact discussion on pages 120-123 of the Initial Study. Both the Initial Study and this EIR use the best available data and reasonable assumptions for estimating trip generation associated with Quarry operations in 1982. See further discussion of the baseline in the response to comment 30-45, and in Master Response 3, Baseline, in Section 7.2.

30-85 See response to comment 9-12 regarding why the commenter’s request for detailed project trip generation is not needed to support the Draft EIR’s determination that the
project impact would have a less-than-significant effect on near-term and cumulative traffic conditions.

30-86 As the commenter states, the project proposal is to control trucks exiting from the site so that they are spaced at two-minute intervals, which is exactly what is currently occurring. The fact that there would be no change to current conditions means there would be no impact. Analysis of traffic conditions under the current situation of truck spacing is presented in the Setting (Table 4.10-2), which shows that intersections in the area are currently operating acceptably.

30-87 McNear’s Brickyard is a separate operation from the Quarry. Neither the AQP nor the ARP project proposes any changes to McNear’s Brickyard operations that would increase truck traffic.

30-88 See response to comment 9-12 regarding why the commenter’s request for detailed project trip generation is not needed to support the Draft EIR’s determination that the project impact would have a less-than-significant effect on near-term and cumulative traffic conditions. Truck trips associated with shipment of asphalt are included in the proposed 250 one-way trips per day limit.

30-89 As stated on page 4.10-9 in Section 4.10, Transportation and Traffic, potential impacts of the AQP on transportation were examined in the Initial Study and determined to be less than significant. The AQP reviews SRRQ’s “Truckers’ Management Plan.” This is a voluntary program, not a regulatory program, and is not enforced by the County. Several provisions of the Trucker’s Management Plan are part of the AQP proposal, and would become conditions of approval if the AQP is approved. Neither the Initial Study nor the Draft EIR “rely on” the Trucker’s Management Plan as a basis for the finding of less than significant impacts, as implied in the comment. This finding is based on the project baseline, current traffic conditions, and the predicted effects of project approval.

30-90 The scenario described in the comment is speculative, and so is beyond the scope of the EIR analysis (CEQA Guidelines §15145).

30-91 The EIR does not attempt to keep in place any trucking limit. The EIR analyzes the impacts of the projects as proposed, as well as alternatives to the projects, as required by CEQA. Because the proposed number of daily truck trips is equal to or lower than the baseline, the finding of no traffic impacts is warranted.

30-92 The EIR is not required to include all ideas and suggestions contained in scoping comments. Several comments and suggestions are included and considered, particularly in the Reduced Project Alternative.

30-93 The EIR preparers have reviewed complaints regarding quarry truck traffic. Complaints do not in themselves provide the basis for a conclusion of a significant impact.
30-94 The statement regarding best available technology is vague and cannot be responded to. As described in Section 4.5, Hydrology and Water Quality, and in the Water section of the Initial Study for the AQP, the Quarry site is designed so that much of the Stormwater runoff from active quarry and processing areas drains toward the Main Quarry Bowl. Project operations at the site do not include materials processing that involves discharge of wastewater. Collected runoff water from the bottom of the Main Quarry Bowl is used during the dry season for dust control on the access roads. Discharge into surface waters consists primarily of storm water runoff from the site and off barges while being loaded with the mined rocks. The project site currently operates under a National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities (Waste Discharge Permit No. 221100384). As a requirement of that permit, a Storm Water Pollution Prevention Plan (SWPPP) was prepared to provide measures to protect the water quality of surface runoff. A modified SWPPP was prepared on October 11, 2004 in addition to an accompanying Storm Water Management Plan to address issues associated with the AQP, if approved. The Storm Water Management Plan includes best management practices (BMPs) that are designed, and have been proven throughout the industry, to reduce the discharge of pollutants to the maximum extent possible. Adherence to the BMP implementation and monitoring requirements prescribed in the SWPPP and Storm Water Management Plan would ensure that potential impacts associated with water quality degradation would be less than significant. This conclusion was reached in the Initial Study for the AQP, and therefore, this issue was not further examined in the Draft EIR.

Regarding future water use for dust control, see the response to comment 30-83.

30-95 Regarding the baseline for the traffic analysis, please refer to response to comment 30-84.

30-96 These suggestions from the commenter’s scoping comments were considered during the preparation of the Draft EIR. Several were incorporated into the Reduced Project Alternative. Others are beyond the authority of the County and other regulatory agencies, or cannot be required as mitigation because there is no nexus with an identified significant impact.

30-97 According to the CEQA Guidelines, alternatives must meet three criteria: they must be feasible, they must be capable of meeting at least some of the project objectives; and they must be capable of reducing or avoiding at least some of the project’s significant impacts. An alternative that would encompass shutting down the San Rafael Rock Quarry and relying instead on materials from other local quarries or from farther afield (such as Canada) appears not to meet these criteria for the following reasons: it is infeasible, as the Marin County Superior Court has affirmed the Quarry’s vested right to continue mining; while it may reduce certain site-specific impacts, it would likely create new or more severe impacts elsewhere, including impacts related to transportation and transportation-related air emissions.
30-98 The comment is unclear as to the “negative consequences of continued excavation of the Main Quarry Bowl.”

30-99 Much of the recent and predicted future reduction in DPM emissions has come as a result of regulatory measures, intended to reduce adverse health effects on the general populace. Additional reductions have come as a consequence of the Court Ordered limit on truck trips. See the detailed discussion of the HRA conducted for this EIR Section 4.2, Air Quality, and in Appendix D, in responses to comments 30-6 through 30-44 and Master Response 5 in Section 7.2 of this document. The HRA includes an extremely conservative assumption regarding the crystalline silica content of the rock being mined, and so would still be valid even if the crystalline silica content changed as mining progresses. A literature review of metals content of Franciscan formation greywacke sandstone, as well as the sampling conducted for the Draft EIR, both indicate that metals as a component of dust emissions from the Quarry are not likely to pose a human health hazard, either presently or in the future.

30-100 The applicant prepared and submitted extensive seismic analysis to determine stability of the proposed increased depth of the Main Quarry Bowl. This analysis was peer-reviewed during preparation of the Draft EIR (Appendix K in Volume III) and a conclusion of its adequacy is described in Impact R4.4-1 (slope instability hazards prior to the completion of mining) and Impact R4.4-3 (slope instability hazards affecting post-reclamation land uses). Both of these impacts are found to be potentially significant, but mitigation measures are specified that would reduce the severity of the impacts to less than significant. These include additional geotechnical studies as mining proceeds, and prior to the drafting of the Final Development Plan, due three years prior to the anticipated cessation of mining.

30-101 Please refer to Master Response 7 in Section 7.2 of this document.

30-102 Please refer to Master Response 4 in Section 7.2 of this document for further discussion of the Alternative Reclamation with Alternative Beneficial End Use Alternative.

30-103 “An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation” (CEQA Guidelines §15126.6). Please note that the final decision regarding post-reclamation use of the site will be made during consideration of the Final Development Plan, which the applicant is required to prepare and submit three years prior to the anticipated cessation of mining.

30-104 Regarding the legality of the use of the NE Quadrant for management of mining wastes and materials to be used for reclamation grading, please refer to the response to comment 21-1. Regarding issues surrounding mining and backfilling of the Main Quarry Bowl, please see Master Responses 4 and 7. Other possible post-reclamation end-uses, such as those mentioned in this comment, are considered in the Alternative Reclamation with Alternative Beneficial End Use Alternative. A traffic study will be required as part of the
Final Development Plan, which is due to be submitted to the County 3 years prior to the expected cessation of mining. Please see also Master Response 4 in Section 7.2 of this document for responses to the points raised in this comment.

30-105 The County acknowledges receipt of these items, which are already in the County’s project files.

30-106 The County acknowledges receipt of the full Basalt Rock report prepared by Merrill Lynch (October, 1984). Portions of this report were used to characterize conditions around the time the Quarry became a legal non-conforming use, in 1982. In reviewing the full report, the EIR preparers find no new information that would require a revision of the project description and baseline description contained in Chapter 3.

30-107 This trip generation table is taken from the Dutra Haystack Landing Draft EIR, and does not require a discrete response.

30-108 The receipt of this table is acknowledged. However, as noted in the response to comment 30-84, the Draft EIR comes to other conclusions regarding the baseline level of truck traffic for the AQP project.

30-109 Receipt of this information from the Department of Water Resources is acknowledged. Please note that none of the quarries listed, other than SRRQ, has barge access.

30-110 This and the remaining comments from this commenter are scoping comments on the EIR for the AQP and ARP. While the EIR preparers reviewed and took into consideration all scoping comments during preparation of the Draft EIR, CEQA does not require explicit responses to scoping comments, and none were provided in the Draft EIR. Draft EIR Appendix G (in Volume II) includes all scoping comments, and a table indicating where in the document they are addressed. Since the scoping comments are resubmitted here in the context of comments on the Draft EIR, they are responded to individually.

This comment is preamble to those which follow.

30-111 Regarding baseline, see the response to comment 30-84 and Master Response 3 in Section 7.2 of this document.

30-112 Regarding the applicant’s proposal for use of the NE Quadrant, please see the response to comment 21-1.

30-113 Consistency of the AQP with the Countywide Plan is considered in Section 4.6, Land Use and Planning.

30-114 A full HRA was conducted for the Draft EIR. See Section 4.2, Air Quality. See also responses to comments 30-6 through 30-45, and Master Response 5 in Section 7.2 of this document.
30-115 The effects of continued quarrying activity on the site’s marshland and native species are discussed on pp. 4.3-49 through 4.3-58 in Section 4.3, Biological Resources. See also Master Response 10 in Section 7.2 of this document for further discussion of impacts and mitigation measures related to the site’s marshes.

Project consistency with the Countywide Plan’s Baylands Corridor and Quarry status as a Bayfront Conservation Zone are discussed in Section 4.6, Land Use and Planning, as well as in Section 4.3, Biological Resources, pp 4.3-33, 4.3-35, 4.3-38. While the NW Quadrant marshes are a part of the Baylands Corridor, the Quarry is actually a part of the City-centered Corridor (See Figure 1-2 in the Marin Countywide Plan, 2007). Areas designated as Conservation Zones include the marshes and the eucalyptus grove on South Hill (see Figure 4.6-2).

30-116 Impacts of barging product from the Quarry site pursuant to the proposed AQP are considered throughout the Draft EIR. The Reduced Project Alternative contemplates enclosure of some site operations.

30-117 The Draft EIR examines the effects of increased hours of operation above baseline. See Impact P4.1-9 (nighttime operations would introduce new sources of light and glare) in Section 4.1, Aesthetics; Impact P4.6-6 (the AQP would allow for intensification of operations above 1982 levels) in Section 4.2, Land Use and Planning; and Impact P4.7-5 (Quarry operations under the AQP would result in increased ambient noise levels) in Section 4.7, Noise and Vibration.

30-118 The comment states that blasting activities of the quarry are greater than the “barely perceptible” standard of the Quarry.

Impact P4.7-7 in Section 4.7, Noise and Vibration, identifies a significant noise and vibration impact relative to blasting and identifies mitigation measures to reduce this impact to less than significant levels, such that blasting vibrations will not cause structural damage to nearby residential buildings. This discussion acknowledges that these measures will also reduce to the extent practical the disturbing effects of blasting on the Quarry’s neighbors. It is likely, however, that such effects will continue. Impact C.4.6-7 identifies a significant and unavoidable land use incompatibility impact with regard to noise, dust, traffic and vibration as the result of quarry operations under both the AQP and ARP.

30-119 The comment states that enclosure of quarry operations should be considered as mitigation.

As stated in Impact P.4.7-5 in Section 4.7, Noise and Vibration, the applicant has implemented best management practices for noise reduction from operations, including use of rubberized barge feeders and transfer boxes, and installation of directional/reduced noise back-up alarms on all rolling stock which will result in a reduction noise from existing operational noise levels. Enclosure of some processes is included as an element
of the AQP Reduced Project Alternative. See Master Response 4 in Section 7.2 of this document.

30-120 Visual impacts, including visual impacts of the proposed berm in the NE Quadrant, are considered in Section 4.1, Aesthetics. See particularly Impact R4.1-3 (impacts on views from Marin Bay Park Court residences), and Figure 4.1-12.

30-121 Cumulative effects are considered in each section of Chapter 4, Growth-Inducing and Cumulative Effects, and also in Chapter 5, Alternatives.

30-122 Please refer to the Alternatives analysis in Chapter 6.

30-123 Please refer to the response to comment 30-84, and to Master Response 3 in Section 7.2 of this document.

30-124 Consistency with Countywide Plan policies is examined in Section 4.6, Land Use and Planning.

30-125 The screening-level HRA conducted for the Initial study concluded that the projects would have the potential for significant health risks. Consequently, a full HRA was conducted for the Draft EIR. See Section 4.2, Air Quality; see also Master Response 5 in Section 7.2 of this document.

30-126 Please refer to the response to comment 30-115.

30-127 Typically, EIRs use the Army Corps of Engineers (Corps) definition of wetlands. The Cowardin definition is sometimes used for projects with a federal nexus, such as National Park Service projects. The commenter is inaccurate in stating that the Cowardin wetland definition would meet the requirements of all agencies with jurisdiction. The Cowardin definition, for example, is more inclusive than the Corps’ three parameter definition. In other words, Cowardin wetlands would not necessarily also be considered Corps wetlands.

The Draft EIR evaluates the potential effects of particulate matter on the SRRQ marshes in Section 4.3, Biological Resources; see Impact P4.3-17.

30-128 Impacts of quarry activities on terrestrial species are presented on pp. 4.3-49 through 4.3-55 of Section 4.3, Biological Resources. A discussion of potential impacts of quarry activities on the Marin Islands National Wildlife Refuge is presented on pp. 4.3-51 through 4.3-52.

The applicant is proposing no new activities under the AQP that would adversely affect marine and estuarine species or habitats around the project site.

30-129 See the Water section in the AQP Initial and Section 4.5, Hydrology and Water Quality.
30-130 Special-status species that could potentially be found on the Quarry site are identified and discussed in Section 4.3, Biological Resources, on pp. 4.3-11 through 4.3-18, as well as in Table E-1 of Appendix E in Volume III.

30-131 The Draft EIR discusses the potential for impacts resulting from mining and grading activity on South Hill on the animals with potential to breed there or use the area as a migratory stop (birds and bats) on pp. 4.3-51 through 4.3-55. The Monarch butterfly, another species with potential to use the habitat on South Hill as a migratory stopover point is discussed on pp. 4.3-13 and 4.3-14.

30-132 The Draft EIR discusses non-native species throughout the biological resources Setting section in Section 4.3 (see pp. 4.3-2 through 4.3-8). An inventory of non-native species is not relevant to the EIR analysis.

30-133 This is a scoping comment requesting that the EIR identify impacts of traffic into and out of the Quarry, as well as internal operational traffic, ‘…on the marsh, Bay, and any wildlife habitats…’ The Draft EIR does in fact address such impacts on pp. 4.3-52 (impacts on birds) and 4.3-55 (impacts on the marshes) of the impacts analysis section of Section 4.3, Biological Resources.

30-134 Barge operations are considered in the AQP Initial Study in the discussions of air quality, aesthetics, transportation, and noise.

30-135 Please refer to the Alternatives analysis in Chapter 6, Alternatives; see particularly the Barge Only Alternative. See also Master Response 4 in Section 7.2.

30-136 The EIR preparers are unaware of any practical conveyance available for use for transporting products from SRRQ, other than truck and barge.

30-137 The EIR preparers have examined the County’s complaint history files. These are summarized in the appropriate section of the Draft EIR; see for example Section 4.7, Noise and Vibration, page 4.7-8.

30-138 The applicant is not proposing changes to barge loading operations that would result in waste spills or dumping. No problems of this sort have been known to occur.

30-139 The applicant is not proposing changes to barge loading operations that would affect scenic views. See impact P4.1-10 (visual impacts from McNear’s Beach County Park) in Section 4.1, Aesthetics.

30-140 An engineering study of the feasibility or “practicability” of enclosing various operations is beyond the scope of the EIR. The AQP Reduced Project Alternative does examine generally the relative impacts of placing some processing operating within enclosures.
30-141 Economic costs of the sort suggested in this comment are beyond the scope of the EIR. Increased costs are not a basis for rejection of an alternative being considered (CEQA Guidelines §15126.6(b))

30-142 Please see the response to comment 30-117.

30-143 Comment noted.

30-144 The Revey Associates report was used as basis for the discussion of blasting impacts in Section 4.7, Noise and Vibration, and the recommendations in the report are incorporated as mitigation measures. See Impact P4.7-7 and Mitigation Measure P4.7-7b. Gordon Revey, the author of the report, is a mining engineer and an internationally recognized expert on blasting and blast effects. Mr. Revey visited the SRRQ site and surrounding neighborhoods, witnessed a blast event, reviewed seismographic records, and reviewed the complaint history in preparation of his report.

30-145 Please refer to Mitigation Measure P4.7-7b in Section 4.7, Noise and Vibration, for additional protocols and restrictions on blasting. Use of expansive media is not considered a practical alternative. See page 2 of the Revey Associates report, included as Appendix J in Volume III.

30-146 Please see the response to comment 30-144.

30-147 As stated in the AQP Project Description, Table 3-10, and elsewhere, the baseline for blast frequency and effects is based on reports from the time that the Quarry became a legal nonconforming use in 1982. These indicate that blasting occurred approximately 2 times per week (approximately 104 times per year) and that the effects on the nearest neighbors were “barely perceptible.” This baseline was used as the basis for Impact P4.7-7.

30-148 Please refer to Impact C4.6-7 (incompatible land uses) in Section 4.6, Land Use and Planning.

30-149 Please see the discussion of significance criteria for vibration and air-overpressure impacts on page 4.7-22 in Section 4.7, Noise and Vibration.

30-150 A study of the kind suggested exceeds the degree of inquiry required by CEQA. CEQA stipulates that an EIR be based on the best available information.

30-151 Please see the discussion of complaint history on page 4.7-18 in Section 4.7, Noise and Vibration.

30-152 Please see the response to comment 3-150.

30-153 Please refer to Mitigation Measure P4.7-7b in Section 4.7, Noise and Vibration, for additional protocols and restrictions on blasting.
30-154 Please see the discussion of complaint history on page 4.7-18 in Section 4.7, Noise and Vibration.

30-155 Please see the responses to comments 30-148 and 30-149.

30-156 Web posting appears to be an acceptable method for informing residents of the Quarry’s blasting schedule.

30-157 The comment asks why short-term noise measurements were not collected at Marin Bay Park Court. A long-term (24-hour) noise measurement was collected at the exterior balcony of 28 Marin Bay Park Court to assess compatibility of the noise environment with the standards contained in the Countywide Plan. These standards are established in terms of the Ldn noise descriptor which is the energy average of the A-weighted sound levels occurring during a 24-hour period, accounting for the greater sensitivity of most people to nighttime noise by weighting (“penalizing”) nighttime noise levels by adding 10 dBA to noise between 10:00 p.m. and 7:00 a.m. The other nine measurements presented in Table 4.7-4 are 15-minute measurements, similar to those collected by Salter Associates in 1982 and included the exterior balcony of the residence at 16 Marin Bay Park Court.

30-158 The comment states that noise from Quarry trucks should be assessed for compliance with the noise ordinance, that a reduction of truck speeds from 35 to 25 miles per hour or rubberizing Point San Pedro Road should be investigated as noise reduction measures.

Marin County has no quantitative noise ordinance standards. The City of San Rafael Noise Ordinance standards are not applicable to mobile sources. Therefore, the noise setting section of the Draft EIR estimated the land use compatibility of measurement locations at residences closest to Point San Pedro Road based on the land use compatibility standards of the Countywide Plan (which are more stringent than those of the City of San Rafael’s General Plan).

As stated in the Draft EIR, there would be no change in the number of daily maximum truck trips with implementation of either the ARP or the AQP. Therefore there would be no change from either existing conditions or those of the 1982 baseline from which to identify a significant truck-related noise impact or associated mitigation measures such as speed reduction or asphalt treatment.

30-159 The comment states that the Draft EIR should investigate the noise reduction potential if quarried materials destined for Richmond and Petaluma were shipped by barge instead of truck, of enclosure of quarry operations, and use of newer processing and transport equipment.

As stated in the Draft EIR, there would be no change in the number of daily maximum truck trips with implementation of either the ARP or the AQP. Therefore there would be no change from the either existing conditions or those of the 1982 baseline from which to
identify a significant truck-related noise impact or associated mitigation measures such as a shift from truck to barge transport.

As stated in Impact P.4.7-5 in Section 4.7, Noise and Vibration, the applicant has implemented best management practices for noise reduction from operations, including use of rubberized barge feeders and transfer boxes, and installation of directional/reduced noise back-up alarms on all rolling stock which will result in a reduction noise from existing operational noise levels.

30-160 The comment states that the EIR should discuss the noise reduction techniques implemented by other quarries and discuss the feasibility of employing noise reduction strategies at SRRQ.

Most other quarries in the state, such as Pilarcitos in San Mateo County, are located further from sensitive noise receptors than SRRQ. Noise mitigation identified for the proposed Roblar Road Quarry in Sonoma County include on-going noise monitoring (which is already occurring at SRRQ). If warranted by noise monitoring, additional measures that may be implemented at Roblar Road Quarry include additional soundproofing of equipment, installation of berms or other noise barriers to attenuate equipment noise at affected occupied residences, restriction on duty cycles for noisy equipment, or other recommended measures. See also Appendix O in Volume III and Master Response 4 in Section 7.2.

As stated in Impact P.4.7-5 in Section 4.7, Noise and Vibration, the applicant has implemented best management practices for noise reduction from operations, including use of rubberized barge feeders and transfer boxes, and installation of directional/reduced noise back-up alarms on all rolling stock which will result in a reduction noise from existing operational noise levels. Additionally, the proposed ARP would result in the construction of berms that would serve to further reduce noise levels from on-site operations at SRRQ.

30-161 The comment states that the EIR should review the court case records and the ongoing complaints submitted to the County regarding complaints by neighbors regarding noise from existing operations.

The following text is added to Page 4.7-18 in Section 4.7, Noise and Vibration under the heading “Complaint History”.

_The Countywide Plan indicates that noise generated by San Rafael Rock Quarry has been a source of complaints from neighboring residents. Additionally, complaints of neighboring residents regarding noise levels generated by SRRQ activities have been documented in Marin Superior Court Case No. CV 014584._
To assess the potential for noise impacts, the Draft EIR used noise data collected at ten locations including both long and short-term noise descriptors to establish the existing noise conditions at sensitive receptors resulting from operations at SRRQ.

30-162 Please see Impact R4.1-3 (impacts on the view from a Marin Bay Park Court residence).

30-163 Please see Impact P4.1-10 (impacts on views from McNear’s Beach County Park).

30-164 Several of the suggestions in this comment are incorporated as mitigation measures and therefore included in the Mitigated Alternative, or are specified as part of the Reduced Alternative.
April 14, 2008

Mr. Tim Haddad
Environmental Coordinator
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, CA 94903-4157
Fax: (415) 499-7880
thaddad@co.marin.ca.us

Subject: SRRQ – DEIR for both ARP and ASMQP

Dear Mr. Haddad:

Thank you for the opportunity to comment on this important document. CMANC is a trade association of ports and harbors in California along with those businesses that support the maritime industry in California.

We believe the San Rafael Rock Quarry to be a, if not the most, significant quarry for materials to protect California’s fragile non-integrated network of levees and shoreline infrastructure. The natural existing hazards to these items are severe and when combined with the projected sea level rise in the San Francisco Bay and Sacramento San Joaquin Delta will be overwhelming. This makes the future ability of the San Rafael Rock Quarry to extract the mineral resources and move them by barge to be of utmost importance to the citizens of California.

We recognize the requirements of California Code of Regulations, Title 14 with regards to economic and social impacts, however, as the DEIR did comment on global warming, we believe it is prudent for Marin County to be cognizant of the impacts of a 1-meter sea level rise on San Rafael as determined by the San Francisco Bay Conservation and Development Commission and the need to develop strategies for adapting to sea level rise by having facilities such as the SRRQ available.

We are pleased to note that the Initial Study for the AQP proposal noted that it would not have the potential to result in any new or more severe significant impacts for transportation/circulation and that the DEIR similarly noted the proposed ARP would not have significant impacts on transportation and traffic.

As an organization we support clean air efforts. We are heartened to note the voluntary efforts of the SRRQ to reduce emissions, they operate within the annual requirements of their BAAQMD permit, and that “a majority of blasting events during the monitoring effort were not associated with an identifiable change in PM-10 concentration.” We believe the ongoing combination of voluntary efforts combined with the Air Resources Board’s Diesel Risk Reduction Plan will continue to have positive outcomes.

To promote the operation, maintenance and improvement of California harbors, ports and navigation projects that demonstrate responsible stewardship and benefit the regional and national economy.
Mr. Tim Haddad

We wish to point out that an alternative to the proposed ARP envisions using some of the 8 million cubic yards currently dredged in San Francisco Bay on an annual basis to be placed into the main quarry bowl. We question the amount reported as currently being dredged as it does not align with the numbers being reported by the Dredge Material Management Office.

Again, thank you for the opportunity to provide our input to this important document.

Sincerely,

James M. Haussener

James M. Haussener
Executive Director
Comment Letter 31: California Marine Affairs and Navigation Conference

31-1 This comment in preamble and therefore does not require a response.

31-2 This comment notes SRRQ’s importance as a source of materials for protection of shorelines and areas protected by levees in the face of rising sea level. The comment is acknowledged.

31-3 Comment noted.

31-4 Air quality impacts, including dust and diesel particulate matter emissions, are considered in Section 4.2, Air Quality. The comment does not question the analysis or conclusions reached in the air quality analysis. The comment lauds SRRQ for its clean air efforts.

31-5 This comment addresses the feasibility of one aspect of the Mitigated Alternative to the ARP. Please see Master Response 4 in Section 7.2 for further discussion and refinement of this alternative.
April 13, 2008

Mr. Timothy Haddad
Environmental Plan Coordinator
Community Development Environmental Planning
3501 Civic Center Drive
San Rafael, CA 94903

Re: San Rafael Quarry
Amended Surface Mining and Quarrying Permit
And Amended Reclamation Plan
Draft EIR

Dear Mr. Haddad:

Due to the size, complexity, lack of any verified past, present or future specific operating information on the SRRQ operations, outdated photographs and representations (2005) and lack of any business plans of the SRRQ and the Dutra Group, the public is not being given the opportunity to properly object to the amended mining and quarrying permit and the amended reclamation plan.

In order to try to object to the amended mining and quarrying permit and reclamation plan, the public has to go outside sources to secure information, not contained in this report, that should be included in this report.

In 1.4 of this report indicates the documents are incorporated by reference in the EIR. A review of these documents indicates the exhibits and testimony of the public in the Point San Pedro Road Coalition et al v. San Rafael Rock Quarry were NOT reviewed and completely ignored. On page 1-7 it shows that only the orders and decision was reviewed.

In my attempt to determine the base-line production information used in this draft EIR, Ms. Tamara Taylor, in her letter dated October 18, 2007 (EXHIBIT 1) provided only 2 pages of the Merrill Lynch Capital report. Ms. Tamara stated:

"The attached document constitutes the entirety of the information afforded to the Community Development Agency in the aforementioned environmental review."

The entire 23 page Merrill Lynch Capital report should have been provided to the consultant.

What other reports, facts or findings have been or are being withheld from the consultants and the public due to the claim of proprietary confidentiality by the San Rafael Rock Quarry. What other documents are in the possession of the Marin County Community Development Agency, Marin County Counsel or Marin...
County Department of Public Works that are being denied to the consultant and the public?

Since the 2004 Marin County Court decision, some trucking reports have provided to the County of Marin. I do not see any references or summary of any of this vital reporting data submitted by the SRRQ.

The SRRQ, in a filing connected with the Superior Court of California, Case CV 14584, provided Exhibit D, certified weight waster sheets for June 12, 2006 trucks. Review of these sheets discloses overloaded trucks, a violation of the Court Order. Also, this Exhibit indicated that most of the trucks are jammed together in first hours of operation of the quarry and are not spaced over the entire work day. (EXHIBIT 2)

This data shows the complete and total lack of self-enforcement by the SRRQ on their current trucker plan and lack of enforcement by the County of Marin. The lack of self-enforcement by the SRRQ and lack of enforcement on the part of the County of Marin does not support the representations made relative to the proposed trucker plan.

Detailed review of the provided trucking data provided by SRRQ is necessary for consideration of the trucking plan being proposed in this permit and must be included in the report.

Various activities are considered operations covered by the Surface Mining and Quarrying Permit. These listed on page 2-8.

This report does not provide any quantitative analysis of materials imported, quarried, crushed, processed, stockpiled on this site. How can a project environmental impact be reviewed and public comment made without this analysis?

Presently, no asphaltic concrete is produced at this site. This report does not reflect this lack of operation. Materials are trucked to the SRRQ Petaluma Haystack Landing site and Richmond Plant. This proposal does not provide information on any amounts of asphaltic concrete to be produced at this San Rafael site and where the material is to be shipped.

No specific information is reflected nor analyzed in this report as the various types of products currently being produced and shipped from this site.

The Draft EIR At 2-19, item 4 states:

"Because SRRQ has a deep water barge dock, it is able to supply rip-rap materials for revetment of levees in the Sacramento-San Joaquin Delta."
I have not seen any requirement by the Department of Water Resources that the supplier for rip-rap has to have a deep water dock and it is not the only supplier of materials for revetment of levees.

The above total misleads any reader in to thinking that SRRQ obtains contracts as a supplier of rip-rap from the State of California solely due to its deep water dock access.

This DEIR does not provide nor consider any information as to alternative supplies of materials for the State of California.

MATERIALS SUPPLIERS OF MATERIALS

- On April 26, 2006 the California Department of Levee Emergency Repair Project prepared and release a 4 page Material Sourcing Spreadsheet. Dutra is listed as one of 17 supplies. (EXHIBIT 3)

- In June 2003, URS Corporation prepared a report (EXHIBIT 4) entitled:

  **IN-DELTA STORAGE PROGRAM EARTENWORK CONSTRUCTION COST ESTIMATE**

  4.2 POTENTIAL AGGREGATE SOURCES
  Shows that Dutra Materials, Inc. is one of six commercial sources contacted to provide information for a cost estimate.

- On September 12, 2006, URS corporation prepared a report on Delta Risk Management Strategy report (EXHIBIT 5) entitled:

  **INITIAL TECHNICAL FRAMEWORK PAPER EMERGENCY RESPONSE AND REPAIR**

  This report was released for public comment.

  This report was prepared indicates that most of the information was provided by Chuck Walker and Harry Steward of the Dutra Group on April 14 and April 18, 2006 (page 19).

  The purpose of this report was to guide technical topics as they relative to assessing potential risk to Delta levees and assets resulting from potential impacts (floods, earthquakes, subsidence, and climate change).

  Section 4.1 speaks to resources. Dutra is listed as the primary Supplier of quarry products to the Delta.
This report provides insight to the SRRQ operations, production rates and thoughts for the future operations of the Quarry (52 years or 200 years – page 16) and in bypassing Environmental controls placed on the Quarry.

Also, it points out the loading capacity or lack thereof the SRRQ in responding to emergencies.

This report spells out SRRQ abilities of lack thereof.

Public comment to this report brought quick response from the industry about the emergency response and levee repair. As a result of the industry comments and experience, the report was changed as to the focus of the report on marine delivery/placement of materials in an emergency.

Comments published stated that materials for a post-event repair would not be limited to marine delivery placement. It also stated that a facility to allow transfer of material from truck to barge would be established to allow marine placement.

A more pointed reply to Dutra’s positioning on the marine delivery and repair came from Mr. Michael Brenner, Sr., Manager Marine Operations ACC West Coast (EXHIBIT 6) who stated:

They have a yard in the Port of Stockton, 4-6 hours closer by barge than SRRQ Facility to all delta areas east of Rio Vista, CA.

They do not use any of “Dutra’s Rock or Equipment”.

They have 3 2000 HP river tugs and 6 4000 ton barges

Exclusive agreement a quarry that can produce 16,000 tons of material per day, with a 50 year operation expectancy.

They can STORE 100,000 tons of material in their Stockton Facility.

They are already doing work for the Army C of E and are DWR qualified contractors.

According to industry sources, Dutra’s major problem is SRRQ does not have any place to store its production.
This information is not reflected in this DEIR

In addition to ACC West Coast, J. E. McAnnis of Chico, CA is a major marine and heavy construction company that performs work for the Army Corps of Engineers. Information about this company is attached. (EXHIBIT 7)

CANADIAN SOURCES OF MATERIALS
The information reflected on page 2-19 about Canadian sources materials is misleading and false.

The consultants preparing this report have not seen the Eagle Rock Terminal operation in Richmond, CA nor the latest techniques in handling of materials in a dust-free environment. Complete information (EXHIBIT 8) is available and should be include in this report.

The Dutra draft EIR claims materials from Canada have adverse consequences has got to be news to Polaris Minerals, the winner of the Prospectors and Developers Association of Canada award for "...excellent community relations and environmental practices...".

Polaris Minerals and their First Nation partners are currently into the San Francisco Bay Area. 80,000 tons of aggregate arrive in San Francisco Bay every 9 days. These aggregates are being used in concrete and asphalt concrete now.

Larger size rocks are not being transported from Canadian at the present time. However, it is understood that ships are being modified for transport of large size materials.

San Francisco Bay Conservation and Development has approved the development operations of the marine terminals in Redwood City and Richmond CA. SFBCDC is very much aware of greenhouse issue and were swayed by the use of low sulfur fuels by the self-unloading bulk carriers as reflected in the EIR for the Redwood City terminal being developed for the importation of Canadian materials.

No facts are provided to support the claim of adverse consequences of importation of Canadian aggregate materials in this report.

Shamrock Materials of Petaluma has a 20 year agreement with Polaris and is expected to receive 1.25 million tons per year of aggregates at its Petaluma site, next to Dutra’s Haystack Landing facility on the Petaluma River.

Their product is superior to the crushed rock and has been used in the construction the new San Francisco Bay Bridge, and Hwy 580 and 101 interchange currently being completed by Ghilotti.
Dutra's efforts to down play the availability of Canadian materials has been going since 2003. 2003 was the year availability of Canadian sources of materials was brought to the attention of the public in Marin County. The SRRQ apparently does not have any contractual source for Canadian aggregate materials.

The vessels that bring the materials into San Francisco are self-unloading.

Eagle Rock Aggregates, Inc. site can unload up to 4-5000 tons per hour of materials. The materials are stored in an enclosed building that keeps dust and noise to minimum.

The Canadian source of aggregates at Eagle Rock Terminal, 700 Wright Avenue, Richmond is only 2.5 miles from Dutra's current asphalt plant operating at 961 Western Avenue, Richmond, CA vs. 12.6 miles from SRRQ to Richmond. (Google earth maps).

If the SRRQ is closed, Eagle Rock Terminal is an alternative source of materials for the people of Marin County.

Also, Shamrock has an contract for 1.25 millions of aggregate per year from Polaris Minerals. Dutra's Petaluma yard is next door to Shamrock.

Information from Polaris Minerals website must be provided to the readers of this report.

**OTHER IMPACTS FROM SRRQ**

In Sonoma, Dutra has an application pending for building a new receiving dock and asphalt & recycling facility at Haystack Landing, Petaluma. This is just mentioned in passing in this report. The DEIR is on the Sonoma County website.

It is stated on page V J-16 of the Dutra Haystack Landing Asphalt & Recycling Facility the following:

> The project may undergo a start-up period where aggregate production at site would draw material primarily from the San Rafael Rock Quarry prior to completion of the barge off-loading facility. "The applicant has indicated that this phase would entail temporary trucking in aggregate to sustain a scaled down level of production."

This could have a severe impact on the citizens of San Rafael and is not addressed in the County of Marin DEIR.
As part of the Dutra Haystack Landing Asphalt & Recycling Facility in Petaluma Draft Environmental Impact Report a New Project Trip Generation Table (EXHIBIT 9) was prepared and provided for review.

No such trip generation table has been prepared for the Marin County EIR. A review of this Sonoma table shows substantial truck traffic for the importation and export of materials, including crumb rubber, oil, and asphalt oil for their paving products.

There is no table or information is contained in this report showing truck trips to be generated by the SRRQ, in the future.

A project trip generation table must be prepared and submitted to ensure that all materials imported and exported from the complete site, including McNears brick materials, and oil products for the asphalt are considered in the draft EIR.

This present DEIR does not consider any truck traffic other than trucks associated with the SRRQ site, except for materials weighted and shipped. All truck traffic must be considered.

No analysis of the environmental considerations has been given to the amount of sand, oil, and water that will be used in the operation proposed asphalt plant at 1000 Point San Pedro Road.

If 500,000 tons of asphaltic aggregates are going to Petaluma by barge to Haystack Landing, 125 trucks of 25 tons are still going down Point San Pedro Road (3,125 tons x 240 days) a total of 750,000 tons, what is being produced and where is it going? This is not reflected in this DEIR.

**VISUAL IMPACTS OUTDATED PHOTOS AND GRAPHICS**

2005 photos do not reflect the reality of the current state of the property or the visual impact of the mining of South Hill. The trees are gone from the ridgeline. At night, I can see the lights of Dutra's home on the point, and you can see the "rebuilt building" by McNear's brickyard, from Highway 101, as you go North bound into San Rafael.

This photos and graphics are false and misleading. They must be corrected.

**EXHIBIT O**

Does not have anything to do with the latest mining or material handling techniques. It is a summary of operation conditions of various quarries in California.

This report does not provide any information as to the latest mining or material handling techniques or equipment. A trip to Eagle Rock Terminal would show that 4,000 to 5,000 tons per hour loading and unloading equipment. Information
from the Department of Water Resources reports show that the SRRQ has outdated equipment. It can only load 1000 tons per hour.

No information is provided on the age, condition or capacity of equipment at SRRQ and the impact on environment. Please see Polaris Minerals Website for the last in mining, sorting, loading and unloading of materials.

RECLAMATION PLAN
This 1982 plan is being proposed by the SRRQ. The last time, I checked, the calendar stated it was 2008. To have a 26 year old being submitted is approval is beyond belief.

The submission of this 26 year plan is just a stalling tactic on the part of the SRRQ and the Dutra. I am very sorry to say that the citizens of Marin County are being played by the applicant relative to this reclamation plan or rather non-plan.

The plan is not in conformity with the San Rafael General Plan 2020 and there is no way to revive this DOA plan.

It should be rejected outright as not environmentally or economically sound.

I would hope that you review and properly consider my comments. I have lived with the adverse impacts of the SRRQ since 1986. Prior to 1986, my family did not have any issues with the SRRQ.

Sincerely yours,

Joseph W. Caramatti

Enclosures
Index
October 18, 2007

Joe Caramucci
8 Surfwood Circle
San Rafael, CA 94901

Re: Requested information regarding San Rafael Rock Quarry Traffic Studies

Dear Mr. Caramucci,

In response to your request, which you discussed with Tim Haddad, I am providing the attached materials regarding the Merrill Lynch report referenced in the Initial Study. The attached materials are a matter of public record and were included within the Community Development Agency staff report to the Board of Supervisor’s on the project. The data in the enclosed document represents only a portion of the full report, which was provided to the Community Development Agency, and we believe is subject to proprietary confidentiality claimed by San Rafael Rock Quarry. Though the complete report is not a part of the files maintained by the Community Development Agency, the entire report may have been submitted to the Courts or the parties’ Counsel during the legal proceedings. The attached document constitutes the entirety of the information afforded to the Community Development Agency in the aforementioned environmental review. Please do not hesitate to contact Tim Haddad at (415) 499-6274 if you have questions.

Sincerely,

Tamara Taylor,
Environmental Planning Aide

cc: Tom Lyons, County Counsel
Tom Lai, Deputy Director CDA
Tim Haddad, Environmental Coordinator
Rachel Warner, Environmental Planner
September 9, 1998

Mr. Gilbert Labrie
DCC Engineering Co., Inc.
P.O. Box 929
Walnut Grove, CA 95690

Addendum to the San Rafael Rock Quarry Office Expansion Traffic Study

Dear Mr. Labrie,

As requested, Whitlock & Weinberger Transportation, Inc. (F-Trux) has completed an addendum to the proposed San Rafael Rock Quarry Office Expansion Traffic Impact Study in the County of Marin in response to issues raised in the letter to Mr. Ken Smith from Mr. Tom Lai of the County.

Quarry Truck Trips

Information was obtained from quarry staff regarding the historical characteristics of quarry use, including the number of hours shipped per day, the hours of operation, and how the typical load is spread over the day. The San Rafael Rock Quarry operates approximately 240 days of the year from 7:00 AM to 4:00 PM Monday through Friday, excluding weekends and holidays. Shipments are made by barge and truck. It should be noted that with a closing time of 4:00 PM, the quarry does not generate truck trips during the PM peak hour, which is typically the critical time period for congestion in the City of San Rafael.

Three sizes of truck are typically used for shipping rock from the quarry, including 32-22, 32-25, and 32-35 ton trucks. Based on the frequency with which each size is used, the average shipment truck load is approximately 20 tons. To determine the average number of truck trips per day generated by the quarry, the total tonnage shipped via truck was divided by 240 working days/year and 20 tons/truck, then multiplied by 2 trips/truck (one to and one return). Over the last two years, the average number of truck trips per day has varied from 34 to 35 (on average 34.5 truck trips per day).

Quarry staff has indicated that approximately 18 percent of all truck traffic generated occurs during the AM peak hour of 7:00-9:00 AM, while only 4 percent occur during the last hour of operation, 3:00-4:00 PM. Using these percentages, the average number of truck trips during the AM and PM peak hours were determined. Between 40 and 64 trips have occurred on the average during the AM peak hour over the nine year period reviewed. Much lower volumes typically occur during the last hour of operation in the afternoon.

The table below represents the yearly tonnage based on sales for both barge and highway shipments. These production figures have then been converted to numbers of truck trips daily and during the AM peak hour and the last hour of operation in the afternoon, which is actually not during the PM peak period of 4:00-5:00 PM.

It is of interest to note that during years which include flood events the production peaks are higher than the "average" quarry shipments.

Mr. Gilbert Labrie
Page 3

September 9, 1998

existing quarry uses and expanded office uses.

We hope this information adequately addresses the concerns which have previously been brought forth. If you require further information, please do not hesitate to call me.

Sincerely,

Deanne J. Whitlock
Principal

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Summary Tonnage and Revenue Data - Summary tonnage and revenue data are shown below in Table 2. Between 1980 and 1982, the volume of aggregate shipments increased significantly as poor weather conditions destroyed or damaged several levees in the Delta region served by McNear Quarries. During this period, tonnage of aggregates shipped increased from 557,000 tons in 1979 to 1,599,000 tons in 1982. In contrast to increased aggregate shipments, asphaltic concrete shipments declined throughout this period as the number of federal, state, and local resurfacing projects were curtailed. However, offsetting this decline in volume was a significant increase in prices. A number of non-recurring events also influenced asphaltic concrete tonnage and revenue. In March 1981, the Company's asphaltic concrete plant was destroyed by an explosion. The plant was subsequently rebuilt and reopened in March 1982, although during this period, the Company continued to make shipments under long-term supply contracts by purchasing asphaltic concrete from other sources and reselling it to customers.

Since the latter half of 1982, as the economy has recovered and interest rates have abated, construction activity has also increased. Reflecting improved demand for aggregates, the Company's product mix in 1982 and 1983 included a greater proportion of rip rap and larger crushed rocks which contributed to an increase in revenue from $6.7 million in 1981 to $9.3 million in 1982. Demand for large rock remained strong in 1983, although average selling prices were lower. A large quantity of overburden was removed and sold in order to extract additional reserves for SMOP. Asphaltic concrete volume and revenue also recovered in 1983 following a four year slide as the number of highway resurfacing projects increased.

Projected tonnage and revenue data are shown in Table 3. As a result of the frequency of levee breaks and related damage to agriculture and water supplies in past years, several state and federal agencies have developed a plan to rebuild damaged levees and to undertake a program to maintain the condition of others. The plan calls for approximately $400-$500 million to be invested in this region over an extended period of time. McNear serves this region by large primarily through its distributor. Management estimates more than 3.0 million tons of aggregate will be shipped to the Delta region from principally McNear as well as Napa during the next three years. In addition to levee work, shipments from McNear Quarry in the 1984-1987 period are projected to be supplemented by rock production for SMOP. The SMOP project will require approximately 1.2 million tons in 1985 and 1986 and will generate $2 million in revenue. Management also expects that asphaltic concrete shipments will increase as a result of new federal and state highway legislation stimulating improved maintenance.

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Comment Letter 32

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cont.

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<table>
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<tr>
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<th>CONTACT, PHONE &amp; SITE ADDRESS</th>
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<tr>
<td>2</td>
<td>San Antonio Rd (Dallastown Co.)</td>
<td>Mark Ormsby</td>
<td>215-200-1062, 305-620-1040</td>
<td>10,000 tons/year</td>
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**LEYEER EMERGENCY REPAIR PROJECT**

Material Sourcing Information Spreadsheet

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<td>San Antonio Rd (Dallastown Co.)</td>
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<td>16</td>
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<td>215-200-1062, 305-620-1040</td>
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<td>17</td>
<td>San Antonio Rd (Dallastown Co.)</td>
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<td>215-200-1062, 305-620-1040</td>
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<td>San Antonio Rd (Dallastown Co.)</td>
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<td>20</td>
<td>San Antonio Rd (Dallastown Co.)</td>
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<td>10,000 tons/year</td>
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<td>9</td>
<td>Chemrock Quarry (Pea Co.)</td>
<td>Chemrock Aggregate, Inc.</td>
<td>500-509-1230</td>
<td>FILL - 12,500,000/yr</td>
<td>1,000 tons</td>
<td>N/A</td>
</tr>
<tr>
<td>10</td>
<td>Finney, Quarry (Santa Co.)</td>
<td>General Emulsion, Inc.</td>
<td>301-555-1234</td>
<td>FILL - 12,000,000/yr</td>
<td>1,000 tons</td>
<td>N/A</td>
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<tr>
<td>11</td>
<td>Nokia, Quarry (Nokian Co.)</td>
<td>Sauer Industries Inc.</td>
<td>601-123-4567</td>
<td>FILL - 12,000,000/yr</td>
<td>1,000 tons</td>
<td>N/A</td>
</tr>
<tr>
<td>12</td>
<td>AnnaMarri, Quarry (Anna Co.)</td>
<td>Granite Rock</td>
<td>700-700-1234</td>
<td>FILL - 12,000,000/yr</td>
<td>1,000 tons</td>
<td>N/A</td>
</tr>
<tr>
<td>13</td>
<td>Fay's Mountain Dam (Fay Dam Co.)</td>
<td>George Reed, Inc.</td>
<td>500-123-4567</td>
<td>FILL - 12,000,000/yr</td>
<td>1,000 tons</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### LEVIE EMERGENCY REPAIR PROJECT

Comment Letter 32

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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>Combined Rock Quarry (Tahoe Co.)</td>
<td>Bill Woods</td>
<td>500-123-4567</td>
<td>FILL - 12,000,000/yr</td>
<td>1,000 tons</td>
<td>N/A</td>
</tr>
<tr>
<td>15</td>
<td>Dual Purpose Creek Quarry (Tahoe Co.)</td>
<td>Ben Stowe</td>
<td>500-123-4567</td>
<td>FILL - 12,000,000/yr</td>
<td>1,000 tons</td>
<td>N/A</td>
</tr>
<tr>
<td>16</td>
<td>Pete Bar Quarry (Yukon Co.)</td>
<td>Nordic Industries, Inc.</td>
<td>500-123-4567</td>
<td>FILL - 12,000,000/yr</td>
<td>1,000 tons</td>
<td>N/A</td>
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<tr>
<td>17</td>
<td>Sombeck Quarry (Yukon Co.)</td>
<td>Carl J. Woods Construction Co.</td>
<td>500-123-4567</td>
<td>FILL - 12,000,000/yr</td>
<td>1,000 tons</td>
<td>N/A</td>
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</table>

Average Price/ton per day: 3,250 tons/day, $2,000,000/ton/day
Total Stockpile Material: 1,475,000 tons, $2,200,000/ton/day
Average Unit Price: $3,250/ton
4.2 POTENTIAL AGGREGATE SOURCES

A survey of commercial sources was conducted to obtain prices for the materials discussed in Section 4.1 for use in cost estimation. The results of the survey are included in Appendix A. Shown below is a list of six commercial gravel and rock suppliers that were contacted. However, only Delta Materials and Syar Industries quoted prices.

Delta Materials, Inc.
1000 Point San Pedro Road
San Rafael, CA
415-258-6876
415-258-9714 (fax)
Contact: Harry Stewart

Syar Industries, Inc. Madison Sand & Gravel
2301 Napa-Vallejo Highway
P.O. Box 2540
Napa, CA
707-259-5839
707-254-3018 (fax)
Contact: Scott Thomas

RMC Pacific Materials
515 Mitchell Canyon Road
Clayton, CA
925-426-2130
925-426-2112 (fax)
Contact: Josh Hinckley

Sevens Creek Quarry, Inc.
12100 Stevens Canyon Road
Cupertino, CA
408-252-2512
408-252-7621 (fax)
Contact: Pat Heminger

Hanzen Aggregates Mid-Pacific, Inc.
P.O. Box 580
Pleasanton, CA
925-426-4033

DSS Company Vermilion Plant
2648 W. Blevett Road
Tracy, CA
209-830-5130
209-830-5133 (fax)
Contact: Julie Jimenez

DELTA RISK MANAGEMENT STRATEGY

INITIAL TECHNICAL FRAMEWORK PAPER

EMERGENCY RESPONSE AND REPAIR

Prepared by:
URS Corporation/Jack R. Benjamin & Associates, Inc.
Prepared for:
Department of Water Resources
September 12, 2006
ASSUMPTIONS, CONSTRAINTS, AND LIMITATIONS

The following are some of the assumptions that will be made in the emergency response and repair analysis:

- The SRRQ will be in operation for the next 200 years even though their rock supply is more consistent with approximately 52 years of continued operation.
- The SRRQ will remain operational after a seismic event.
- All material will initially come from the SRRQ.
- Within days of a sequence of levee breaches, local regulations will be eased or set aside to allow the SRRQ to operate on a 24-hour basis.
- Sufficient transportation equipment (i.e., deck barges, acres, and tugs) can be made available immediately, so that material supply capacity remains the constraint.
- Resources (i.e., materials and equipment) are assumed to be available and will not be compromised by demands outside the Delta that occur as a result of the same seismic event. Damage which occurs to assets other than levees will not put a demand on resources required to support levee breach repairs.
- Additional damage resulting from after-shocks is not considered.
- There are no constraints on dewatering resources.

The following factors are not explicitly accounted for in the emergency response and repair model, yet they may impact the results of the analysis:

- The time required to put contracts into place may be significant and will vary from event to event.
- It may not be possible for Dutra to obtain permits to build a second loading facility within 90 days. State/Federal officials may need to step in to waive the typical permitting process.

(CEQA/NEPA). Additionally, SRRQ neighbors may hold up the process if they do not see events in the Delta as an impact on them.

- The longevity of the quarry.
- It may take longer than 180 days to bring other sources of material on line. The State will probably have to make the decisions when to call in help from non-local sources, such as Catalina Island, Canada, or Mexico.
- After a seismic event there will be numerous projects that will be competing for the same resources. The State may have to make the call on prioritization of competing projects.
- After a seismic event in the Bay area, there may be access constraints for the barges if bridges have collapsed.

7.0 INFORMATION REQUIREMENTS

The following are the inputs required to carry out the emergency response and repair analysis. For each scenario:

- Number of damaged levee sections;
- Location (island and island segment) and damage state of each-damaged levee section;
- Number of breaches;
- Location (island) of each breach;
- Initial breach size;
- Rate of breach growth in terms of breach length per unit time (e.g., ft/day);
- Typical levee section geometric parameters, as outlined in Figure 1 and Table 4;
- Island acreage, perimeter length, segment lengths, and elevation; and
- Erosion rate (e.g., feet per wind wave-duration exposure)

In addition, an hourly time history of wind speed and direction is required in order to assess erosion of levee interior slopes on flooded islands, and the impact on work progress.
From: Mike Brenner Jr. [mbrenner@acconstructions.com]
Sent: Tuesday, September 26, 2006 12:37 PM
To: Svetich, Ralph
Cc: Bert Sandman; Robert Barclay; Mike Brenner
Subject: ITF review guidelines
Attention: Ralph Svetich, DWR, DRMS Project Manager

Dear Mr. Svetich,

We have reviewed the above reference study done by your personnel with regard to the emergency levee repairs for a seismic event. Our company American Civil Constructors, Inc. has a marine division based in Benicia, CA and Seattle WA. We are presently placing some 2000 Tons per day of a specified 3008 minus rock on a levee repair project in the West Sacramento area. This is all being done from the water and is being staged and transferred to barges from our yard location in Stockton, CA. This location is some 4-6 hours closer by barge than SRRQ facility is to all delta areas east of Rio Vista, CA. We are not using any of "Dutra's" Rock or Equipment. We have Three 2000 HP river tugs that we own or have access to on an exclusive basis. We have two large crane barges available, one presently in use for the West Sacramento Job. We also own or have access to six(6) material barges capable of handling up to 4000 Tons each. We are presently using two for the West Sacramento Project. We have an exclusive arrangement with a Northern CA quarry that can produce up to 16,000 Tons per day, with a projected 50 year operation expectancy. We can store up to 100,000 Tons on the ground in our Stockton facility. This could be made available as needed for emergency work as well as any contract work.

We are presently listed as a qualified DWR contractor. We want to confirm that ACC West Coast can also participate for any of your marine or land based applications. ACC can supply the rock and equipment necessary to successfully perform the required contract work.

We want you and the appropriate personnel to visit our jobite here in West Sacramento as well our Stockton transfer site. Please call either myself or our project manager Mike Brenner Jr (cell) 707-674-1876 to schedule a time for a visit.

Sincerely,

Michael Brenner Sr
Manager Marine Operations
ACC West Coast
Phone 707-746-8028 Ext 11
Cell 707-333-0588

Delta Risk Management Strategy (DRMS) Phase 1 Response To Comments: Emergency Response and Repair

<table>
<thead>
<tr>
<th>Comments</th>
<th>Responses</th>
</tr>
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<tbody>
<tr>
<td>3. Page 12/Para 4.9: Based on experience and industry input, from either a cost or productivity basis, material for a post-event repair would not be limited to marine delivery/placement. The exception to that statement may be repair types RT5 (breach closure) and RT4 (cap breach opening) though even there a cost analysis of options would be warranted with limiting factor being site access.</td>
<td>From an emergency standpoint, marine delivery and placement is more efficient than land-based. Even if rock were sourced from quarries with no marine access, it is likely that a facility to allow the transfer of material from truck to barge would be established to allow marine placement.</td>
</tr>
<tr>
<td>4. I am unable to assess/comment on para 5 due to a general lack of background information on the model. I would welcome an opportunity to discuss the model assumptions and results and perhaps clarify the District's approach to emergency response/repair, in particular as applies to breach closure.</td>
<td>We are willing to meet and discuss this subject.</td>
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</table>

32-25 cont.
**Delta Risk Management Strategy (DRMS) Phase 1**
**Response To Comments: Emergency Response and Repair**

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<tr>
<td>Reviewer: Bergmooser</td>
<td>The following text has been added to Section 2, page 1: “The ER&amp;R model focuses on post-event actions only. Seasonal flood-fighting activities are not explicitly modeled, though the model allows for a reduction in emergency response capacity during the time of the year when one would expect non-event-related flood-fighting actions on non-flooded islands to be ongoing. As such, these activities would detract resources from the emergency operations.” Further modifications made to Section 4.4 to stress that the response and repair actions in the model only represent event-related activities.</td>
</tr>
</tbody>
</table>

1. The analysis and assumptions for this topical area are reasonable though an effort needs to be made to more clearly explain that the section is focused on post event actions (as discussed in para 2, pg 1) resulting in levee failure. A majority of those involved in emergency response/repair are focused on flood fight actions (not addressed by this strategy); as such clarity will ensure they focus their analysis.

2. Page 7/Para 4.4: Repair type RT2: As further discussed in para 4.9 (Repair Rates), structural protection of an interior levee can, in most foreseen situations, be accomplished only by truck; provisions may well need to be included to strengthen/construct access roads to allow transit. Further, as demonstrated during the Jones Trace failure, interior protection may include import of borrow material to raise the levee elevation in addition to slope protection either by temporary measures or placement of rock.

Added to Section 4.4: During the dry season, erosion protection and/or repair of damage resulting from erosion (repair type RT2) can be carried out from land, with rock produced at local quarries transported and dumped onto the interior slope by truck. This repair action is limited to those levees that have road access. While the model differentiates between those islands that have land access and those that do not, it does not differentiate between roads that are in good condition and those that require strengthening to allow the land-based work to proceed. Resource and time requirements to strengthen or construct access roads to allow the truck transit associated with land-based repair are not included in the material, cost and time estimates produced by the ER&R model. Furthermore, the model does not include any temporary or permanent raising of the levee elevation in the case of erosion protection or repair.

---

**J.E. McAmis Inc.**
*621 Country Drive*
*Chico CA, 95928*
*530.891.5061*
*530.891.0904*
*mcamis1@aol.com*

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http://www.jemcamis.com/CONTACTS.html

3/19/2008
J.E. McAnis Inc. has successfully completed numerous Environmental Restoration projects, including: superfund clean-ups, deep water-predation sand capping, ointments clean-ups, habitat creation, endangered species protection, invasive plant removal, environmental landscaping, beach renourishment, slope protection, slope installation and erosion protection projects.

COMPLETE LISTING OF FEATURED PROJECTS

- Emergency Channel Protection, Shafter, CA, USACE San Francisco District
- Emergency Bridge Repair, Various Locations throughout California, California Dept of Transportation
- Emergency Levee Repairs, Willoch Slough, USACE Sacramento District
- Levee Rebuilding, Mayle's, Alief City, CA, USACE Sacramento District
- Lower American River Bank Protection Project, Sacramento, CA, USACE Sacramento District
- Sarry Wall - Phase II, Sacramento, CA, USACE Sacramento District
- Meyer's Flat - Slide Repair and Rock Slope Protection, California Dept of Transportation
- Fair Drive Water Detention Project, Chico, CA, City of Chico, CA
- J.E. McAnis Inc. Quarried and Supplied Aggregates for Hwy 50 repairs, California Department of Transportation
- Sacramento River Flood Control Project Phase II Levee Reconstruction, USACE Sacramento District
- Rancho Levee Repair, Colusa, CA, Sacramento River Westside Levee District
- Butte Creek Streambank Protection Phase III, Chico, CA, County of Butte
- Sacramento River Bank Protection, Courtright Island, Sacramento, CA, USACE Sacramento District
- American River Watelevel Levee Reconstruction, USACE Sacramento District
- Butte Main Overflow Structure at MX Ranch, USACE Sacramento District
- Rehmiot Channel Repair and Rel/rehab, Reach 1 El Dorado A, Martis Creek, Placer County, Folsom, CA, US Army Corps of Engineers, Jacksonville District

http://www.jemcanis.com/PROJECTSMAIN.html
3/19/2008

http://www.jemcanis.com/PROJECTS.html
3/19/2008
Marine Construction and Dredging

Riverbed Gradient Facility, Sacramento River

AGENCY: U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
CONTRACT PRICE: $13,999,000.00
COMPLETION: 10/01
KEY ELEMENTS: EXCAVATION OF COMPACTED ROCK, RIP-RAP INSTALLATION, SHEETPILE INSTALLATION, ENDANGERED SPECIES PROTECTION, HABITAT PROTECTION AND CONSTRUCTION

The Riverbed Gradient Facility, Sacramento California. Over 180,000 cubic yards of cementitious river rock was excavated. Approximately 140,000 tons of riprap was placed between a series of sheetpile walls which formed the cells to create the gradient structure. The primary focus of this project was to create a 1,500 x 750 foot structure to protect migrating salmon from nearby intake pumps used by a local irrigation district.
Environmental Restoration

McCormick and Baxter Superfund Site Phases I and II, Stockton, CA

Agency: U.S. Army Corps of Engineers / N66H
Contract Price: $3,200,000.05
Compliance: 2010
Key Elements: Sand capping of contaminated bottom materials, bank protection, cleaning and grading, berms and debris removal, slope stabilization, remedial site contamination.

The McCormick and Baxter Superfund Site Phases I and II are located in the Stockton CA, Deep Water Channel, within the Old Harbor Slough. The Army Corps of Engineers contracted Montgomery Watson, with J.E. McNamar Inc., as the subcontractor, to implement Phases I and II of the clean up of Harbor Slough and surrounding area. Phase I consisted of level 3 upland contaminated material excavation and disposal, construction of containment pads for contaminated materials, and slope stabilization. Phase II primarily consists of placing a cap of clean sand, underwater over a contaminated portion of the slough.

http://www.jemcami.com/MCCORMICKANDBAXTER.html

http://www.jemcami.com/PROJECTSMARINE.html
Richmond Terminal

- Strategic gateway into the east coast of San Francisco Bay
- Covered storage of 72,000 tons 1/2 mile from Interstate 580
- 20-year lease, extendable to 40 Yrs
- Construction completed below budget
- Terminal in operation since Q4 2007

Shamrock Materials

- Shamrock Materials, a well-established San Francisco Bay construction aggregate consumer, has agreed to pre-purchase 20% of Orca Quarry's production
- 20 year term, with option for three 5-year extensions
  - Minimum take-or-pay volume commitments
  - Market price participation plus escalators
- Lightering onto customer’s barges enables Polaris to achieve lowest shipping cost from BC
Polaris Competitive Advantages:

- Very large, well-located resources: capable of growing into major long-term producer
- Exceptionally high quality products
- Low production and transportation costs
- Unparalleled west coast marine terminal access
- Solid, committed management team
- Strong balance sheet
- Clear focus – simple business plan

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  - Minimum take-or-pay volume commitments
  - Market price participation plus escalators
- Lightening onto customer's barges enables Polaris to achieve lowest shipping cost from BC
News Release
January 22, 2007

POLARIS WINS PDAC AWARD FOR ENVIRONMENTAL EXCELLENCE

VANCOUVER, British Columbia - Polaris Minerals Corporation (TSX: PLS) today announced that it has been selected to receive the prestigious 3rd Environmental Excellence in Exploration Award by the Prospectors and Developers Association of Canada (PDAC).

The PDAC has selected Polaris to receive this award for "establishing excellent community relations and environmental practices during the exploration and construction of its Oros Quarry near Port McNeill on Vancouver Island. The company set up partnerships with First Nations communities that have enabled bands to have an equity stake in the operation, and two of the largest quarries of their kind in Canada have been successfully permitted with the support and cooperation of the local community. Polaris has also exceeded expectations in its attention to the protection of the environment." More information on Polaris' award winning practices can be viewed at http://www.pdac.ca/pdac/programs/awards/award-winners.html#E3.

Marco Romero, Polaris' President and CEO said: "We are honoured to receive this significant recognition, the company's second major award for environmental and social excellence. Since the creation of Polaris, our team has worked hard to balance business objectives with these of the environment and communities within which it works. It is gratifying to have these efforts recognized. As Polaris develops into one of the largest, most efficient and progressive producers of construction aggregate on the Pacific coast of North America, it will remain our goal to maintain our very high standards of excellence."

The presentation of this award will be made during the PDAC awards evening, to be held at the Fairmont Royal York Hotel, Toronto, on Monday, March 5, 2007.

Polaris Minerals Corporation is exclusively focused on the development of quarries and the production of construction aggregates in British Columbia for marine transport to urban markets on the west coast of North America to meet growing local supply deficits.

For further information, please contact:
Marco Romero, President and Chief Executive Officer or
Mike Westerland, Director, Corporate Development
Polaris Minerals Corporation
Tel: (604) 915-5900
Web site: www.polarmin.com
Email: info@polarmin.com

This press release contains "forward-looking statements" and "forward-looking information" within the meaning of applicable securities laws. These statements and information appear in this document and include estimates, forecasts, information and statements as to management's expectations with respect to, among other things the future financial or operating performance of the Company, costs and timing
### Table V.J-11

#### New Project Trip Generation

<table>
<thead>
<tr>
<th></th>
<th>In</th>
<th>Out</th>
<th>TOT</th>
<th>In</th>
<th>Out</th>
<th>TOT</th>
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<tr>
<td><strong>IMPORT</strong></td>
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<tr>
<td>Aggregate</td>
<td>425,000 tons</td>
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<td>106</td>
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<tr>
<td>Sand</td>
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<td>19</td>
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<td>Crushed Rubber</td>
<td>675 tons</td>
<td>22 tons</td>
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<td>39</td>
<td>29</td>
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<td>Recycled Asphalt &amp; Concrete</td>
<td>130,000 tons</td>
<td></td>
<td></td>
<td>6,322</td>
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<td>12,644</td>
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<td>Water Tank</td>
<td>3,230,000 gal</td>
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<td>325</td>
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<td>650</td>
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<td>Asphalt CIP*</td>
<td>43,172,000 gal</td>
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<td></td>
<td>317</td>
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<td>634</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td>568,675 tons</td>
<td>6,422,999 gal</td>
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<td>125</td>
<td>125</td>
<td>250</td>
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<td><strong>EXPORT</strong></td>
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<tr>
<td>Aggregate</td>
<td>345,800 tons</td>
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<td>30,483</td>
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<td>Sand</td>
<td>43,375 tons</td>
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<td>3,615</td>
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<td>7,230</td>
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<tr>
<td>Recycled Asphalt</td>
<td>150,000 tons</td>
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<td></td>
<td>13,500</td>
<td>13,500</td>
<td>27,000</td>
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<td>Asphalt</td>
<td>225,000 tons</td>
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<td></td>
<td>18,750</td>
<td>18,750</td>
<td>37,500</td>
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<td><strong>Subtotal</strong></td>
<td>664,175 tons</td>
<td></td>
<td></td>
<td>52,484</td>
<td>52,484</td>
<td>104,968</td>
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<tr>
<td><strong>Total Annual Trips</strong></td>
<td>65,541</td>
<td>65,541</td>
<td>131,082</td>
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<td></td>
<td></td>
</tr>
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</table>

#### Average Annual Daily Traffic (AADT) (* Annual / 250 work days per year*)

|                  | 0.5 | 0.5 | 1  | 220 | 220 | 500 |

#### Adjusted Daily Trips (with Parking Factor = AADT x 0.0)

|                  | 2   | 2   | 3  | 75  | 75  | 150 |

#### AM Peak Hour Truck Trips (> Daily Trips / 10 lanes per day)

|                  | 75  | 75  | 150 |

#### PM Peak Hour Truck Trips (based on existing =900)

|                  | 0   | 0   | 0  |

#### AM Peak Hour Passenger Car Equivalents (> Truck Trips x 3)

|                  | 225 | 225 | 450 |

#### PM Peak Hour Passenger Car Equivalents (> Truck Trips x 3)

|                  | 0   | 0   | 0  |

#### Peak Hour Non- Truck Vehicle Trips

|                  | 10  | 0   | 10 |

#### Total Trips AM

|                  | 225 | 225 | 460 |

#### Total Trips PM

|                  | 0   | 10  | 10 |

* = 3,172,000 gallons of oil equals 12,500 tons

Source: Fehr and Peers, 2004
Comment Letter 32: Joseph W. Caramucci, Inc.

32-1 The comment notes that the testimony from the Superior Court case (Point San Pedro Road Coalition et al v. San Rafael Rock Quarry) were not incorporated by reference, and concludes that they were not reviewed, and that this is an omission of the Draft EIR. While the entire court record was not reviewed by the EIR preparers, we did read closely the Statement of Decision and Orders of the Court, and also reviewed highlights of the testimony and evidence in the case.

32-2 The entire Merrill Lynch report was attached to comment letter 30, and reviewed by the EIR. No new or conflicting information was found that would prompt a revision of the baseline stated in the Draft EIR.

32-3 All public records pertinent to the environmental review have been made available to the EIR preparers, and are available to the general public as well.

32-4 The Court Order stipulates a maximum number of trucks per day, and a minimum spacing of no less than two minutes between exiting trucks during peak traffic periods; there is no requirement to spread trucks evenly over the course of a day. The weighmaster sheet provided as an attachment to the comment (comment 32-24) shows times at which trucks were weighed, not the times they departed the facility. Departures are controlled by a signal light at Pt. San Pedro Road. Adherence to the departure intervals is verified periodically by the County Department of Public Works. Regarding maximum weight of trucks, the Court Order stipulates that, “Defendant SRRQ is enjoined from permitting more than 250 Truck Trips in or out of the quarry property per day, and any Truck Trip by trucks with a capacity greater than approximately 25 tons is prohibited” (April 19, 2004 Order, page 5). The County department of Public Works reviews Quarry shipping reports weekly, and has done so since 2004.

32-5 The comment is unclear and cannot be responded to.

32-6 The analysis of the AQP analyzes the proposed project, including proposed limits on operations, in relation to existing permitted activities in the context of conditions existing at the time that the Notice of Preparation was published.

32-7 SRRQ has an asphaltic concrete batching plant that is currently in operation. This plant was in operation in 1982, and is considered a part of the baseline for the AQP. The plant operates under restrictions stated in the Permit to Operate issued by the Bay Area Air Quality Management District; see 4.2-4 in Section 4.2, Air Quality. The rate of production has averaged about 70,000 tons per year over the past 5 years (Peer, 2009). The proposed AQP does not propose to increase production of this operation.

32-8 The fact that SRRQ has a deep water barge dock enables it to ship materials used for marine construction, including levee revetment and reconstruction. Certainly other
quarries are also capable of supplying materials for this purpose, and the Draft EIR never suggests otherwise. The importance of SRRQ as a source of materials for levee and shoreline work is, however, reflected in the numerous comment letters received from levee districts, ports, and marine organizations. See Master Response 12 in Section 7.2 of this document.

32-9 Please see the response to comment 30-97.

32-10 The existence of other sources of aggregate products for levee revetment work is acknowledged. Please see the response to comment 30-97.

Regarding the statement in Exhibit 5 of the comment letter referred to in this comment, that SRRQ would be in operation for 200 years: the proposed ARP limits mining to the extent of the final contours shown in the ARP. At the current rate of production, this extent will be reached in approximately 15-20 years. Any mining beyond this extent would require submittal and approval of another Amended Reclamation Plan. As noted in the Project Description (page 3-15) the Marin County Superior Court found and ordered that SRRQ has a vested right to continue to mine the Main Quarry Bowl to the extent that doing so is profitable, without respect to depth or duration of the mine pit, and to mine a portion of South Hill, as shown in ARP82. The possibility that SRRQ could in the future submit an application for an Amended Reclamation Plan is contemplated in the Draft EIR in consideration of cumulative effects.

32-11 The comment states that the Draft EIR presents no facts to support a claim of reduction in greenhouse gases as compared to importation of aggregate materials from Canada. The statement at the bottom of page 2-19 of the Draft EIR states:

There are few active hard rock quarries in the Bay Area, and fewer that have ready access to a deep water dock. Increasingly, aggregate materials are being shipped into the area, from as far away as British Columbia, Canada. Adverse consequences of importation of aggregate materials include increased cost, increased air emissions (including greenhouse gas emissions)...

This statement is based on the fact that importation of aggregate materials from Canada would necessarily result in more greenhouse gas emissions than if the material were quarried locally due to the emissions generated by barges, trucks or other forms of transportation. Use of low sulfur fuels would not reduce the emission of the principal greenhouse gasses from combustion of fossil fuels: carbon dioxide, nitrous oxide, and methane.

32-12 The point of the comment is unclear, but may be suggesting inclusion of an alternative to close SRRQ and instead to import aggregate materials currently supplied by SRRQ from Canada or other sources. Please refer to the response to comment 30-97.

32-13 See response to comment 9-12.
32-14 See response to comment 9-12.

32-15 Please see response to comment 32-7.

32-16 Please see response to comment 32-7. The destination of products shipped from SRRQ is not relevant to the environmental analysis, except for potential effects on traffic and air quality.

32-17 The photos in Section 4.1, Aesthetics, accurately reflect conditions around the time of issuance of the two NOPs for the projects. Visual simulations show predicted conditions at the cessation of mining and reclamation under the ARP.

32-18 The EIR does not examine the age or design of equipment used in operations per se, but does examine the environmental effects of changes in operations proposed by the applicant under the AQP. Where effects are found to be significant, mitigation measures are specified to reduce effects to less than significant, if feasible.

32-19 As stated in the Project Description, the applicant prepared and submitted an application for an Amended Reclamation Plan in 2004 (ARP04). The differences between the existing Amended Reclamation Plan, which was prepared and approved in 1982, and ARP04, constitute the project that is the subject of the environmental analysis.

32-20 This comment is a list of exhibits and does not require a response.

32-21 The County acknowledges receipt of this letter, which is already in the County project files.

32-22 This letter is also in the County’s project file.

32-23 This comment contains excerpts from the 1984 Merrill Lynch report. Excerpts from the report were reviewed in preparation of the Draft EIR; the full report, which was attached to comment letter 30, was reviewed in preparation of this Final EIR.

32-24 Please see the response to comment 32-4.

32-25 Please see response to comment 30-109.

32-26 Please see the response to comments 30-85 and 9-12.
February 19, 2008

Marin County Community Development Agency  
3501 Civic Center Drive, Room 308  
San Rafael, CA  94903-4157

To whom it may concern:  
RE: Written Comments to the draft EIR, S.R. Rock Quarry

This letter is in response to the DEIR regarding the San Rafael Rock Quarry proposal to amend their quarry permit.

We are strenuously opposed to granting the requested hours of operation that include crushing from 7 a.m. to 10 p.m. and barge loading from 7 a.m. to 10 p.m. While we barely tolerate the truck traffic, the environmental dust, and the noise of blasting and related quarrying operations throughout the day, continuing these operations past 5 p.m. is beyond the bounds of reasonable business hours in a residential neighborhood. We realize that the quarry existed before many of the homes that are nearby; we also know that plans to cease operation go back to 1982, followed by an extension into the 1990’s. Now the proposal states continuing operation for 17 more years, in addition to the absurd request to operate till 10 p.m. When is “enough enough”?

We say “no” to the quarry running rough shod over the neighbors in their community. It’s high time for the County to step up (much as Judge Sutro has) and put brakes and limits on this nuisance to all who live in the quarry area.

In addition, the plans for a marina and additional residential development for this already over-crowded section of Marin (and the Loch Lomond development isn’t even here yet!) merits very close scrutiny for the traffic on Pt. San Pedro Road, as well as access to city streets and Highway 101. In any emergency, evacuation would be impossible via impassable thoroughfares, and even in ordinary circumstances, the traffic into the City of San Rafael is often choked with cars at particular times of the day, during the work week and throughout the year.

Please consider the neighbors of the quarry as you review the request before you – the impact on quality of life is enormous.

Sincerely,

Judy and Ray Coombes  
20 San Marcos Place  
San Rafael, CA 94901  
Email: jlcoombes72@comcast.net
Comment Letter 33: Judy and Ray Coombes

33-1 The proposal to extend hours of operation is examined in the Draft EIR. See the response to comment 30-117.

33-2 This comment goes to the merits of the projects, not the environmental analysis.

33-3 See response to comment 9-10.

33-4 Please see Impact C4.6-7 in Section 4.6, Land Use and Planning, and Master Response 9 in Section 7.2 of this document.
April 13, 2008

Mr. Tim Haddad, Environmental Coordinator
Marin County Board of Supervisors
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, Ca 94903

Re: Draft Environmental Impact Report for the San Rafael Rock Quarry
Amended Surface Mining and Quarrying Permit and Amended Reclamation Plan

The decision on the Quarry matter is a momentous one that may have far-reaching consequences. Please take more time when considering these matters. The DEIR 1st go around has raised other questions about the way in which it tested the Quarry’s far-reaching throw-off ---- aka Silica ‘dust’ ---- and as WE THE PUBLIC are becoming more aware daily of such and the negative consequences therein, is it possible to have an Amended Report that goes onsite and gets samples from the surrounding neighborhoods, schools & churches? WE the public are riding bikes, walking, running and playing golf in this area....... Breathtaking exercise! There now appear to be many unknowns and issues that need more than cursory testing than was initially addressed by the DEIR.

There has been a huge history of flagrant disregard for County Regulations on the part of Dutra corporation....... at the end of which their representative pled ignorance. And how can it be assumed that if all the facts were known (which they weren’t & they aren’t) the public, as Dutra’s argument goes, ‘…. had full knowledge of the Quarry’s existence and never raised ‘stop!’ issues before’.

WE THE PUBLIC are just learning about all the hazardous things to our health pertaining to industry in the world, let alone Marin County. We haven’t known before but as we become more aware, we all have to take a stand ---- and turn away from the hand held out with the money in it saying ‘Take it and let us continue our operation....... no harm is being done, at least nothing perceptible that the experts we’ve brought in can point to with certainty.’

WE the people are YOU; YOU are our trusted representatives. We trust that you will look well into the matter..... WE assume you are doing your best to represent the public’s interests.

So WE didn’t know really what was going on at the quarry. We thought someone knew, we assumed the regulation of such an entity was in the County’s jurisdiction and regulatory measures were in place. We were wrong. Gross ignorance (or just living further away in a non-impactful location) on our part. We assumed regulatory measures were in place to curb the growth of a big company ostensibly raping the land. I stood with others, stood looking at the huge gaping hole where there used to be a hill --- our
now-we-know precious Marin Cnty land that they’re not making anymore, all of us expressing degrees of shock.

So No One apparently, was watching ...... or somebody thought others were! Buildings were built...... 15,000sf and No permits were had. No issuance of ‘Non-Conforming Use’, held up as a standard of control for almost all other Real Estate in Marin County, was adhered to by the Dutra Co. They weren’t asked to be accountable & they didn’t come forth & volunteer ---- they just continued to do what they could and more than they should. They continued to expand, build to suit their needs, dig deeper than ever imagined and when forced to face the facts, pleaded ignorance that Dutra project/land was a ‘non-conforming use’ designation. Just didn’t know --- wasn’t ever told. ??!

YOU are the HOPE that can halt or slow up the process so more information can be investigated. It would appear that this IS the moment we have. We cannot afford to let Dutra proceed once again with a slap on the hand. They grossly took advantage of the situation before. If they are allowed to do as they have requested, You as our representatives will pay the heavy toll of having opened the gates wide for much grievance in the community ---- to the public, the residents in all the surrounding homes & the children in the schools nearby.

O please if you can, do more research and be really very sure, beyond a reasonable doubt, that no health issue is involved, that the dust by-product is not really carcinogenic, that the blasting and the trucks are not an unreasonable thing for the nearby residents to bear == please have your committee go ON SITE to experience this before any decision is made.

Sincerely,
Joan Getz
Resident of Marin County and Realtor
Comment Letter 34: Joan Getz

34-1 Please see Master Response 5 in Section 7.2 regarding the health risk assessment conducted for the Draft EIR.

34-2 The comment is unclear. With regards to land use compatibility, please see Impact C4.6-7 in Section 4.6, Land Use and Planning, and Master Response 9 in Section 7.2 of this document.

34-3 The comment does not appear to address the environmental analysis and therefore no response is required.

34-4 The comment appears to be addressed to the Board of Supervisors, and goes to the merits of the projects.

34-5 The comment does not appear to address the environmental analysis and therefore no response is required.

34-6 The comment appears to be addressed to the Board of Supervisors, and goes to the merits of the projects.

34-7 The comment appears to be addressed to the Board of Supervisors. Regarding the health risk assessment, please see Master Response 5 in Section 7.2 of this document.
To;    Mr Tim Haddad

Environmental Coordinator

Marin County community Development Agency

Room  308    Marin County Civic Center

Subject  Comment letter from Willliam Hosken re the San Rafael Rock Quarry DEIR    April 12 2008
16 Marin Bay Park Ct  
San Rafael Ca  94901  
April ,12 , 2008  

Mr. Tim Haddad  
Environmental Coordinator,  
Marin County Community Development Agency  
3501 Civic Center Drive, Room 308  
San Rafael Ca. 94903  

Dear Mr. Haddad:

This letter and attachments contains our comments on the combined Draft EIR for the San Rafael Rock Quarry Amended Quarry Permit and Amended Reclamation Plan (SRRQ/Quarry) recently issued by the County of Marin. We find the document a rather amazing effort, quite complicated and difficult for lay citizens to understand and comment on. It might be helpful if up front a written plain English executive summary were included as part of the combined DEIR which clearly states the preferred alternative and the mitigations required and the results to be attained without having to wade through the entire documents with complicated cross references that often appear to be contradictory and internally inconsistent. In other words the recommended conclusion.

However after review we conclude that the DEIR’s need to be improved in the topical areas noted below (Ref- Notice of Public Hearing) if they are to be useful to the public and decision makers in arriving at sound judgments with respect to future operating and reclamation plans of the SRRQ.

1-- AIR QUALITY—(topic 5)  Page 4.2-60 concludes “no additional mitigation is available to further reduce the cancer health risks from the current projects…… This cumulative impact is therefore considered significant and unavoidable” We as neighbors living with this risk are deeply disturbed by such a casual dismissal of risks to our health.

We think this conclusion is faulted. There would be no impact if the quarry was shut down and/or if the DEIR at least provided an alternative which varies the size and scope of the operation and equipment and methods of management to the point where the cancer and other health risks are eliminated. There is no evaluation in the DEIR of any other health risks such as asthma. No evaluation has been made of impacts on the areas schools and parks. No evaluation has been made of dust risks within homes. There is no program as part of the Rec Plan to clean up health risks created by material produced from past operations and still prevalent in the neighborhood.

On page 4.2-14 the section of the DEIR on Site specific air monitoring gives a review of an air sampling program conducted from Apr. 04 to June 05 conducted by STI Inc. for the County that when referring to fugitive dust says “highest hourly concentration occur when the wind is from the north” or in other words up wind from the Quarry. This statement is puzzling and places severe doubt on the validity of the study by anyone
living along the Pt San Pedro Road Corridor (a.k.a. Marin’s Dust Bowl). See Exhibit I. It is essentially saying there is “no dust” from quarry operations in the neighboring community which does not match either other parts of the DEIR, other studies, or the experience of people living near the Quarry.

In addition to the anecdotal evidence concerning this study there are other studies and analyses which directly contradicts the conclusions of this Apr. 04/June 05 study. Why weren’t the following studies and data also included in the evaluation in the DEIR?

A-- ONSITE Environmental -- Ambient Air Monitoring Test Program -- Marin County Final Report - 3/20/01

B-- Report of Slakey and Associates of 6/1/95 which analyzed dust samples showing silica peaks by x-ray diffraction with 43% of the sample being under 1.5 microns and the entire sample less than 7.5 microns in particle size. Additional sampling done by Sequoia Analytical in 12/7/99 reaches a similar conclusion. See also the memorandum from Ed Hume to Francis Brigham Director of Parks and Open Space of 8/19/99 concerning excessive dust from the Quarry impacting on McNear’s Park. These studies are contained in a report Volume I submitted to Mr. Tom Lai of Marin County by the Point San Pedro Coalition on Feb 9, 2000.

C-- More than 33 complaints submitted over a 6 month period by residents of the Pt San Pedro Road corridor concerning fugitive dust as a nuisance were filed by the county with Judge Sutro on June 12, 2006. These complaints are not analyzed in the DEIR. No one living near the Quarry can believe the county’s “no dust conclusion” by air monitoring. We wash off decks, outside furniture and cars every morning all summer long. We observe that furnace filters are loaded with fine grey dust when replaced indicating there is need for indoor measurement of dust. The STI air monitoring study for the County is seriously flawed somewhere and should be reexamine and the analysis published in the DEIR.

D -- The report referenced in the DEIR by Rod Warters contradicts the STI 04/05 County Study findings. In Jan of this year Dr Paul Damien of SCS engineering took a sample of residual dust adjacent to the Saint Sylvester’s Chapel with the result of 25% of the material being crystalline silica of less than 10 microns. The DEIR should explain how that dust got there and accumulated in such large quantities if there “is no dust”

E -- The BAAQMD imposes a Ringleman 0.5 criteria for fugitive dust emissions on the Quarry facility wide. There is no mention in the DEIR if this standard was ever investigated and if violations occurred. Photos (see Exhibit II) of the dust clouds from blasting with time notations are in the hands of Mr. Hal Locke of the County staff and would seem to indicate that this regular occurrence often violates the 0.5 ringleman standard. Why isn’t this data reviewed and analyzed in the DEIR? The DEIR needs to examine all the data available re fugitive dust from the Quarry in reaching its conclusions.
From page 4.2-14 TABLE 4.2-5 after allowing for watering (which in our observation is erratic at best) there are still 460 lbs per day of pm10 emissions going into the air from Quarry sources. This is in excess of the 297 lbs permitted. What happened to the some 600 odd pounds shown as being released in the Initial Study? We know from experience that fugitive dust landing on our property increases markedly during the dry summer months which are also peak operating times for the Quarry. The DEIR must find out where and how this fugitive dust travels, the seasonality of its production and where it is deposited and in what quantities.

2-- Land Use Planning (topic 1) The DEIR concludes that there can be no mitigation for what is incompatible land use planning. We disagree and think that two additional alternatives should be presented in the DEIR'. One, shut the Quarry down immediately and two, an alternative which applies “the best available technology “ to Quarry operations and reclamation. Appendix O although an interesting comparison of the present operating practices of a selected list of quarries does not apply to this best available technology alternative as it does not provide what constitutes best technology or management practices. It merely lists what some quarries are doing with no knowledge of the technology being applied. (the list is interesting in that the conditions applied to other quarries is much stricter and tighter than the interim conditions applied to SRRQ)

Investigation should be made to identify the best technologies and management techniques which are available to reduce and mitigate noise, dust, vibrations etc. from Quarry activities. This analysis would create a DEIR alternative not currently considered. Technologies have changed significantly since the base line of 1982 and the newest and best should be in place to mitigate the poor land use planning that was allowed to develop. What would the impacts look like if crushers were enclosed, systems such as trellis were installed, hours were restricted, blasting limited to 200 pounds of explosive per day, a vacuum street cleaner used, rumble bars for trucks and so forth as mitigations?. Incidentally why is a street cleaner needed on Pt San Pedro Road twice a day if the truck washing facility works? We would suggest that the DEIR consultants follow the street cleaner on its daily route and note the cloud of dust that follows it down the road.

Why should a new quarry permit be issued that does not require the use of the most modern and efficient equipment capable of mitigating adverse impacts?. This topic needs to be integrated with topics, 5 air quality, 9 noise, and 13 aesthetics to produce a best available technology alternative in the DEIR’s covering both Rec Plan and the Mining Permit.

3 --Aesthetics (topic 13) The visual analyses are out of date and incomplete. Since the very select simulations for example, of fig 4.1-12 were created the active mining on South Hill has occurred and is intensifying—(see attached photo EXHIBIT III) This ugly, active and ever changing mine face is visible throughout the area. This aesthetic nightmare will be there apparently for at least 17 years. Showing what might happen
some 17 years out and not showing the interim situations in visual from a fully representative set of locations is misleading and makes the DEIR evaluations incomplete.

There are no visualization representations of the proposed new berm to be built and operated over 17 years under the Reclamation Plan proposal in the NE Quadrant. It will have a large negative impact that is not evaluated for its visual significance. Visualization should include cross sections and cover all of the 4 phases of the proposed "reclamation" berm program. There should also be visualizations of the mining of south hill over the proposed extended 17 year life of the Quarry.

4 --Noise (topic 10) This topic in the DEIR covers both noise as measured in dBA and vibrations as in blasting as measured in PPV. A rather confusing mix of subjects as the dBA measures sound waves that happen constantly and are air transmitted. The blast vibrations are of a different nature travel mostly through the ground and have different sensory effects on structures and humans.

Noise is measured in dBA and the standards used in the DEIR are in terms of Ldn which means that compliance with standards are averaged over a 24 hour period. This flies in the face of how we in a neighborhood experience noise. If you can’t be outdoors in the summer and have a conversation on your deck or patio because of Quarry noise for an hour or two in the evening or use your garden in the day because of a high level of noise it is certainly a violation of the right to the peaceful enjoyment of ones property. But the Quarry can meet the standard in the DEIR because their noise is averaged over a 24 hour period. They don’t usually make much noise from 10 pm till 7 am. This gets averaged in with the 7 am till 10 pm noise and therefore the DEIR concludes the neighbors are not subject to excess noise.

In 1982 as part of the Rec Plan analysis a report by Charles M Salter and Associates (Reference 133 Initial Study June 2007) stated “the Leq of 48 dBA represents the existing typical daytime noise level for the homes on San Marino Dr” If the DEIR is consistent then this is the standard for quarry noise as this is the 82 baseline. The Quarry should be held to this standard. There is no evidence that any of the current measurements come even close to this standard. The DEIR should illustrate this difference.

The noise standard must be an hourly average with a peak limit. If the DEIR chooses without basis to ignore the baseline conditions because of the additional residences built near the Quarry then the standard used should be the San Rafael City noise ordinance as the receptors affected are in the city. The DEIR’s should include an evaluation of Quarry noise compliance using the City ordinance. No measurement of the effect of reducing operating hours on noise significance is included. No consideration in the DEIR is given to the total quality of the noise and its effect.

However the whole noise analysis is fatally flawed. The DEIR should determine what can be done to reduce (mitigate) the noise of the operation by such things as enclosed
crushers, trellex systems, use of only wheeled vehicles, effectively lined barges, reduced operating hours, and so forth. The Quarry has installed new back up beepers to the relief of the neighbors. The same approach (best available technology) should be taken on noise generating equipment. How do you quiet it down? How do you reduce the noise at the source should be the objective of the DEIR alternatives.

As an example see noise suppression recommendations for specific Quarry operating equipment of Bollard & Brennan, Inc (attached as EXHIBIT IV) in a study prepared for Dutra Materials on Nov 4, 1999.

5 - Blasting (topic 10) vibrations should be reduced and the study by Revey Associates, Inc. Jan 2007 (appendix J Draft EIR) is fatally flawed. There are no empirical data from actual tests at SRRQ of various ranges of explosive timing, of charge per delays, etc. No measurement of vibrations in any structure appear to have been made. There is no evidence that Mr. Revey ever experienced a blast in a nearby structure. Yet Revey concludes on figure 2.6 of page 252 of his report in Appendix J of the DEIR that the rock Quarry's blast are "barely perceptible". He does not give any evidence that he conducted a single test blast on site or for that matter a regular Quarry blast wherein he simultaneously measured the effect of a blast on a structure and in the ground.

The 1982 base line blasting criteria from the Salter Report for the 82 Rec Plan (see above referenced study by Salter) is "barely perceptible". But that is not the case now as evidenced by all the complaints filed with the county. The County filed with Judge Sutro in Case No. CV014602 an Exhibit dated June 12, 2006 containing all the complaints it had received concerning Quarry operations. There were a total of 246 complaints of these 99 or 41% complained about blasting. The blasting standard in the Draft EIR should be redone and based on measurements within a structure. The standards, protocols and techniques used should established by having people experience the blast to confirm it is "barely perceptible" (the USGS uses a similar system in evaluation of earth quakes in addition to the Richter scale.)

In Sept of 2000 Blast Dynamics Inc (see attached EXHIBIT V) conducted a series of blast tests for the SRRQ. In that study tests were conducted at 16 Marin Bay Park in which simultaneous measurements of PPV (inches per second) were made on instruments installed in the house and in the yard outside. The PPV measurements in the house were about twice what the instrument on the ground in the back yard recorded. Until Revey does actual testing on structures for blasts on the north wall of the main pit his data and conclusions are irrelevant. We are appalled that only half a scientific study was conducted and contained in the DEIR and was used as a basis for conclusions. This defect must be corrected in the DEIR.

In March of 2005 Wilson, Ilhrig and Associates of Oakland Calif conducted a study(See EXHIBIT VI) of noise and blasting vibrations for the Lexington Quarry of Santa Clara County. This quarry situation is similar to that of SRRQ in that it is surrounded by residences. Wilson etal concluded, "the vibration limit of 0.5 in/sec (PPV) is chosen to limit building damage but does not address human response to these phenomena...in
the opinion of WIA a vibrations limit of 0.10 in per Sec(PPV) ... would be appropriate to avoid significant impact to humans... See ANSI Standard 2631, Addendum 2631/DAD. " The DEIR for the SRRQ should include evaluation and development of protocols and techniques for blasting that will achieve a 0.10 ppv (inches per second) standard as measured within adjacent structures for all blasts at the SRRQ.

The basic problem with all the blast studies done for the Quarry that have been released and there have been 4 or 5 by various "experts" is that none have tried to reduce the impact of blasts on people living in houses. They have all been designed to support current Quarry practice and relate only to potential physical damage to structures without any consideration to the impact on people. For example Floyd (see ref above) in his report clearly states that a reduction in the pounds of explosive per delay will reduce the vibration impacts of a blast. The Quarry has never run tests (or a least has never published any test results) to determine what happens when in terms of ppv in nearby structures when you scale back pounds of explosive per delay. The DEIR is incomplete until such blast testing has been completed along with any other considerations such as electronic detonation which might reduce and mitigate blast effects on the near by neighbors. Whatever is recommended must be verified by actual on site tests.

When you have windows and doors rattle, pendulum clocks stop, pictures move on the wall, double panned windows that constantly need replacing, and chairs move on the floor and pots rattle loudly due to a blast it is more than "an Annoyance" and is a long way beyond the "barely perceptible" standard of the 1982 Rec Plan.

There is no consideration in the DEIR of the long term effects of blasting on nearby structures. A home built in 1989 near the Quarry would for example have by now been hit with over 1000 blasts. At the proposed operating period of at least 17 years there will be another 1700 explosions slamming into nearby houses. It is inconceivable that this constant hammering will not have some deleterious effect on structures.

6--Reclamation Plan Berm NE Quadrant-- (topics 5, 10 and 13) Section 3.4.5 spends a considerable amount of discussion on a phased Rec Plan for the NE Quadrant the "brick Resource" Area of the property as identified in the original 82 Rec Plan and by Judge Sutro in his rulings. It is proposed that some 2 million cubic yards of material be moved about within the quadrant over a 17 year period. The prime purpose of this exercise is the disposal of "pond fines(a mine waste material) by mixing them with material that is already located in the NE Quadrant.

The base line history of the NE Quadrant is one of a brick resource area. It was mined for its brick resource by the brick works until sometime in the mid 90's There has never been from the record any rock quarrying in that portion of the property. The quarry began a waste disposal operation sometime in the late 90's when the Quarry built ponds for disposal of waste fines from their gravel washing operation. Judge Sutro in his ruling prohibited the quarry from any activity in the "brick resource area" (NE Quadrant) This action had the effect of reducing noise and dust impacts from the fines pond building and mixing operation in the NE Quadrant on the neighbors. However in ARP 04 it is
proposed to reinstate the pond fines program with a 4 phase program under the guise of reclamation. and to build a new berm, that is 70 feet above grade, 300 feet wide and 600 feet long along the border of the quarry next to Canterra way beginning upon approval of a mining permit and lasting in 4 phases for what appears to be 17 years.

From page 3-26 table 3-2 of the DEIR in regard to the NE Quadrant it appears there will 6 years of grading in the first phase which involves the berm building. There will be another 6 years of tearing down the berm in the end called phase 4. The DEIR states on page 4.7-23 that the construction of this berm would occur over a ten week period during the dry season. ( 10 weeks is 60% of the summer season) for 6 years. How the DEIR can conclude this is a “temporary impact” is amazing and just plain wrong.

This proposed new berm along the Quarry border abutting Canterra Way would move quarry heavy equipment activities to with in 300 feet of the residences of Marin Bay Park. There is now a buffer in the form of a berm some 1000 feet plus or minus between the quarry activities and the residences. This would be a giant step backwards in terms of impacts on the nearby residences.

In terms of noise levels as per the DEIR this new activity would increase noise levels from 50 – 52 dBA range to 65 to 74 dBA range. As the dBA measurement scale is logarithmic an increase of about 15 decibels is normally perceived as more than doubling of existing noise. The DEIR states “this increase in noise levels during the construction of the berm in the NE Quadrant is considered a significant though temporary impact” We conclude the DEIR is faulted and should reevaluate its conclusion Two periods of 6 years of 10 weeks (60%) of each summer (this is the time of year when windows are open patios are being used) as stated in DEIR is not by any stretch of the imagination a temporary impact. It seems insane to build a new berm and unnecessarily move Quarry operations closer to residences when one berm is already in place.

This entire activity should be recognized for what it is--a part of Quarry waste disposal operations. From table 3-3 page 3-35 it can be seen that over the “reclamation” 4 phases there will be 318,000 cubic yards of pond fines mixed at a ratio of 1:4 with material already located in the NE Quadrant. A total of some 2 million cubic yards of material will be moved about within the NE Quadrant. This same table shows only 58,500 cubic yards of material is imported from other parts of the property to the NE Quadrant.

The Quarry often sells overburden which is shipped off site – there is no analysis of this activity in the DEIR nor its impact on the REC Plan or operational plan. Pond Fines disposal is an ongoing waste disposal program. NOT RECLAMATION and the DEIR should treat it as operations which cannot be expanded under the current Quarry zoning.

There is no mention as to the annual output of pond fines in the DEIR. The maps show some pond fines currently stored in the NE Quadrant but there is no indication as to the quantity of this material on hand in the ponds. It is hard to believe that the small ponds shown on the DEIR maps contain 318,000 cubic yards of fines. The DEIR should quantify and clarify this inconsistency in its evaluation.
The Quarry’s proposal in the Initial Study page 33 stated” the quarry no longer produces a washed product and does not intend to in the future”- in other words no pond waste fines would be produced. The DEIR must explain how 318,000 tons of fines are produced for mixing in the NE quadrant. There should be detailed supporting quantitative data and notice of this change re pond fine production and its proper evaluation as an operating condition. It is not reclamation.

We as a neighborhood experienced the unbearable noise and dust of the pond creation exercise in the late 90's and onward till Judge Sutro stopped the practice. It was not possible to use yards and patios or to really have any outdoor enjoyment of your property when this was going on . . . This purported long term "reclamation" in the NE Quadrant is not in conformance with the 82 Rec. nor with the statement of the plan that “ the SRRQ is essentially a no waste operation”.

The existing berm is a shield – the impact of building new one, tearing down the old one and then tearing down the new one defies any kind of logic and would seem to be a plan to maximize adverse impacts of the Quarry operation. It certainly would increase greenhouse gases (not clearly evaluated in connection with this part of the REC Plan) and fugitive dust generation. There are no visual simulations of this proposed berm and associated activities over time and therefore no possibility to judge visual impacts though the 4 phases proposed.

7 Maps With respect to the berm and the maps generally in the draft DEIR they are not particularly useful as it is impossible to determine elevations from any of them past, present or future as there are no readable contour line elevations. Further with regard to maps there is no way to compare footprints or features from one map to another as there are no overlays which would allow this . The draft EIR does not include a sequential mine plan showing how, when and where mining activity will take place over time.

We appreciate this opportunity to submit our concerns about the proposed REC Plan and Mining Permit for SRRQ. We appreciate the tremendous effort that has been made to produce this document and look forward to its being updated and refined to better reflect the adverse impacts the SRRQ operations has on our lives and to provide Alternatives to the Quarry submission that will eliminate those impacts.

Sincerely Yours,

William E Hosken  Ruth Anne Hosken

Attachments : Exhibits I through VI
Pickles

Look at this! I took the dog out yesterday and now everyone's all sorry again.

Look! I'm in the air. They can never understand me.

I'm out of cleanliness, but we are experts in using the air for communication.

Exhibit I

Time: 32 AM. The immense rising dust cloud now occupies the entire face of South Hill and is beginning to dissipate in a northeast direction due to winds from the southwest off the Bay. Note the green “porta potty” is still visible for scale.

Exhibit II
The visit began with a view of the new South Hill rock extraction site from the water tower at Marin Bay Park. The time is 11:29 AM August 9th, 2007.

Exhibit III
INTRODUCTION

The San Rafael Rock Quarry, a Dutra Company, is located at 1009 Point San Pedro Road in San Rafael, California. Dutra Materials retained Bollard & Brennan, Inc., consultants in acoustics and noise control engineering, to prepare an environmental noise assessment of their San Rafael aggregate quarry. The specific objectives of this assessment are as follows:

- To quantify the noise emissions of the quarry at the nearest noise-sensitive land uses to the quarry site, and
- To identify those noise sources associated with the quarry operations which are most audible at those nearest noise-sensitive land uses, and

- To recommend noise control measures for those noise sources which are identified as being most audible at the nearest noise-sensitive land uses to the quarry site.

The approach to achieving these objectives consisted of an intensive 2-day on- and off-site ambient noise measurement survey, observation and measurement of each major noise-producing component of the quarry, analysis of the collected data, and research into noise mitigation options. This report summarizes the conclusions of the noise assessment to date.

NOISE FUNDAMENTALS AND TERMINOLOGY

Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to the reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB. Another useful aspect of the decibel scale is that changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by means of the standardized A-weighting network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this document are in terms of A-weighted levels. Figure 1 illustrates common noise levels associated with various sources.
CONCLUSIONS

The noise emissions of the San Rafael Rock Quarry, as measured by Bollard & Brennan, Inc. on October 26-27, 1999, were below the Marin County and City of San Rafael recommended 60 dBA Ldn exterior noise level standards (applicable to new projects) at the nearest residential areas. The quarry noise emissions were higher than the Marin County Noise Element hourly average noise level standards (again applicable to new quarries affecting residential uses) by 5 dB during both daytime and nighttime periods. These facts indicate that the concerns expressed by the local residential communities may be more related to specific noise sources which they consider to be objectionable, rather than the overall levels of noise emitted by the quarry.

This analysis concludes that the most objectionable sources of noise present on October 26-27, 1999 were associated with the operation of back-up boomers, the deister, and the main scalping screen (E-5). Treatment of these objectionable noise sources would likely have a positive effect on the local community. Although treatment of these sources would not likely result in a dramatic reduction in overall plant noise levels, an incremental reduction would be expected.
The San Rafael Rock Quarry retained the services of Bollard & Brennan, Inc., consultants in acoustics and noise control engineering, in October of 1999 in order to conduct a noise measurement survey. The purpose of the study was to quantify noise generated by the SRRQ and to recommend noise control measures for the most significant noise-producing machinery at the Quarry. The conclusions of that analysis were, amongst others, that noise generated by two particular pieces of heavy equipment should be reduced to the extent possible through use of polyurethane lining where the rock impacts against large steel plates. These noise treatment recommendations have been completed and are reflected in the mitigation actions outlined in Phase 1 and Phase 2.

In our on-going effort to reduce the noise generated by our facility, we requested that Bollard & Brennan conduct a follow-up study upon completion of Phase I to measure whether the installation of the polyurethane lining resulted in a decrease in noise levels. Bollard & Brennan conducted a Continuous Noise Level Survey, for a seven day period, with the cooperation and involvement of Heritage Drive and Marin Bay Park residents. Amongst other findings, this study concluded a clearly noticeable decrease in noise levels from the treated equipment. Results from this study are included in the attached report.

### Noise Mitigation Steps Description of Mitigation Actions

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<tr>
<th>PHASE</th>
<th>DESCRIPTION OF MITIGATION ACTIONS</th>
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<tr>
<td>PHASE 1</td>
<td>Nov 99 – March 2000</td>
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<td>1. Install rubber grizzly bars in the primary plant’s deister.</td>
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<td>2. Install polyurethane sheets at the deister and all other impact areas in the primary plant.</td>
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<td>3. Completely re-line the secondary plant’s E-5 hopper chute.</td>
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<td>Total cost: $51,250.00</td>
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<td>PHASE 2</td>
<td>March – August 2000</td>
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<td>1. Install polyurethane lining at the discharge end of the secondary’s E-5.</td>
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<td>2. Install polyurethane at the rock transfer point between the primary and secondary plant.</td>
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<td>Total cost: $22,000.00</td>
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<td>PHASE 3</td>
<td>Present – Late October 2000</td>
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<td>1. Install sound curtain at the primary plant’s deister. The steel fabrication is being conducted internally and is based on a design-build proposal presented by West General. Upon completion of fabrication, West General will conduct a site visit to measure the framing for a custom built sound curtain. Estimated project completion is late October.</td>
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<td>Estimated Cost: $40,000.00</td>
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WHAT DETERMINES HOW INTENSE THE GROUND VIBRATIONS WILL BE?

There are many different factors such as geology, confinement of explosives, and blasthole detonation sequence that can affect the intensity of ground and air vibrations. However, the two things that predominantly determine the strength of the vibrations are:

- The amount of explosives detonated at one time
- The distance from the actual blast site to the point of concern

The explosives in a blast are not detonated at the same time. Instead, they are fired in a predetermined sequence with small time delays separating the charges. These delays are only a few thousandths of a second but are critical in controlling the blast’s performance. Blasters refer to the amount of explosives detonated during these time intervals as the “charge weight per delay.” The charge weight per delay used by the San Rafael Rock Quarry typically ranges from 400 to 500 pounds depending on the depth of the blasthole.

The distance from the blast site to the location where the ground vibrations are felt or measured is important because vibrations will die out as they travel away from their source. The vibrations created in the ground by a blast could be compared to waves created when you drop a rock into a lake. The waves spread out in all directions and decrease in intensity as the distance from the source increases.

HOW CLOSE TO A HOUSE OR BUILDING MAY A COMPANY LEGALLY BLAST?

Blasting regulations restrict the maximum allowable charge weight per delay based upon the distance to the nearest structure. These limits, based on extensive research involving thousands of blasts, are designed to prevent cosmetic damage to even the weakest structures.

There are also regulations that limit the vibration intensity recorded at structures. The nationally accepted, vibration limit required to prevent cosmetic damage is 0.5 inches per second (ips). To ensure that the vibrations are well below this level, the San Rafael Rock Quarry uses up to five seismographs to monitor every blast.

WHAT IS A SEISMOGRAPH?

A seismograph is a very sensitive electronic instrument designed to measure and record the intensity of ground and air vibrations.

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**Table 2. Vibration data from test blasts**

Blast Dynamics, Inc. - October 2000
24 March 2005

Mr. Rob Eastwood
Santa Clara Planning Office County Government Center
70 W. Hedding St., 7th Floor, East Wing
San Jose, California 95110

Subject: Review of the Noise Section of the Lexington Quarry
Use Permit and Expansion DEIR

Dear Mr. Eastwood:

At the request of homeowner Cathy Del Mano (a neighbor of the Lexington Quarry), Wilson, Ihrig & Associates, Inc. (WIA) has conducted a technical review of the noise section of the Lexington Quarry (Quarry) Use Permit and Expansion DEIR (DEIR). Our review consisted of an evaluation of the assumptions, analysis and conclusions reached in the DEIR and the DEIR’s underlying studies concerning environmental noise and vibration impacts for the proposed Quarry expansion plan presented in the DEIR (the “Project”).

The focus of WIA’s review was with regard to impacts to the residences adjacent to the Quarry. As part of its review, WIA obtained ambient noise measurements on a Saturday to specifically evaluate the proposed plan by the Quarry to conduct full operations on Saturdays. Our review also addressed the impacts due to noise from extended hours of operation on weekdays and due to noise and vibration from the proposed blasting activity at the Quarry.

General Comments

The DEIR purports to address environmental impacts due to physical expansion of the Quarry, extension of the Quarry operations to include Saturdays, extended operations hours during the week, and the use of blasting to excavate Quarry rock. WIA takes issue with the DEIR’s conclusions regarding impacts associated with three of the proposed Quarry activities: Saturday operations, extended weekday hours, and blasting. WIA also raises an issue with the DEIR’s characterization of the existing conditions relating to noise generated by the Quarry. Our supporting data, analysis and conclusions are discussed herein.

Exhibit VI
quote from that publication, “Vibration levels that are completely safe for structures are
annoying and even uncomfortable when viewed subjectively by people.” Thus, the DEIR
analysis of the impacts of blasting fails to address noise and vibration impacts to humans.

For the reasons stated above concerning proposed blasting at the Quarry, WBA is of the opinion
that the DEIR is deficient with regard to the criteria used to address air-blast and ground
vibration impacts and using those criteria as blast limits would result in significant impacts to
residents adjacent to the Quarry.

If you have any questions concerning this information, please do not hesitate to call.

Very truly yours,

WILSON, ERRIG & ASSOCIATES, INC.

Richard A. Carman, Ph.D., PE
Principal

RAC/sec
Comment Letter 35: William Hosken

35-1 A Summary chapter is provided in the Draft EIR, and updated in Volume 1 of this Final EIR. Regarding internal inconsistencies in the Draft EIR, please see Master Response 2 in Section 7.2 of this document.

35-2 This general comment does not require a discrete response.

35-3 Please see Master Response 5 in Section 7.2 for a general response regarding the health risk assessment performed for the EIR. See also the response to comments 30-6 through 30-45 for more detailed and technical responses to questions raised on the HRA. Regarding the Onsite study, please see the response to comment 23-18. Neither the reports of Slakey and Associates and Sequoia Analytical, nor the memorandum from Ed Hume, were reviewed for the Draft EIR, but the age of these reports indicates that they would be of limited use in characterizing current or future conditions in the vicinity of the project site. More recent reports, including the 2004 STI report, were reviewed in preparation of the Draft EIR, and the Draft EIR analysis includes modeled emissions based on current production levels and equipment used.

The EIR preparers reviewed complaints filed with the County Department of Public Works in the course of EIR preparation. The EIR does not reach a conclusion of “no dust” as suggested in the comment, but does reach a conclusion that the level of exposure to toxic elements of dust, most notably crystalline silica, are below the threshold of significance (Impact C4.2-10 in Section 4.2, Air Quality). As noted in the comment, the Draft EIR also reaches a conclusion of a significant cancer risk from cumulative exposure to diesel particulate matter emitted by past, current, and foreseeable future Quarry operations and reclamation (Impact C4.2-12 in Section 4.2, Air Quality). In this regard, the conclusion of “significant and unavoidable” is not casual. Because of this conclusion, the Board of Supervisors must make specific findings and adopt a Statement of Overriding Considerations prior to project approval.

35-4 The comment states that the Draft EIR makes no mention of BAAQMD permit requirements relative to dust generation, states that PM-10 emissions are in excess of those allowed by permit and questions the discrepancy of estimated PM-10 emissions with those contained in the Initial Study.

Compliance with the 0.5 Ringlemann Criteria of SRRQ’s air Permit is assessed by the enforcement division of the Bay Area Air Quality Management District (BAAQMD). BAAQMD was contacted to determine the history of violations and complaints associated with SRRQ operations. There have been no documented notices of violations, complaints, or episodes reported by or to BAAQMD for SRRQ during the past 5 years of operations (2002-2007) (BAAQMD, 2008).
BAAQMD permit restrictions for PM-10 emissions are applicable to stationary sources only. The Draft EIR also estimated PM-10 emissions from mobile sources, which are not under the permit authority of the BAAQMD. The estimated daily emissions of PM-10 from current operations is shown in Table 4.2-5 in Section 4.2, Air Quality.

Impact P4.2-6 (Future quarry operations under the proposed AQP could exceed baseline levels of production, with concomitant increases in emissions of criteria air pollutants) in Section 4.2, Air Quality, discusses the potential for increased emissions of PM-10 from the proposed AQP, related to an assumed increase in production of 20 percent above baseline levels. In the impact assessment, predicted increases in emissions are compared to BAAQMD CEQA thresholds (80 lb/day for PM-10), and not to restrictions of existing permits. The assumed 20 percent increase in production would not be expected to generate more than 80 pounds per day of PM-10. See Table 4.2-13.1 in Section 4.2, which has been added in the Final EIR.

Differences in total PM-10 emissions between the Initial Study and the Draft EIR are the result of assumed dust reduction from on-site watering and updated CARB emission factors made available between the dates of preparation of these two documents.

In 2004 Marin County sponsored an air quality monitoring study specific to PM-10 concentrations in the vicinity of the Quarry which is summarized beginning on Page 4.2-14 in Section 4.2, Air Quality.

35-5 The conclusion of a significant and unavoidable cumulative land use impact (Impact C4.7-7) is reached after the application of mitigation measures for the specific noise, air quality, visual, traffic, and other effects that are included in this impact.

Regarding a “best available technology” alternative, there is no single set of practices that might be considered “best” for SRRQ or any other mining operation. SRRQ already employs many state-of-the-art measures to reduce environmental impacts, and many more are specified in the Draft EIR as mitigation measures. The Reduced Alternative to the AQP, analyzed in Chapter 6, Alternatives, includes many of the additional suggestions contained in this comment. See further discussion of alternatives in Master Response 4 in Section 7.2. Reference to BAAQMD Best Available Control Technologies is added to the description of the Reduced Alternative. See Master Response 4 in Section 7.2 and Chapter 6, Alternatives.

35-6 As stated in the response to comment 32-17, the photos in Section 4.1, Aesthetics, accurately reflect conditions around the time of issuance of the two NOPs for the projects. Visual simulations show predicted conditions at the cessation of mining and reclamation under the ARP. Changes associated with recent mining of South Hill are consistent with planned mining permitted under ARP82 and are therefore considered a part of the baseline, and not an impact of the proposed AQP.
The comment states that the use of the 24-hour Ldn noise descriptor applied in the Noise Element of the Countywide Plan for land use compatibility of community noise environments does not capture noise impacts experienced by residents near the quarry.

Of the ten measurements presented in Table 4.7-4, only location LT-1 was a 24 hour measurement for which a 24-hour average Ldn noise descriptor was generated for comparison to the 24-hour Ldn standards of the Countywide Plan. The other nine locations were 15 minute daytime measurements during which the monitoring technician could identify quarry operations as presently ongoing during the monitoring period.

Reclamation Impacts R4.7-1, R4.7-3 and R4.7-4 apply a significance threshold of relative increase in noise level and not the land use compatibility thresholds in terms of Ldn. Impact P4.7-5 applies the land use compatibility threshold of 60 Ldn for the purposes of assessing long term noise compatibility impacts relative to standards contained in the Countywide Plan. However, this impact analysis also identifies the fact that existing noise currently exceeds Countywide Plan daytime standards in terms of short-term Leq standard of 50 dBA and discusses operational mitigation (Mitigation Measure 4.6-1a) as well as noise reduction measures recently implemented (rubberizing of bang boards and improved back-up alarms) that will result in an overall decrease in operational noise levels (both in terms of a short-term Leq and a long-term averaged and penalized Ldn) compared to existing conditions.

The 1982 measurement at San Marino Drive of 48 dBA, Leq may be compared to the 2007 measurement collected at Location ST-8 (Via Montebello) in Table 4.7-4 of 53 dBA, Leq. Differences between these two measurements may be attributed to increased vehicle traffic on Point San Pedro Road as the result of growth and development in the intervening 25 years, and the fact that the Via Montebello monitoring location has a direct line-of-sight (unobstructed) view of Point San Pedro Road, while San Marino Drive does not.

The City of San Rafael also has its own Noise Ordinance implemented in Section 8.13 of its municipal code. The ordinance, unlike the County’s noise ordinance, but similar to the Countywide Plan (see Draft EIR Table 4.7-2), establishes quantitative noise limits. While noise ordinance standards contained in the San Rafael noise ordinance may be used to assess noise impacts of development projects within the City of San Rafael, these standards are not applicable outside of the city and cannot be enforced upon an operator outside of the City and, consequently were not applied in the analysis of noise impacts in the Draft EIR. Regardless, the analysis of noise impacts in the Draft EIR is based on incremental increase or decrease in noise levels. In cases where operational noise levels exceed the short-term standards of the Countywide Plan, a combination of noise control measures and mitigation measures would result in an overall decrease in operational noise levels compared to existing conditions.

Please refer to Master Response 8 in Section 7.2 of this document.
35-9 The comment states that the Draft EIR inaccurately characterizes the impact of berm construction in the NE Quadrant under the ARP as “temporary”.

The proposed berm in the NE Quadrant would be constructed during dry season eight to ten week construction periods and would be completed after approximately the third season. The Draft EIR characterizes the noise impact from berm construction as temporary as such a duration is similar to those associated with project construction impacts of development projects which are commonly characterized as temporary in CEQA documents.

35-10 The comment states that the Draft EIR inaccurately characterizes the impact of berm construction in the NE Quadrant under the ARP as “temporary”. Please see response to comment 35-9. The Mitigated Alternative to the ARP excludes construction of the proposed new berm and also minimizes activities in the NE Quadrant. See Chapter 6, Alternatives, and also Master Response 4 in Section 7.2 of this document.

35-11 SRRQ has reported that they have stopped producing pond fines, and that aggregate washing is not included in the proposed AQP. Therefore, the Draft EIR assumes no future production of pond fines. As stated on page 3-16 of Chapter 3, Project Description, “reclamation” includes stockpiling of topsoil and other materials for future use in site reclamation, including loading and hauling of material to stockpiles for this purpose.

35-12 The comment states that increases of greenhouse gas emissions from Phase I of the ARP was unclear in the Draft EIR.

Greenhouse Gas emissions associated with the ARP are quantified in Table 4.2-12 in Section 4.2, Air Quality. Impact R4.2-3 identifies Greenhouse Gas emissions associated with the Reclamation Plan as a significant impact. See also Master Response 6 in Section 7.2 of this document. Dust (PM-10) generation from proposed phased reclamation grading is considered in the Air Quality analysis. See Impacts R4.2-1 and R4.2-2 in Section 4.2, Air Quality.

35-13 Impact R4.1-3 in Section 4.1, Aesthetics, considers the visual impact of construction of the proposed berm in the NE Quadrant; see also the simulation in Figure 4.1-12.

35-14 Figure 3-17 in Chapter 3, Project Description, shows the approved final contours from ARP82 (in orange) superimposed on the proposed final contours from ARP04. The applicant has not submitted a sequential mining plan, and is not required by SMARA or the County’s SMARO to do so. The ARP includes a timeline for phased reclamation; see Chapter 3, Project Description.

35-15 The comment is noted and appreciated.

35-16 Comment noted. Impacts related to fugitive dust are addressed in Impacts R4.2-2, P4.2-6, C4.2-8 and C4.2-9 in Section 4.2, Air Quality.
7.3 Comments on the Draft EIR and Responses

35-17 The commenter provides a photograph of a fugitive dust plume resulting from a blasting event at the quarry. Fugitive dust effects are considered in Section 4.2, Air Quality. See particularly Impact R4.2-1 (criteria pollutant emissions from reclamation grading phases 1-3); Impact R4.2-2 (criteria pollutant emissions from reclamation grading phase 4); Impact P4.2-6 (criteria pollutant emissions from quarrying operations); and Impact C4.2-8 (cumulative emissions of the AQP and ARP combined).

35-18 The comment provides selected pages from an Environmental Noise Analysis Report prepared for SRRQ in 1999.

This report identifies noise control measures that could potentially be implemented by the Quarry to reduce noise impacts to surrounding residents. The conclusion section of this report identifies the County’s 60 dBA Ldn noise level standard as appropriate for Quarry operations. This section also identifies predominant sources of objectionable noise as being from Deister feeding and loading. Both of these sources have recently been addressed by the Quarry by installation of rubber surfacing on bang boards and installation of new technology back-up alarms.

35-19 The comment provides selected pages from a Blast Vibration Review prepared for SRRQ in 2000.

The pages provided indicate measured vibration data of 0.46 PPV or less at four different distances. These data are consistent with those presented in Table 4.7-5 in Section 4.7, Noise and Vibration.

35-20 The comment provides selected pages from an independent review of an EIR noise section for a permit and expansion project at Lexington Quarry in Santa Clara County, which identifies a lack of analysis in the Lexington Draft EIR with regard to non-structural (human annoyance) impacts associated with noise and vibration from blasting activities. Pages 4.7-29 and 4.7-30 of the SRRQ Draft EIR address human annoyance issues from blasting related to both vibration and over-pressure.
Marin County Community Development Agency  
Attn: Tim Haddad  
Environmental Coordinator  
3501 Civic Center Drive, Room 308  
San Rafael CA 94903-4157  

April 11, 2008  

Dear Mr Haddad  

Draft Environmental Impact Report (DEIR) for the San Rafael Rock Quarry (SRRQ) Amended Quarry Permit and Amended Reclamation Plan (AQP/ARP)  

Thank you for the opportunity to comment on the DEIR in respect of the Quarry’s plans.  

We realize that we are supposed only to comment on the DEIR itself and whether it covers all relevant points, however there has been much comment, notably at the Supervisors’ Hearing and in the Press, that the neighbors are whining and the Quarry is a good neighbor. We would like to briefly rebut these arguments:  

- The Quarry was indeed “there first” but this is not a valid argument for continuing operations, rather operations should be evaluated in the current context of a mix of residential/commercial uses, neighborhood long-term plans and other relevant information  
- Neighbors have been accused of failing to do their due diligence before purchasing their homes. In fact, the Quarry was scheduled to close in the 1990s and therefore prospective purchasers relied on those representations prior to purchasing and could therefore reasonably expect that the Quarry (& the County as enforcer of the permit) would also live up to their commitment  
- Health hazards identified in the DEIR were not fully known or appreciated when residents moved into the neighborhood; this is new information  
- The Quarry has only “cleaned up its act” (relatively speaking) after being sued by neighbors, state & county. It acts only when there is a real or perceived threat to its operations rather than as a pro-active community member  
- The Quarry owners have violated planning laws in the past by constructing unpermitted buildings  
- The Quarry is not the only supplier of needed aggregate, neither is it the cheapest and much evidence has been put forward to support this claim  

On the DEIR itself we find that while it covers a broad swath of data and analysis there are several areas where we believe the data is lacking or conclusions are not correct.
Land Use & Planning

The DEIR concludes that there can be no mitigation for incompatible land use planning. We believe this conclusion ignores 2 possible options:
- closure of the Quarry immediately and cessation of operations
- adoption of best possible management & mining practices

The lack of consideration of immediate closure as an option pervades the Report. This alternative is given scant, if any, real analysis and the revised EIR needs to better address this option.

The DEIR presents in Appendix O a list of present operating practices of other quarries. What it doesn’t do however is identify which, if any, represent best operating practices. The revised DEIR must identify best management practices available regardless of where they are being used e.g. both domestically or internationally, and analyze what impact adoption of these practices might have on mitigating land use incompatibility. The lack of consideration of best management practices as an option also pervades the Report and relates to other DEIR topic areas (5, 9, 13)

Air Quality

The DEIR concludes “no additional mitigation is available to further reduce cancer effects…..”.

Again we believe this conclusion is incorrect as immediate closure would reduce on-going effects. We agree that it would not reduce cumulative past effects but nonetheless would be a valuable step in reducing the hazards for the future. In fact the ARP/DEIR does not include mitigation practices to clean up risks created by material produced by past operations.

The DEIR really only addresses cancer effects in the abstract, it does not correlate to actual incidence of cancer in and around the area. Although it is probably not possible to show cause and effect, a map of cancer incidence overlays with the area would be helpful.

The DEIR does not discuss fully the incidence of other air quality related diseases such as asthma or emphysema.

The DEIR needs to draw clearly the distinction between silica and crystalline silica, the latter only produced as a result of mining activities and shown by many organizations, including the WHO, to be a danger to the public and not just those working directly with the material.
The DEIR air quality analysis also took place over the fall/winter months when Quarry activity is substantially reduced and, due to the dampness, dust from the Quarry is also reduced. The DEIR needs to have analysis conducted during the summer months when dust is particularly prevalent. In fact, a recent blast a couple of days ago produced a huge dust cloud that very clearly was blown over the resident’s housing.

Noise

The DEIR states:

“This section evaluates the potential for the projects to cause new or more severe noise impacts”

Again, the DEIR thus fails to identify or recognize the need to reduce existing noise levels and blasting impacts. The DEIR implies that existing noise levels are an acceptable baseline when the evidence, in the form of neighbor complaints, clearly shows the opposite is true.

The DEIR also states that “[a loud, short duration noise] is often more intrusive that the constant low hum of an engine.” This statement is also not borne out in fact from the neighborhood observations. Particularly the constant low ‘hum’ of the Brickwork’s fans, which operate until the early hours of the morning.

Therefore, any analysis and conclusions which are derived from utilizing existing noise levels are flawed.

The DEIR makes comparison of noise measurements at the property line with the standards outlined in the Marin Countywide Plan Update of 2007. The benchmarks for allowable noise exposure (table 4.7-2) show hourly Leq during daytime of 50db and nighttime of 45db. Table 4.7-3 then outlines what operational noise emission levels were in 1982 for various stationary equipment – the lowest reading was 78 and the highest was 90. So even the baseline year by far exceeds the County’s benchmarks by almost 70%.

Clearly, even though residents have supposedly “adapted” to the baseline level, this baseline level is totally inappropriate given the County’s benchmarks. The DEIR should be amended accordingly.

There are enforceable noise standards that have been enacted by the City of San Rafael. However, the DEIR does not discuss or compare the Quarry/Brickworks to them. The DEIR needs to be amended to include a comparison because the receptor side of the noise impacts are all residences located within the City of San Rafael.
Noise levels will also vary depending on the location of the originating noise and various other environmental factors. The DEIR consultants also measured noise at various locations in the Pt San Pedro area. If I understand the table correctly, Table 4.7-4 indicates that all readings were above the County's Leq hourly levels and a large number were above the maximum benchmark levels. This data was only taken on 5 separate days and there was no data collected for evening operations.

Further the noise data presented is averaged over 24 hours which gives a misleading analysis of the impact on the community. Noise data should be presented in terms of an average hourly level, with a peak limit, over the day so a true picture of the impacts can be determined. As the Quarry operates past 5pm weekdays, noise prevents residents from enjoying a peaceful evening outside which would otherwise be expected. Visitors to our home have often remarked on the noise and queried the source.

The DEIR also concludes that noise from the proposed berm construction in the NE Quadrant is a temporary impact. How it reached that conclusion when construction occurs during the dry period i.e. summer for 10 weeks at a time over a 6 year period is beyond comprehension.

Table 4.7-5 presents blast data from mid-September 2005 to end-October 2005. There are a number of problems associated with this table:

- Short-time period of testing
- Testing period is outside the peak production period of the Quarry operations i.e. summer
- Measurements are not taken inside a structure, they are all outside and this ignores fact that effects will vary significantly depending on whether the house sits on rock or mud, whether it is a single or 2-storey structure and also where the blast is located in the Quarry

The data is therefore significantly incomplete and as a result conclusions drawn from it will be incorrect.

The data is also incomplete as it omits the following:

- there is no comparison to other quarry's blasting practices or to best management practices. For example, the Petaluma quarry has a limit of 200lbs per delay whereas SRRQ has NO limit and based on table 4.7-5 routinely blasts at 600lbs per delay – 3 times the Petaluma limit.
- missing are the results from blast testing conducted by the Quarry (testing was reported in the Independent Journal on 8/13/00 but the results were never released).
- in September of 2000, Blast Dynamics Inc conducted a series of tests for the SRRQ (study not mentioned in the DEIR). In that study conducted at 16 Marin Bay Park, simultaneous measurements of peak particle velocity (ppv) were made on instruments installed in the house and outside. The measurements inside were about twice the level the outside instruments recorded
Figure 4.7-4 shows the location of homes of neighbors who lodged complaints between 4/15/05 and 9/29/06. This figure is incomplete as complaints from our residence are not included – I have emails sent to E. Steger during the period. If data is missing then the figure presents a misleading picture of the situation.

Further, the DEIR states that the blast levels are lower than those outlined by the US Bureau of Mines intended to prevent cosmetic crack damage. There are a couple of issues with this analysis:

- This applies only to structures not to people
- No mention is made to the multiple payments made by Dutra to various homeowners to compensate them for damages to their structures
- The analysis ignores another Bureau of Mines study conducted in the 1980s which concluded that:
  - individuals are extremely sensitive to vibration. “When most individuals experience blast-induced vibration, it seems to be much higher in intensity than actual” (quoted in “Effective Blast Design and Operation”, Lucia, FJ, Terra Dinaminica LLC, 2003

- A study in March 2005 by Wilson, Ilrthg & Assoc on noise and blasting vibrations of the Lexington Quarry is not mentioned in the DEIR. This quarry is also, like SRRQ, surrounded by residences. The study concluded “the vibration limit of 0.5 in/sec (ppv) is chosen to limit building damage but does not address human response to these phenomenon….in the opinion of WIA a vibration limit of 0.10 in/sec (ppv)…would be appropriate to avoid significant impact to humans…see ANSI Standard 2631, Addendum 2631/DAD

Revey’s study is mostly a hypothetical analysis of data, and does not include any data from physical experiments and therefore does not include any analysis of the impacts of changes in the way blasts are conducted e.g. by changing the charge per delay, electronic ignition etc. Actual tests should have been conducted and the effects measured – how else will you know if the proposed mitigation measures are acceptable?

The DEIR needs to consider the following mitigation measures:

- Immediate cessation of mining operations
- Reduced hours of operation
- Comparison of best management practices and technology (addressed in part but no substantive comparisons performed or are dismissed as economically infeasible)
- Use of City of San Rafael Noise Ordinances in place of recommended but unenforceable County guidelines
- Reduced truck trips
- Discuss alternatives that could be implemented to reduce the blasting impact and conduct testing to determine the impact of these alternatives e.g. reduce lbs/delay to that of the Petaluma Quarry or lower if determined to be best practice elsewhere
Aesthetics

The DEIR is deficient in several areas:

- Visual analysis is out of date. South Hill mining has significantly changed what is currently shown in the DEIR
- There is no visual analysis showing the various stages of the reclamation over the proposed time frame (17 years), only the end point
- No visual representation of the proposed berm
- There are no sectional drawings with an appropriate scale or comparison to other objects to assess the relative size of the project especially the berm
- Contour maps are missing their scale

Conclusion

The major flaw associated with the DEIR is that it does not properly examine alternatives to the Quarry’s proposal which would or at least have the potential to significantly reduce the identified, unavoidable impacts. The main alternative is, of course, to cease operations within the short-term. Another is to reduce the proposed 17 year operation/reclamation period substantially. And yet another would be to implement best management practices in conjunction with a reduced operating timeframe. All of these alternatives deserve proper consideration.

Thank you again for the opportunity to comment.

Yours truly,

Andrew Stokes & Ingrid Cornelissen
54 San Marino Dr
San Rafael CA 94901
Comment Letter 36: Andrew Stokes and Ingrid Cornelissen

36-1 As noted these comments go more to the merits of the project, and to assertions or impressions from the hearing on the Draft EIR, and not to the environmental analysis.

36-2 Please refer to the response to comment 35-5 regarding best management practices. Regarding the suggestion that requiring immediate closure of the Quarry is an option open to the County, as noted in Chapter 3, Project Description (page 3-15), the Marin County Superior Court found and ordered that SRRQ has a vested right to continue to mine the Main Quarry Bowl to the extent that doing so is profitable, without respect to depth or duration of the mine pit, and to mine a portion of South Hill, as shown in ARP82. This suggestion therefore appears to be infeasible. Please see Chapter 6, Alternatives, for further analysis.

36-3 Regarding the suggestion that immediate closure of the Quarry would mitigate cancer health risks, please see the prior response. The comment regarding “mitigation practices to clean up risks created by material produced by past operations” is unclear. An epidemiological study of cancer incidence around the Quarry is beyond the scope of an EIR. Risk of non-cancer diseases such as asthma and emphysema are considered as part of the chronic health risk assessment. See Impact 4.2-10 in Section 4.2, Air Quality. Regarding health effects of exposure to crystalline silica, see the response to comment 23-1, and Master Response 5 in Section 7.2 of this document. It is unclear what is meant by “The Draft EIR air quality analysis also took place over the fall/winter months….” No ambient air quality monitoring was conducted for the EIR. The EIR relies on modeling of air emissions which take into account meteorological conditions and ground moisture conditions. The STI study, conducted from April – June of 2004, was not conducted for the EIR, but the EIR reviews its results.

36-4 The comment states that the Draft EIR does not identify a need to mitigate existing noise from blasting and quarry operations and cites noise from fans at McNear’s Brickyard as an example of a constant noise source that is found intrusive. The comment also states that noise monitoring conducted in 1982 indicates that stationary equipment operations at the Quarry exceed County standards for allowable noise exposure. The comment then suggests that the standards contained in the City of San Rafael’s municipal code are more appropriate than those of the Countywide Plan. The commenter interprets the data in Table 4.7-4 to indicate that all locations experience noise levels that exceed County standards. The comment suggests that use of a 24-hour average at one of the ten monitoring locations is inappropriate and misleading. The comment disputes the characterization of noise from berm construction as a temporary impact.

The purpose of the Draft EIR Noise section is to evaluate whether the proposed project would result in a significant increase in noise or vibration levels compared to baseline conditions. The baseline takes into consideration permit limitations, conditions that apparently existed in 1982, when the Quarry became a legal nonconforming use, and
conditions at the time of the Notice of Preparation. While the existing noise levels are relevant to establishing existing conditions, it is not the purpose of the EIR process to identify mitigation for existing conditions. It should be noted that the applicant recently implemented noise control measures in the form of surface treatment to bang boards and new technology back-up horns on mobile equipment.

Noise from fans at McNear’s Brickyard was captured during noise monitoring at Locations ST-6 and St-7 presented in Table 4.7-4. Noise measurements in these locations were dominated by truck and car traffic. During periods of no traffic, noise levels at these locations were 49 dBA. While operations of McNear’s Brickyard contribute to the existing noise environment, the projects propose no change to brickyard operations.

Data from monitoring of noise from stationary equipment operations presented in Table 4.7-3 correspond to a distance of 100 feet. The County’s standards presented in Table 4.7-2 are standards for noise levels at the property line of the potentially affected land use. While the attenuation of operational noise from 100 feet from the equipment out to the property line could be calculated, the presence of intervening topography acts to further attenuate equipment noise. It is for this reason that field noise measurements were collected at the nearest residences, as presented in Table 4.7-4 in Section 4.7, Noise and Vibration.

The City of San Rafael also has its own Noise Ordinance implemented in Section 8.13 of its municipal code. The ordinance, unlike the County’s noise ordinance, but similar to the Countywide Plan (see Draft EIR Table 4.7-2), establishes quantitative noise limits. While noise ordinance standards contained in the San Rafael noise ordinance may be used to assess noise impacts of development projects within the City of San Rafael, these standards are not applicable outside of the City and cannot be enforced upon an operator outside of the City and, consequently were not considered as standards in the analysis of noise impacts in the Draft EIR. Regardless, the analysis of noise impacts in the Draft EIR is based on incremental increase or decrease in noise levels. In cases where operational noise levels exceed the short-term standards of the Countywide Plan, a combination of noise control measures and mitigation measures would result in an overall decrease in operational noise levels compared to existing conditions.

Noise data presented in Table 4.7-4 in Section 4.7, Noise and Vibration, capture all ambient noise sources in the area including motor vehicle traffic along roadways. County standards presented in Table 4.7-2 are specifically for stationary noise sources such as mechanical equipment and industrial facilities, or mobile sources which are outside the control of local municipalities. To interpret consistency of existing operations with County standards presented in Table 4.7-2, the monitored values at locations ST-2, ST-3, ST-4 and ST-5, which experience daytime noise levels of 50.5 to 55.5 dBA, Leq would be those with the least contribution from roadway noise. These data suggest that existing operational noise levels may be exceeding the 50 dBA daytime County benchmarks to be
used in planning and siting of land uses as stated on Page 4.7-27 in Section 4.7, Noise and Vibration.

Of the ten measurements presented in Table 4.7-4, only location LT-1 was a 24 hour measurement for which a 24-hour average Ldn noise descriptor was generated for comparison to the 24-hour Ldn standards of the Countywide Plan. The other nine locations were 15 minute daytime measurements during which the monitoring technician could identify quarry operations as presently ongoing during the monitoring period. Table 4.7-4.1 is added to Section 4.7, Noise and Vibration; it provides a breakdown of the hourly average noise levels over a 24-hour monitoring period on October 2\textsuperscript{nd}, 2006 at location LT-1:

<table>
<thead>
<tr>
<th>Hour (Starting Time)</th>
<th>Hourly Average Noise Level (dBA, Leq)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:00 a.m.</td>
<td>43.1</td>
</tr>
<tr>
<td>1:00 a.m.</td>
<td>43.2</td>
</tr>
<tr>
<td>2:00 a.m.</td>
<td>43.3</td>
</tr>
<tr>
<td>3:00 a.m.</td>
<td>43.1</td>
</tr>
<tr>
<td>4:00 a.m.</td>
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As can be seen from Table 4.7-4.1, nighttime noise does not exceed the nighttime County benchmark. Daytime noise exceeds the daytime County benchmark by one to three dBA for 8 of the 15 daytime hours monitored. Because these data were collected remotely, specific noise sources (stationary or mobile) contributing to these noise levels were not identified.

The proposed berm in the NE Quadrant would be constructed over eight to ten week periods each dry season and would be completed after approximately the third season. The Draft EIR characterizes the noise impact from berm construction as temporary as such a duration is similar to those associated with project construction impacts of development projects which are commonly characterized as temporary in CEQA documents.

36-5 Please see Master Response 8 in Section 7.2 of this document.

36-6 Regarding cessation of mining operations, see the response to comment 36-3. Regarding reduced hours of operation, see Mitigation Measure P4.6-6b in Section 4.6, Land Use and Planning. Regarding best management practices and technology, see response to comment 35-5. Regarding use of City of San Rafael Noise Ordinance, see response to comment 36-4. Regarding reduced truck trips, and measures to further limit blast vibrations, see the description and analysis of the Reduced Alternative to the AQP in Chapter 6, Alternatives; however, see also the modifications to this alternative in Master Response 4 in Section 7.2 of this document.

36-7 Please see the responses to comments 32-17 and 35-6.

36-8 Regarding an alternative that would include immediate cessation of mining, please see the response to comment 36-2. For the same reason that this is infeasible, i.e., the Court’s finding that the Quarry has a vested right to continue to mine without regard to depth and duration, reduction of the mining extent or period, as suggested here, is also infeasible. The Mitigated Alternative to the AQP, and the Alternative Reclamation with Alternative Beneficial End Use Alternative to the ARP, both incorporate additional measures and restrictions to reduce the impacts of mining and mine reclamation on the surrounding neighborhoods. See also Master Response 4 in Section 7.2 of this document.
Comment Letter 37

Tim Haddag
Environmental Planning Coordinator
3501 Civic Center Drive
San Rafael, Ca.

RE: SAN RAFAEL ROCK QUARRY

The San Rafael Rock Quarry is very similar to what once was the Hutchinson’s Gravel Quarry in Greenbrae. The Hutchinson’s Gravel Quarry became what is now Larkspur Landing. As a former resident of Greenbrae I found the quarry to be a much better neighbor than the high density Larkspur Landing that now exists. The San Rafael quarry site is unlikely to revert back to pristine open space. Economic pressures likely will prevail. The quarry site is a lesser evil. There are some parallels here for San Rafael.

Lee Johnson Woodacre
Comment Letter 37: Lee Johnson

37-1 The comment appears to go to the merits of the projects, rather than the environmental analysis. Alternative reclamation scenarios, including one that would result in more open space use of the site following reclamation, are considered in Chapter 6, Alternatives. See also Master Response 4 in Section 7.2.
Haddad, Timothy

From: ss [s2ss@safe-mail.net]
Sent: Friday, April 04, 2008 6:33 PM
To: Hinds, Alex; Haddad, Timothy; Shine, Kim
Subject: Amended Surface Mining & Quarry Permit [AQP]
Attachments: DSCN2140.JPG; DSCN2132.JPG; DSCN2134.JPG; DSCN2135.JPG; DSCN2137.JPG; DSCN2139.JPG

Attention: Tim Haddad, Environmental Coordinator
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, CA 94903

Fax 415-499-7880
1April08

Subject: Amended Surface Mining & Quarry Permit [AQP]

We wish to call for a shut down of the Quarry mining ASAP, if not immediately, and that a permit must not be granted.

Attached please find supplementary material to our input on 1Oct07. The pictures show the amount of dusts in one typical blast.

We reiterate that the Dutra Materials have caused enough damage/misery to/in the area, and it’s time to wrap up and give our environment back. The public is better served if the mining operation is shut down immediately, and site used for other purposes/left alone. There isn’t anything that can ever satisfy the corporate greed – it’s a bottomless pit.

Sincerely,

K.Koh
150 San Marino Dr
San Rafael, 94901
Tel: 206-312-0064

4/14/2008
Comment Letter 38: K. Koh

38-1 Please see the response to comment 36-2.

38-2 Fugitive dust effects are considered in Section 4.2, Air Quality. See particularly Impact R4.2-1 (criteria pollutant emissions from reclamation grading phases 1-3); Impact R4.2-2 (criteria pollutant emissions from reclamation grading phase 4); Impact P4.2-6 (criteria pollutant emissions from quarrying operations); and Impact C4.2-8 (cumulative emissions of the AQP and ARP combined).

38-3 This comment goes to the merits of the project, not the environmental analysis.

38-4 Receipt of the photographs attached to the letter is acknowledged. See the response to comment 38-2.
Tim Haddad, Environmental Planning Coordinator 3501 Civic Center Drive, Room 308 San Rafael, CA 94903

Re: Rock Quarry dilemma

To the Supervisors: April 1, 2008

After attending the hearing last week I realize you will need the wisdom of Salomon to make the right decision in this difficult case.

To find a balance will be awfully hard as the Dutra Group has done good things while being a scofflaw and not adhering to Judge Sutro’s rulings, as I understand it. I was glad to hear that there are quite a few more quarry operations nearby, so that our state is not solely dependent upon this quarry, and that more barges could be employed.

No one mentioned that maybe the exceedingly long hours for crushing from 7 am to 10 pm could be reduced, thus reducing the pollution as well as the truck traffic. Maybe production could be halved and increased in case of a national emergency. Yes, people have to be laid off, but that is happening all across the country presently. These are hard times.

Personally, I have been prone to chronic bronchitis and also have been scrubbing the grainy, dirty residue from my small deck and windows, supposedly from the quarry. Now I am justifiably worried that I am scrubbing at crystalline silica. (I‘d move, now that I know of its danger, but I cannot do that to my 90-year-old husband.)

Silicosis is incurable and something you do not wish on your enemies or opponents.

With the Loch Lomond development under way, which will add over 350 cars to San Pedro road, there will be also more people exposed to the silica. Wind direction does not seem to influence the fallout very much.

I urge you to think first of health, then traffic, economics, etc. and wish you the wisdom of Solomon.

Sincerely yours,

Maya Manny
Comment Letter 39: Maya Manny

39-1 This comment is preamble to those that follow, and therefore no separate response is provided.

39-2 This comment does not address the environmental analysis. Therefore not response is provided.

39-3 Please refer to Mitigation Measure P4.6-6b in Section 4.6, Land Use and Planning. This measure would limit both hours of operation and production levels. See also the Reduced Alternative to the AQP, as discussed in Chapter 6, Alternatives, and in Master Response 4 in Section 7.2 of this document.

39-4 Please see the findings of the Health Risk Assessment with regards to crystalline silica exposure in Section 4.2, Air Quality, and particularly Impact C4.2-10 on page 4.2-52. The Draft EIR concludes that emissions of dust containing crystalline silica are not posing a significant health hazard to neighbors of the Quarry. This conclusion was not arrived at casually, but is the result of intensive and involved study by well-qualified and concerned professionals, using the best available data on emissions and the most recent scientific studies on the effects of exposure to crystalline silica, as well as sophisticated computer modeling to determine the level of exposure experienced by the neighbors of the Quarry. Past studies that sampled the air around the Quarry, and laboratory analysis of the samples, supports this conclusion. This is not to say that the Quarry does not emit dust; certainly it does, and dust emissions are recognized in the Draft EIR as a significant impact. The amount of dust that neighbors of the Quarry breathe, however, and more to the point, the amount of crystalline silica that they breathe, is below the level at which chronic health effects, including chronic lung disease, are thought to occur, as established by the State of California Office of Environmental Health Hazard Assessment.

39-5 This comment goes to the merits of the project, and appears to be addressed to the Board of Supervisors.
Date: March 21, 2008
Time: 11:30 AM

To: Supervisors, Adams, Brown, McGlashan, Kinsey, & Arnold

Company: Marin County Board of Supervisors

Re: Please Speak Up!

Facsimile: (415) 499-3645

Pages (with cover) 4

COMMENT:

If you do not receive all pages, please call immediately: 415-454-0945

This message is intended only for the use of the individual or entity to which it is addressed and may contain information that is privileged, confidential and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone, and return the original message to us at the above address via the U.S. Postal Service. Thank you.
March 20, 2008

Larry Meredith, Director
Marin County Department of
Health and Human Services
20 North San Pedro Road, Suite 2028
San Rafael, CA, 94903

Re: Protecting Children From Cancer

Dear Dr. Meredith:

On February 22, 2008, the Marin Independent Journal reported that among findings contained in an environmental impact report released earlier that week by the County of Marin, was the following inescapable conclusion:

"There's no way to avoid toxic emissions of hazardous air pollutants under conditions proposed in an application for a new operating permit and reclamation plan for the San Rafael Rock Quarry."

The newspaper article referred to the 1,000 page environmental report prepared by Environmental Science Associates of San Francisco at a cost of nearly $1 million, which examined a proposed new operating permit for the quarry and a state-mandated plan for restoring the site when mining operations cease. The article goes on to report:

Risk of Cancer: According to the report, the proposed reclamation plan would increase daily emissions of organic gases, nitrogen oxides, carbon monoxide and particulate matter small enough to be inhaled deeply into the lungs. Even with mitigation measures, the reclamation plan would have "significant, unavoidable impacts on air quality, including a contribution to significant, unavoidable cumulative human health risks," the report finds.

San Pedro Elementary School is located approximately 1.5 miles from the quarry and is situated only steps from the main thoroughfare over which each day hundreds of diesel trucks pass within a few feet of young school children at work and at play. The children at San Pedro School (which also houses Early Head Start programs for infants and
toddlers) are most vulnerable to the health risks posed by the quarry’s operations. Over 90% of the children at San Pedro School are Latino. Many, if not most, come from families that are struggling financially, work long hours and do not the have the time or resources to lobby public officials to take step up to the plate and take aggressive action to safeguard the health of their children.

Glenwood Elementary School is located 1.5 miles from the quarry. Children at Glenwood are exposed to dangerously high levels of airborne silica that damages their young lungs and dramatically increases the likelihood that they will be diagnosed with cancer, asthma or other debilitating respiratory diseases at some point in their lives. The otherwise bright future of children at Glenwood is placed in jeopardy by the ongoing operations of the quarry. These children cannot protect themselves; each day that public officials charged with their protection delay taking action against the quarry, their chances for a healthy future is being compromised.

In today’s San Francisco Chronicle, reporter Elizabeth Fernandez revealed the alarming results of a study released yesterday by the California Air Resources Board concerning the effects of hazardous emissions on residents of West Oakland. That study found:

- Diesel emissions from trucks and other sources elevate the risk of premature death, cancer, asthma and other chronic diseases for people close to the source of the emissions

- Exposure to diesel particulate matter is a hazard especially for children and elders. The air board has estimated that the toxins contributed to some 160 premature deaths in the Bay Area three years ago.

- In 2005, county public health officials compiled state data revealing that West Oakland children ages 5 and under visited the emergency room for asthma at a rate nearly three times higher than children in Alameda County overall. Additionally, a study of death certificates dating to the 1960s showed that residents of West Oakland lived 10 years fewer than people living in the Oakland hills.

Dr. Anthony Ion, Director of the Alameda County Public Health Department, has already responded to those findings, stating: “We no longer live in the Industrial Age. People should not be exposed to known toxins in their own homes.”

Dr. Ion’s comments speak to the serious health hazards for people living in homes a stones throw from the quarry. His words apply with equal force to the cancer risk and other dangers to which young children at San Pedro School are exposed on a daily basis. The children who are exposed to these toxins deserve the support of the entire Marin community, and they deserve nothing less than immediate and aggressive action by those public officials who are charged with responsibility for protecting their health and welfare.

On March 25, 2008, the Marin County Board of Supervisors will hear public comment on the draft EIR referenced in this letter. I trust the children at San
Pedro and Glenwood Schools can count on you to be there and speak on their behalf.

Sincerely,

Amanda Metcalf

Amanda Metcalf

Cc: Marin County Board of Supervisors, Superintendent, San Rafael City Schools, Marin Independent Journal, San Francisco Chronicle
Comment Letter 40: Amanda Metcalf

40-1 This comment reviews but does not appear to question the findings of the Draft EIR with regard to health risks. The comment primarily addresses the merits of the project.
March 24, 2008

To the County Board of Supervisors,

As a resident of Peacock Gap for more than 8 years, I support San Rafael Rock Quarry’s proposal for continued operation of the Quarry.

I have read all the pro and con articles in the Independent Journal concerning San Rafael Rock Quarry. I feel many of the arguments against the Quarry cannot be substantiated. I have familiarized myself with the Mitigation Measures and I feel the San Rafael Rock Quarry has been a good neighbor, implementing truck washing, street sweeping, noise reduction measures and equipment upgrades that produce less noise, dust and vehicle emissions.

Besides being a good neighbor, I know the Quarry is an important resource, for San Rafael, the Bay Area and California. I urge the Supervisors to approve the operating conditions proposed by the San Rafael Rock Quarry.

Stephanie O’Dell
290 Riviera Drive
San Rafael, CA
Comment Letter 41: Stephanie O’Dell

41-1 This comment addresses the merits of the project, not the environmental analysis.
Mr. Tim Haddad  
Environmental Planning Coordinator  
3501 Civic Center Dr. Room 308  
San Rafael, CA 94901  

April 14, 2008

Dear Mr. Haddad,

I am a San Rafael resident living in the Peacock Gap neighborhood for the last ten years. I have been following this story since moving to San Rafael. I have not been directly affected by the Dutra facility most likely because I live far enough way from their operations. As a neighbor, my biggest issues have been the extensive amount of truck traffic on Pt. San Pedro Road. The steady pace of noise, fumes and congestion near San Rafael High School and the Highway 101 intersection can be extremely unpleasant and has made me wonder about the health risks. But not enough to be an activist on this issue.

From both a civic and business standpoint, it is very difficult to understand how they can continue to operate with virtual impunity well beyond limits that were contractually agreed to years ago when they commenced operations, but I view that as a matter for legal resolution.

Now that Environmental Science Associates report has been released, I believe this matter has taken on a new dimension of risk and potential liability for the city of San Rafael and the county of Marin. It has now been formally acknowledged, supported and communicated that there are potentially significant health risks to thousands of people if this business is allowed to continue to operate in residential neighborhood. To allow Dutra to continue its current plan to operate this facility opens the way for negligence claims and will expose the city and the county to substantial liability.

Thank you for your consideration to my point of view on this matter.

Sincerely,

Thomas J. O’Neill

39 McNear Drive  
San Rafael, CA 94901
Comment Letter 42: Thomas J. O’Neill

42-1 This comment primarily addresses the merits of the project, not the environmental analysis. Air quality impacts, including health risks, are addressed in Section 4.2, Air Quality. The AQP Initial Study found that traffic impacts associated with this project would be less than significant, and so were not further examined in the Draft EIR.

42-2 This comment on the HRA does not question the analysis itself, but rather is addressed more to the merits of the project, and therefore does not require a response.
April 7, 2008

Tim Haddad  
Environmental Coordinator  
Marin County Community Development Agency  
3501 Civic Center Drive, #308  
San Rafael, CA 94903

Dear Mr. Haddad:

I am writing in opposition of the quarry’s plan to continue operations. I visit San Rafael often to hike and bike at China Camp and visit McNeal’s Beach. I have noticed a lot of dust, noise, and experienced occasional shivering blasts at both sites which ruins otherwise tranquil setting. I was shocked to read about the presence of crystalline silica in the dust and think that the quarry should not be allowed to continue operating if it is polluting the environment and particularly if it is compromising the health of the visitors. This is a beautiful area and the quarry is an eye sore. Please do not allow them to continue ruining the area.

Sincerely,

Debbie Rodriguez
Comment Letter 43: Debbie Rodriguez

43-1 This comment addresses the merits of the projects, not the environmental analysis.
April 8, 2008

Tim Haddad
Environmental planning coordinator
3501 Civic Center Drive, Room 308
San Rafael 94903

Dear Mr. Haddad:

We bought our first home in Peacock Gap a few years ago. If I had known that the air would poison my kids, we would have moved elsewhere. I would sell this home tomorrow if the market realities didn’t prevent it.

I worry every day now since reading the environmental impact report that my kids will be hurt by that Quarry. How will I live with myself if that happens?

Can you shut down this polluter for us and our neighbors?

Sincerely,

Rachel Street
Comment Letter 44: Rachel Street

44-1 This comment addresses the merits of the projects, not the environmental analysis.
My name is Rod Warters. I am a professional geologist who conducts technical studies for oil and gas companies worldwide. I live in the Peacock Gap area of Stan Rafael. I would like to thank the Board of Supervisors for the opportunity to address the issue of air quality in the draft EIR.

Our concern is crystalline silica emitted into the atmosphere by quarry operation. Respirable free crystalline silica, is a mineral chemically and structurally similar to crushed glass but of the size range of bacteria. Crystalline silica has not been exposed to the weathering effects of nature so the edges are exceedingly sharp and not rounded as for example, quartz beach sand. If the crystalline silica is less than 10 microns in size (fine silt to clay in size, or about the size of bacteria) it may be blown by the wind as “dust” and readily inhaled into our lungs as we breathe. The dust may stay in the air for a considerable time even after quarry activity ceases. Because of the very fine size, dust infiltrates our homes. We stir up the dust as we walk around inside our homes and we consequently breathe this air 24 hours a day, 365 days a year. Because of the sharp crystal faces rather than the round edges of sedimentary or amorphous silica (such is found in soil), the lungs cannot expel the sharp minute crystals and the silica is retained in the lungs where it may eventually cause lung cancer or silicosis.

Crystalline silica does NOT occur naturally in soil but enters the environment ONLY by the blasting, crushing and/or transport of silica bearing rock. Crystalline silica dust is present in sufficient concentration within the Point San Pedro Road corridor to be readily sampled and has been microscopically analyzed both inside and outside of several area residences, on Point San Pedro Road, within the confines of San Pedro Elementary School, and on the leaves, tennis courts, swimming pool deck and locker rooms of McNear’s Park. It is probably being inhaled by residents of the area.

The February 2008 EIR section 4.2 draft considers the air quality issue by utilizing primarily occupational risk criteria. We must have a standard not just for workers at the San Rafael Rock Quarry, but for the general population. This will be achieved only by utilizing environmental tolerances with levels of control that apply to all people who live in the neighborhood and not just occupational tolerances for workers, as in the draft EIR.

In this regard, on February 11, 2005, OEHHA, the California Office of Health Hazard Assessment, in order to prevent the development of lung cancer and silicosis caused by crystalline silica in the atmosphere, recommended an Inhalation Reference Exposure Level called a REL standard for respirable crystalline silica of 3 micrograms/cubic meter of air. Respirable means a size less than 10 microns or about the size of bacteria. Three micrograms is three one millionth of a gram in weight. One cubic meter of air is about 35 cubic feet. So what we are talking about is three one millionth of a gram of crystalline silica, about the size of
bacteria, floating around in 35 cubic feet of air. That is the set standard which is not to be exceeded.

OEHHA was well aware that this inhalation level was a concentration barely above ambient pollution levels or level of pollution in the air which surrounds us every day without the influence of a quarry. The regulation therefore represented an approach of zero tolerance to externally generated crystalline silica into the atmosphere. This is referred to as a chronic Reference Exposure Level and it is explicitly defined by OEHHA as “a level at or below which adverse effects in the general population would not be expected.” These concepts are fully discussed in the attached report.

Crystalline silica dust is a carcinogen as classified by the IARC which is part of the World Health Organization. It is put into Group 1 along with asbestos, radium, thorium and other weapons grade nuclear isotopes.

The residents of the area are entitled to live their lives in an environment free from external pollution of the air they breathe at any concentration above ambient levels.

Crystalline silica dust introduced into the atmosphere by San Rafael Quarry operation is a dangerous externally generated air pollutant above ambient levels. The question we must ask ourselves is whether residents of the Point San Pedro Road corridor exposed to crystalline silica from the San Rafael quarry will likely live as long as San Rafael residents who are not exposed. Will the elderly find their lives shortened; will the very young have lifelong respiratory problems as a result of ongoing operation at the San Rafael Quarry?

Operations at the quarry must be terminated for health reasons! This is a zero tolerance issue which has not been addressed by the February 2008 EIR Draft.

Supporting documentation in contained in the report I have handed you.

Thank you for your attention
Comment Letter 45

Mr. Tim Haddad
Marin County Environmental Coordinator
3501 Civic Center Drive, Room 308
San Rafael, Ca. 94903

Response to San Rafael Rock Quarry EIR Report Feb. 2008  Air Quality Section 4.2

Dear Mr. Haddad;

The February 2008 EIR section 4.2 draft considers the air quality issue by utilizing primarily occupational risk criteria. We must have a standard not just for workers at the San Rafael Rock Quarry, but for the general population. This will be achieved only by utilizing environmental tolerances with levels of control that apply to all people who live in the neighborhood and not just occupational tolerances for workers as in the EIR.

In this regard, on February 11, 2005, OEHHA, the California Office of Health Hazard Assessment, in order to prevent the development of lung cancer and silicosis, recommended an Inhalation Reference Exposure Level (REL of 3 μg/m³ respirable ≤ 10 μm) for crystalline silica suspended in ambient air in California. OEHHA was well aware that this REL was a concentration barely above ambient pollution levels and so represented an approach of zero tolerance to externally generated crystalline silica into the atmosphere. This chronic REL is explicitly defined as “a level at or below which adverse effects in the general population would not be expected.” (See attached discussion)

Respirable free crystalline silica, is a mineral chemically and structurally similar to crushed glass but of the size range of bacteria. Crystalline silica does NOT occur naturally in the soil but enters the environment ONLY by the blasting, crushing and transport of silica rock. Crystalline silica dust is present in sufficient concentration within the Peacock Gap Area to be readily sampled for analysis both inside and outside several residences, on Point San Pedro Road, within the confines of San Pedro Elementary School and on the leaves, tennis courts, swimming pool deck and locker rooms of McNear’s Park. It is probably being inhaled by residents of the area. Crystalline silica dust is a carcinogen as classified by the IARC which is part of the World Health Organization. It is put into Group 1 along with asbestos, radium, thorium and other weapons grade nuclear isotopes. (See references Warters, 2007 IER 4.2.19462; Pictures; Onsite Final Report March 15, 2001, data sheets Appendix.1).

The residents of the area are entitled to live their lives in an environment free from external pollution of the air they breathe at any concentration above ambient levels. Crystalline silica dust introduced into the atmosphere by San Rafael Quarry operation is a dangerous externally generated air pollutant above ambient levels. The question we must ask ourselves is whether residents of the Point San Pedro Road corridor exposed to crystalline silica from the San Rafael quarry will likely live as long as San Rafael residents who are not exposed. Will the elderly find their lives shortened; will the very young have lifelong respiratory problems as a result of ongoing operation at the San Rafael Quarry? Operations at the quarry must be terminated for health reasons! This is a zero tolerance issue which has not been addressed by the February 2008 EIR Draft.

Supporting documentation follows.

Respectfully submitted,

H. Rod Warters
Health Issue Air Quality  
Response to San Rafael Rock Quarry Amended Reclamation Plan, EIR Report Feb. 2008  
DRAFT  
Utilizing Material from OEHHA, California Office of Health Hazard Assessment

Material taken from the EIR report is shown in blue type.  
Material derived from OEHHA, (2005) and responses are shown in italic type.  
Comments from the author are shown in black type.

The approach of OEHHA is one of zero tolerance to the imposition of health risk. This is an appropriate position, supported by an OEHHA staff of highly trained professionals of about 110 individuals of which 64 hold doctoral degrees; seven are physicians, and 21 hold masters degrees in public health or science (2002 data).

The OEHHA comments as presented herein were initially presented as responses to inquiries and statement made by interested parties, when the standard REL (Relative Exposure Limit) was initially presented at 3 µg/m3 as a draft document in April 2003. The chronic REL is explicitly defined as a level at or below which adverse effects in the general population would not be expected. The reader is referred to the references following the body of this letter for complete transcripts.

On Feb.11, 2005, the REL for crystalline silica was adapted at 3 µg/m3. The following memorandum was issued:  
In accordance with Health and Safety Code, Section 44300 et seq. (The Air Toxics Hot Spots Information and Assessment Act, AB 2588, Connell as amended by SB 1731, Calderon), the Office of Environmental Health Hazard Assessment (OEHHA) hereby adopts a chronic Reference Exposure Level (REL) for SILICA (CRYSTALLINE, RESPIRABLE). At its November 30, 2004 meeting, the SRP endorsed a Chronic REL for crystalline silica (respirable), bringing the total number of chemicals for which chronic RELs are provided to 80. The expanded list and TSD, with the toxicity summary for silica, will be available on our Web site.

As will be noted from the following comments, OEHHA was well aware that a crystalline silica REL of 3 µg/m3 represented a REL barely above ambient pollution concentrations and so represented an approach of zero tolerance to crystalline silica environmental air pollution. The chronic REL is explicitly defined as a level at or below which adverse effects in the general population would not be expected.

EIR 4.2-17 Para 2  
Crystalline Silica, Kaolinite, and Amorphous Silica  
The toxicity of crystalline silica has been studied over several years, and questions have arisen about the health outcomes from exposure to crystalline silica. California Office of Health Hazard Assessment (OEHHA) has published a report that summarizes the toxicity of respirable crystalline silica from chronic exposure to the substance (OEHHA, 2005). The OEHHA report states that inhalation of crystalline silica initially causes respiratory irritation and an inflammatory reaction in the lungs. Chronic exposure can lead to deterioration of lung tissue. High levels of respirable crystalline silica, as have been experienced in certain work environments, have led to silicosis, which is a form of lung disease from occupational exposure to silica dust over a number of years. Silicosis causes slowly progressive fibrosis of the lungs and impairment of lung function.
Comment Letter 45

and in EIR Appendix D, p 13, Para.2

In 2005, the California Office of Environmental Health Hazard Assessment (OEHHA) added a chronic reference exposure level (REL) for crystalline silica. Silica is a hazardous substance when it is inhaled, and the airborne dust particles that are formed when the material containing the silica are broken, crushed, or sawn pose potential risks.

Comment

Although this critical OEHHA report was cited in the EIR, neither EIR reference to OEHHA states the actual inhalation Reference Exposure Level (REL) as adapted by OEHHA on Feb. 11, 2005 at 3 μg/m3. As was referred to earlier, this value represents a zero tolerance for crystalline silica above ambient levels in the atmosphere.

Some of the OCHHA discussion centering on the new REL is as follows. (See references)

The OEHHA document recommends an Inhalation Reference Exposure Level (REL) of 3 μg/m3 (respirable ≤ 10 μm) for crystalline silica suspended in ambient air in California, in order to prevent the development of silicosis, a disease that leads to fibrotic scarring of the lungs that ultimately may be fatal. The chronic REL is not a bright line (a definitive threshold) for the presence or absence of adverse health effects. Chronic RELs are concentrations at or below which adverse health effects are not likely to occur in the general human population. The USEPA defines a Reference Concentration as an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. OEHHA uses a similar definition for chronic RELs in the Technical Support Documents for the Air Toxics Hot Spots Program. The more the ambient concentration is in excess of the REL, the greater the possibility of an adverse health effect. Air Districts are responsible for regulatory activities using the Reference Exposure levels, and are advised to contact OEHHA about the importance of exceedances of RELs on a case-by-case basis. A hazard index of 3 would be of more concern in a schoolyard than in a Park and Ride Lot. A hazard index of 5 would be more of concern for a REL in which the total Uncertainty Factor (UF) was 1 (a REL based on effects in sensitive humans) than a REL that used a UF of 3000. Since the total UF used for silica was 3, a hazard index of 5 would be scrutinized. As indicated in the summary the current workplace standard of 50 μg/m3 does not appear adequate to prevent silicosis in workers and some have called for its lowering. Although called Threshold Limit Values, the ACGIH definition does not claim that these are no-effect levels, and adverse health effects are seen in some workers at many TLVs. The chronic REL is meant to protect the general population, not just healthy workers.

(Note: Park et al. (2002) give a range for concentrations of silica of 0.001-0.005 mg/m3, which is equal to 1-5 μg/m3.)

EIR 4.2-17 Para 3, 4, 5

The possible carcinogenicity of crystalline silica dust became a subject of considerable debate in the scientific community in the 1980s and 90s, and several epidemiological studies examined the association of lung cancer with exposure to crystalline silica (Ganel et al, 1989, Costello et al, 1995, and Dong et al, 1995). These studies generally found a link to cancer for workers that experienced severe levels of silicosis. As a result, the National Institute for Occupational Safety and Health (NIOSH) declared crystalline silica to be a human carcinogen (NIOSH, 2002).

Another report (de Klerk and Musk, 1998) studied 2,297 surface and underground gold miners
and found that lung cancer mortality was related to total cumulative silica dust exposure after adjustment for smoking and for the presence of bronchitis. However, the effect of cumulative silica dust exposure on lung cancer mortality was not significant after adjustment for smoking, bronchitis and silicosis. The results of this study do not support a relationship between lung cancer and silica exposure, in the absence of silicosis.

Since the OEHHA report analyzed health outcomes from environmental exposure to crystalline silica, it assumed that chronic levels of crystalline silica would not be great enough to result in the formation of silicosis. It thus concluded that, based on studies, such as the de Klerk study, there is no statistical evidence for the formation of cancer in the absence of silicosis. OEHHA established only a chronic non-carcinogenic relative exposure level (REL), and it did not establish a carcinogenic toxicity factor for the substance.

OEHHA staff does not agree that the scientific community is now widely split on the association of silica exposure and lung cancer. Meta-analyses, such as Smith, Lopipero, and Barroga (1995) and Steenland and Stayner (1997), indicated that silica exposure was associated with lung cancer and that the risk for lung cancer was higher in silicotics. In 1997 the International Agency for Research on Cancer (IARC) designated crystalline silica (inhaled in the form of quartz or cristobalite from occupational sources) as an agent known to cause cancer in humans. According to Checkoway and Frankblau (2000), “The association between silica and lung cancer is generally, but not uniformly, stronger among silicotics than nonsilicotics. However, the existing literature is ambiguous due to incomplete or biased ascertainment of silicosis, inadequate exposure assessment, and the inherently strong correlation between silica exposure and silicosis which hinders efforts to disentangle unique contributions to lung cancer risk.”

An occupational exposure level is intended to protect generally healthy workers from the adverse effects of exposure 8 hours per day, 5 days per week over a working lifetime. A chronic REL is intended to protect the general public, including sensitive individuals, 24 hours/day, 7 days/week. A chronic inhalation REL, which equaled or exceeded the occupational exposure limit, would not be taken seriously. How much below the occupational exposure limit the chronic REL is set will depend on the data available to calculate the REL. It is relevant to note that there are concerns in the published scientific literature that the current occupational standard is not adequately protective of workers.

OEHHA considers that silicosis is a severe endpoint because of the irreversible and progressive nature of this pneumoconiosis, even after exposure has ended. The American Thoracic Society (ATS, 1997) states: “Studies from many different work environments suggest that exposure to working environments contaminated by silica at dust levels that appear not to cause roentgenographically visible simple silicosis can cause chronic airflow limitation and/or mucus hypersecretion and/or pathologic emphysema.” In epidemiological studies, airflow limitation due to silica exposure can be detected above levels expected to be due to smoking.

OEHHA emphasizes that the Reference Exposure Levels are levels at or below which it can be reasonably predicted that no adverse effects will be experienced in the general population.

EIR 4-2-19 para2
Concentrations of crystalline silica were analyzed in 15 of the PM-10 filters collected in 2004 as a part of the County-sponsored air quality study. Detectable quantities (greater than 0.5 micrograms per cubic meter) of crystalline silica were not found in any of the fifteen filters tested. Concentrations of amorphous silica were also analyzed in the 15 PM-10 filters collected in 2004. Only one of the 15 samples contained amorphous silica in excess of the detection limit, at a concentration of 0.6 micrograms per cubic meter, which is well below the federal relative exposure level (REL) for amorphous silica of 6,000 micrograms per cubic meter. Because this study sampled ambient air in the vicinity of SRRQ, but did not directly sample emissions from Quarry operations, the source of the silica cannot be determined from this study.
This result is astonishing. Given the widespread dust throughout the neighborhood, the white dust cover of Point San Pedro Road caused by quarry operation, the dust on the leaves and tennis courts at McNear’s Beach Park, the multitude of resident dust complaints, the analysis of crystalline silica dust in homes and balconies (see picture following)…what happened to the dust?

In fact, an earlier study by Onsite Laboratories of Freemont California Final Report March 15, 2000, with testing in Peacock Gap conducted in November and early December 2000, (see data pages in appendix) did find significant quantities of respirable silica in filters with several reported total concentration recoveries near 500ug. Silica is reported as generally comprising 23% to 43% of total recovery.

The observer in his comments of Sample day 1, 9-30-2000 to 10-30-2000 refers to “fugitives expelled by residual dust on quarry trucks. Material blown from historical trucks from the quarry lies around on the roadway and curb. This material becomes airborne at the passing of every vehicle. It was noted that 50% of these trucks have been wetted prior to leaving the industries property.” Onsite Laboratories, 2000, table 2.1 Emission Results. This description describes very accurately the present situation. (see pictures following)

The analytical portion of the report appears poorly done with some confusion. Perhaps that is why these important data were not considered by the EIR Report. Nevertheless, there is no denying the raw data and the very large concentrations of silica. This silica is obviously far in excess of ambient concentrations.

OEHHA Relative Comments from Responses to OEHHA 2003 Draft Report

The desired objective is the identification of a health protective level at which no cases of the critical end-point (silicosis) would be observed at any time, not the estimation of a time- and dose-related incidence rate. This is a model fit to the entire population, not a comparison between groups.

OEHHA is not saying that silicosis occurs at ambient exposure levels in California. The definition of a chronic REL is a level at or below which adverse effects are not expected in the general population. Thus we do not anticipate silicosis from background ambient levels. Secondly, although some have concluded that silicosis is not expected to occur at 5 μg/m³, others have predicted a small incidence of silicosis. As indicated in the chronic REL summary, Park et al. (2002) predicted a risk of 7.8 to 17 cases of silicosis per 1000 diatomite workers exposed to 5 μg/m³ crystalline silica. Based on their study on Chinese tin miners, Chen et al. expected a risk for silicosis of approximately 1 per 1000 people exposed at work to 5 μg/m³ crystalline silica.

OEHHA staff realizes that the proposed REL is close to some background levels. California has had to deal for many years with the fact that the standards for several pollutants (including ozone and other criteria pollutants) are within an order of magnitude of background levels. OEHHA emphasizes that the Reference Exposure Levels are levels at or below which it can be reasonably predicted that no adverse effects will be experienced in the general population. Where these levels are exceeded there may be (but not necessarily will be) such effects.

CARB and the Air Districts have regulatory approaches designed to provide the best feasible protection for public health, taking into account the specific features of each individual situation.

The chronic REL is explicitly defined as a level at or below which adverse effects in the general population would not be expected. Since the proposed REL is at the upper end of the range seen in the general environment in California, OEHHA is agreeing with the commentator in concluding that silicosis is not likely to be a major problem for background environmental exposures to the general population, but only for those situations where a specific local source may raise exposure significantly above general environmental levels.
Current medical practice is unlikely to detect silicosis due to background levels of silica, since (1) most people, except those in dusty occupations, only get chest X-rays when they are ill, (2) the rounded nodules characteristic of silicosis would be few in someone with such putative silicosis due to background silica levels, (3) small irregular opacities, even if due to silica, could not be differentiated from those due to aging or smoking, and (4) autopsy rates in the general population are very low so that such putative silicosis would not likely be detected at autopsy. Hospital autopsy rates have decreased from 41 percent in 1960 to 5 percent in 1997.

In regard to a threshold, although regulatory risk assessment for non-cancer effects is moving away from the conventional NOAEL/LOAEL approaches toward a benchmark dose approach, that approach does not necessarily assume the presence or absence of a threshold. In the present case the use of an uncertainty factor to account for inter-individual variation in the general human population (beyond that seen in the specific working populations in the epidemiological studies) implies the assumption of a threshold: there is no process of extrapolation (linear or otherwise) outside the range of observed data in the present calculation.

Conclusion

As stated by OEHHA, an occupational exposure level is intended to protect generally healthy workers from the adverse effects of exposure 8 hours per day, 5 days per week over a working lifetime. A chronic REL is intended to protect the general public, including sensitive individuals, 24 hours/day, 7 days/week.

The zero tolerance chronic REL of 3 μg/m³ draft silica chronic REL as defined by OEHHA must be enforced! The San Rafael Rock quarry has been emitting carcinogenic crystalline silica into the atmosphere for too many years. Operations at the quarry MUST be terminated for health reasons! This is a zero tolerance issue which has not been addressed by the February 2006 EIR Draft.

Rod Warters

March 25, 2008
Respirable crystalline silica “dust” from the quarry is everywhere. Residents report it on tennis courts, balconies, cars, picnic tables, roads, leaves on trees, in rugs and sofas. When blasting occurs, residents report “smelling the dust, feeling the grit in their teeth”.

The residents of Peacock Gap are entitled to live their lives in an environment free from external pollution of the air they breathe at any concentration above ambient levels.
References


California Office of Environmental Health Hazard Assessment (OEHHA), Consolidated Table of OEHHARPB Approved Risk Assessment Health Values, April 2005.

Onsite Environmental Laboratories, Inc., March 15, 2000. FINAL REPORT. Ambient Sampling Around the Perimeter of San Rafael Rock Quarry, Located at San Rafael, Marin County, California For Total Suspended Particulate, CARB Trace metals, Inhalable 10 Micron and 2.5 Micron Particles.

California Office of Environmental Health Hazard Assessment (OEHHA), Chronic Toxicity Summary Silica (Crystalline, Respirable) (silicon dioxide, quartz, tridymite, cristobalite) Case Registry Number 7631-86-9, February, 2005 And Comments; The American Chemistry Council (ACC) Crystalline Silica Panel and the California Mining Association.

Dr. Woodhall Stopford of Duke University Medical Center.

Dr. Graham W. Gibbs, prepared for the American Chemistry Council Crystalline Silica Panel

Dr. Geoffrey Berry prepared for The Crystalline Silica Panel of the American Chemistry Council.

Mei J. Mirliss, Executive Director, International Diatomite Producers Association (IDPA)

Dr. Dwight Culver, Clinical Professor of Medicine (Epidemiology), University of California at Irvine.

Sorptive Minerals Institute (SMI)
California Office of Environmental Health Hazard Assessment (OEHHA), Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values, April 2005.

Particulate Levels of Interest for Exposure to Respirable Crystalline Silica Isomorphs

150 μg/m³ Federal 24 hour PM₁₀ standard

65 μg/m³ Federal 24 hour PM₂.₅ standard

50 μg/m³ California 24 hour PM₁₀ standard

50 μg/m³ Federal PM₁₀ annual standard (chronic exposure)

50 μg/m³ 8 hour TLV for quartz, cristobalite, and tridymite for workers (ACGIH Method)

50 μg/m³ estimated workplace LOAEL for silicosis from studies by Theriault et al. ("")

20 μg/m³ CA annual PM₁₀ standard (chronic exposure) (arithmetic mean)

15 μg/m³ Federal annual PM₂.₅ standard (chronic exposure)

12 μg/m³ CA annual PM₂.₅ standard (chronic exposure) (arithmetic mean)

12 μg/m³ current silica TLV adjusted to equivalent continuous exposure (50 μg/m³ x 8 h/24 h x 5 d/7d) (ACGIH)

10 μg/m³ TLV for silica proposed by Greaves (2000) (ACGIH)

8 μg/m³ current silica TLV further adjusted by 46/70 years occupational exposure (ACGIH)

8 μg/m³ estimated high-end ambient crystalline silica level in US (USEPA, 1996) (PM₁₀)

6.7 μg/m³ lower bound on 1% risk of silicosis estimated by USEPA (1996) (PM₁₀)

5 μg/m³ TLV for silica proposed by Chen et al. (2001) (ACGIH)

5 μg/m³ "acceptable" ambient level for silica (10% of PM₁₀) (USEPA, 1996)

5 μg/m³ RfC for diesel exhaust particulate, a respirable PM (PM₂.₅)

3 μg/m³ estimated average ambient exposure to crystalline silica (USEPA, 1996) (PM₁₀)

3 μg/m³ draft silica chronic REL proposed by OEHHA (ACGIH)

2.3 μg/m³ (1.17-3.46; n=12)* silica level during 1989 in Santa Maria, CA (urban site) (PM₁₀)

0.6 μg/m³ (0.1-1.44; n=16)* silica level during 1989 in Santa Ynez, CA (rural site) ("") 0.2 μg/m³ (0-1.15; n=18)* silica level during 1989 in Buellton, CA (remote background) ("*" mean, range, and number of crystalline silica measurements (Mukherji et al., 1993)
ONSITE ENVIRONMENTAL LABORATORIES, INC.

DATE: March 15, 2001

TYPE: FINAL REPORT

TITLE: Ambient Sampling Around the Perimeter of San Rafael Rock Quarry, Located at San Rafael, Marin County, California For Total Suspended Particulate, CARB Trace Metals, Inhalable 10 Micron and 2.5 Micron Particles.
Revision 2: (3-14-01)

PREPARED FOR: County Of Marin, CA.

PREPARED BY: ONSITE ENVIRONMENTAL LABORATORIES, INC.
5500 Boscali Common
Fremont, Ca. 94538
1.0 Introduction

At the request of representatives from Marin County, California, ONSITE Environmental Laboratories, Inc (ONSITE) conducted an Ambient Air Monitoring Test Program (AAMTP) around the perimeter of the San Rafael Rock Quarry located off Pt. San Pedro Road, San Rafael, CA. A project summary, including the roles and responsibilities of key personnel, their titles and contact information, is provided in Table 1 below. A more detailed presentation of the analytical test results and procedures, along with the associated quality assurance activities and referenced methods, are provided in the sections that follow.

**TABLE 1 – PROJECT SUMMARY**

<table>
<thead>
<tr>
<th>Source Tested:</th>
<th>Property Perimeter (up &amp; down wind) of San Rafael Rock Quarry, McNears, Brick Yard, and Marin Aggregate, Pt. San Pedro, San Rafael, CA.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Objectives:</td>
<td>Characterization of Ambient TSP, 2.5u, 10u and CARB Listed Trace Metals for demonstration of Daily Excursions.</td>
</tr>
</tbody>
</table>
| Test Location: | Station No.1= 20 Marin Bay PK, San Rafael,  
Station No.2= 16 Heritage Dr., San Rafael  
Station No.3= McNears’s Beach Park, San Rafael,  
Station No.4= 26 Tweed Terrace, San Rafael (10/10 - 10/16),  
3 Geneva Way, San Rafael (10/17 – 10/24),  
Crescent Way, Novato, CA (10/24 – 10/25)  
130 Pt. San Pedro Rd.; San Rafael (10/25 – 10/30) |
| Unit(s) to be Tested: | Property Perimeter of San Rafael Rock Quarry |
| Test Dates: | September 29—October 30, 2000 |
| Test Requested by: | County Of Marin, Jim Flageollet, Chief Deputy County Counsel |
| Test Contractor: | ONSITE Environmental Labs, Inc., 5500 Boscell Common, Fremont, CA, 94538 (510)-490-8571  
Contact : Jerry Lewis Tel (330) 388-9129  
or John Hawkins Tel (330) 634-0660 |
| Laboratory Analysis: | Chester LabNet, 12242 SW Garden Place, Tigard, Or. 97223,  
Paul Duda, Lab Project Manager, (503) 624-2183 |
| Test Methodology: | Sampling Method:  
- Ambient Total Suspended Particulate (TSP)  
- Ambient Concentrations of 2.5u and 10u size particles  
- CARB Trace Metals  
Analytical Method:  
- Gravimetric  
- XRF |
| Ambient High Volume Sampling |
| Ambient Dichotomous (10u, 2.5u) |
2.0 Test Locations and Results

2.1 Overview

Ambient air monitoring and testing commenced on September 29, 2000 at approximately 12:00 pm PST and continued for a period of thirty (30) consecutive days. During the entirety of this program, daily logs were used to record all pertinent data needed to calculate concentrations of Total Suspended Particulate (TSP), Inhalable Particle Mass 10 micron in size (PM₁₀), Inhalable Particle Mass 2.5 micron in size (PM₂.₅), and Toxic Trace Metals in ambient air according to guidelines provided in the Code of Federal Regulations, Title 40, part 50 Appendices B, I, and M, and parts 53 and 58. Samples were collected from the four locations identified in Figure 1 below.

Figure 1 Sample Site Locations Diagram
2.2 Sampler Locations

Sampling was located around the perimeter of the San Rafael Rock Quarry property based on historical knowledge of local seasonal weather patterns for wind direction. The historical prevailing wind for this season predicted a wind coming out of the south, southwesterly direction. Thus, samplers were located at three sample sites "downwind" of the property boundaries. One sample station was located in an "upwind location." This sample location served as an air sampler device that had not been affected by effluent emissions generated in the atmosphere by the facility being tested.

- **Station Number 1**: North of the San Rafael Rock Quarry in the Marin Bay Park Subdivision. This location was equipped with a Dichotomous Sampler for sampling both fractions of inhalable particles and a TSP High Volume Sampler. In addition to other equipment used, a meteorological tower (MET Tower) was employed during the entirety of the AAMTP for continuous weather information.

- **Station Number 2**: 16 Heritage Drive (back-yard facing Pt. San Pedro Road). Located near exit point of quarry where trucks traveled past at approximately twenty-five (25) miles per hour.

- **Station Number 3**: McNears Beach Park. The sampler device for this location was placed at the property boundary west north west of the quarry facility. This location was in the predominant wind path and thus, was exposed to the highest concentration of fugitive particles being expelled from the source property most of the time.

- **Station Number 4**: This sample station was known as the up-wind station and was located initially at 26 Tweed Terrace, San Rafael, CA. Later, this station was relocated to several different locations (see Table 1).

2.3 Results Summary

Each sample tested represented air collected over a continuous, twenty-four (24) hour sampling period. Samples were recovered for analysis at the sample test end time. All sample filters were shipped by Federal Express to Chester LabNeT of Tigard, Oregon for testing. Tests were administered to determine Total Suspended Particulate (TSP), Inhalable Particle Mass 10 micron in size (PM10), Inhalable Particle Mass 2.5 micron (PM2.5), and Toxic Trace Metals. Specific details regarding the collection activities and laboratory procedures can be found in the appendices to this document.
Table 4  Trace Metals Results (cont.)

<table>
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<tr>
<th>Element of Interest</th>
<th>Date 2000</th>
<th>Station No./Filter No.</th>
<th>Total Concentration (ug/Filter)</th>
<th>Calculated Concentration in Air (ug/m³)</th>
<th>Volume of Sample (m³)</th>
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### Table 4 Trace Metals Results (cont.)

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<td>Ba</td>
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<td>N/d</td>
<td>N/d</td>
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<td>La</td>
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<td>N/d</td>
<td>N/d</td>
<td>24.05</td>
</tr>
<tr>
<td>Hg</td>
<td>10-17</td>
<td>I/TS574C</td>
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<td>N/d</td>
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</tr>
<tr>
<td>Pb</td>
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<td>I/TS574C</td>
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<td>N/d</td>
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Table 4 Trace Metals Results (cont.)

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<th>Element of Interest</th>
<th>Date</th>
<th>Station No.</th>
<th>Total Concentration (μg/Filter)</th>
<th>Calculated Concentration in Air (μg/m³)</th>
<th>Volume of Sample (mL)</th>
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<td>Al</td>
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<td>As</td>
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<td>24.05</td>
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<td>Cd</td>
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<tr>
<td>In</td>
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<td>N/d</td>
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<tr>
<td>Hg</td>
<td>10-25</td>
<td>I/TS590C</td>
<td>N/d</td>
<td>N/d</td>
<td>24.05</td>
</tr>
<tr>
<td>La</td>
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<td>N/d</td>
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<td>24.05</td>
</tr>
<tr>
<td>Hg</td>
<td>10-25</td>
<td>I/TS590C</td>
<td>N/d</td>
<td>N/d</td>
<td>24.05</td>
</tr>
<tr>
<td>Pb</td>
<td>10-25</td>
<td>I/TS590C</td>
<td>N/d</td>
<td>N/d</td>
<td>24.05</td>
</tr>
</tbody>
</table>
Comment Letter 45: Rod Warters

45-1 The commenter is incorrect in stating that crystalline silica does not occur naturally in soil. Please see the response to comment 23-1. The commenter also mischaracterizes the range of sources and distribution of crystalline silica, as well as the morphogenesis of the material. Note that beach sand is derived primarily from weathered surface rock, which is then further weathered as it is transported to the sea by rivers and streams, and yet further weathered in the ocean and beach environment. Crystalline silica does not weather into amorphous silica, but rather retains its crystalline structure. However, weathering can wear the sharp edges and cause them to become smoother, thus reducing their toxicity if inhaled.

The commenter is also incorrect in stating that the HRA conducted for the Draft EIR uses primarily occupational risk criteria. The 3.0 microgram per cubic meter Relative Exposure Limit (REL) established by OEHHA, and used as the standard for determining health effects, is a general standard for environmental exposure and not an occupational standard.

Regarding the presence of dust containing crystalline silica in the neighborhoods surrounding the project site, two points should be made: first, crystalline silica is ubiquitous in the environment, and is a major component of dust everywhere. It is likely that the Quarry is not the sole source of this dust in the neighborhoods around SRRQ, though SRRQ is undoubtedly a source. Note, however, in Table 4.2-8b in Section 4.2, Air Quality, that the soil sample taken from North San Pedro Road, well away from the Quarry, contained about 40% quartz (crystalline silica). Second, the only known health risk associated with crystalline silica occurs when respirable sized particles (particles with a mean size of 4 microns) are inhaled. Most of the dust deposited on surfaces, which consist mainly of larger particles that have settled out of the atmosphere, and that are not respirable, cannot be used to establish health risk. Rather, the concentration of the finer particles which are less than 4 microns and suspended in the air that people breathe are the sole determinant of health risk. For that reason, the HRA modeled dust emissions, dispersion, and exposure using conservative assumptions to provide a worst-case estimate of the amount that is in the air around the Quarry that people breathe. The modeled concentrations of crystalline silica in the air at dozens of locations, including residential areas, schools, and parks, were then compared to the REL established by OEHHA, and found to be below the level at which health risks are expected to occur: the highest modeled levels, as shown in Table 4.2-17 in Section 4.2, Air Quality, result in a Hazard Index Rating of 0.56 from all crystalline silica sources. This corresponds to a concentration of 1.68 micrograms per cubic meter. See also Figure 4.2-6 in Section 4.2, which provides a graphic view of the distribution of chronic health risks throughout the neighborhoods surrounding the Quarry.
Regarding the carcinogenicity of crystalline silica, and the reason that the HRA conducted for the EIR does not, and in fact cannot, consider cancer risks of crystalline silica exposure, see the responses to comments 30-13 and 45-5.

45-2 This comment goes to the merits of the project, not the environmental analysis.

45-3 This comment largely repeats comment 45-1; please see the response to that comment, above.

45-4 The HRA used the 3.0 micrograms per cubic meter REL established by OEHHA as the significance threshold for determining whether the modeled exposure to crystalline silica poses a significant health risk.

45-5 The Draft EIR does not suggest that there is no association between crystalline silica exposure and lung cancer, or that the scientific community is split on this issue. Rather, the Draft EIR states the findings of OEHHA that lung cancer from exposure to crystalline silica is unlikely in the absence of silicosis. Furthermore, as noted in the response to comment 23-1, the EIR preparers are unaware of a cancer potency factor for crystalline silica exposure established by any regulatory agency. Therefore, consistent with OEHHA guidance, only the chronic effects of crystalline silica exposure are considered in the HRA.

45-6 The HRA conducted for the EIR does not rely on ambient air sampling to determine air concentrations or exposure to crystalline silica or other toxic substances, but rather relies on computer modeling of emissions and dispersion.

Regarding the Onsite study, please see the response to comment 23-18.

The Onsite study appears not to have analyzed filter samples specifically for crystalline silica, but only for total silica. As noted in the comment, the compilation and analysis of the data appears poorly done in the Onsite study. Only filter sample results for Station 1 (Marin Bay Park Court) are shown in detail. Table 3 in the Onsite study indicates that calculated silica concentrations for all samples ranged from 1.87-78.254 micrograms per cubic meter. Apparently not all filter sample results are shown in the report, but those that appear do not corroborate the stated range. Table 45-6.1 compiles silica concentrations from all specific filter sample results included in the Onsite report, all of which are from the study’s sampling station 1 located at 20 Marin Bay Park Court. The analysis of these samples did not distinguish between crystalline silica and amorphous silica, and the results are therefore difficult to interpret with regard to health risks; however, given that the average concentration of total silica is just above the REL for crystalline silica, and that the Quarry has implemented several additional dust control measures since the time of the Onsite study, the results of the Onsite study appear to support the conclusions reached in the Draft EIR, that is, that exposure to crystalline silica emitted by the Quarry does not pose a significant health risk.
TABLE 45-6.1
ONSITE STUDY RESULTS

<table>
<thead>
<tr>
<th>Station Number</th>
<th>Si Concentration (µg/m3)</th>
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<tr>
<td>Saturday, September 30, 2000</td>
<td>0.8042</td>
</tr>
<tr>
<td>Monday, October 02, 2000</td>
<td>7.8254</td>
</tr>
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<td>Monday, October 02, 2000</td>
<td>0.7302</td>
</tr>
<tr>
<td>Wednesday, October 04, 2000</td>
<td>2.8487</td>
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<tr>
<td>Friday, October 06, 2000</td>
<td>4.0944</td>
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<tr>
<td>Tuesday, October 10, 2000</td>
<td>7.7381</td>
</tr>
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<td>Saturday, October 14, 2000</td>
<td>0.3729</td>
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<tr>
<td>Tuesday, October 17, 2000</td>
<td>0.2172</td>
</tr>
<tr>
<td>Friday, October 20, 2000</td>
<td>2.6067</td>
</tr>
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<td>7.7921</td>
</tr>
<tr>
<td>Wednesday, October 25, 2000</td>
<td>1.094</td>
</tr>
<tr>
<td>Sunday, October 29, 2000</td>
<td>0.1878</td>
</tr>
</tbody>
</table>

Minimum: 0.19
Maximum 7.83
Average 3.03
Average weekday 3.39
Average weekend 2.29

SOURCE: Onsite Environmental Laboratories, Inc., 2001

45-7 As previously stated, the HRA conducted for the EIR was consistent with OEHHA guidance, in that it used the 3.0 microgram per cubic meter REL for crystalline silica.

45-8 This comment is unsupported by the findings of the HRA conducted for the EIR.

45-9 The County acknowledges receipt of the photographs. Please refer to the response to comment 45-1.

45-10 These are references cited in the comments and do not require a response.

45-11 Receipt of these excerpts from the OEHHA documents is acknowledged.

45-12 Receipt of these excerpts from the Onsite study is acknowledged. The EIR preparers reviewed the report in its entirety in preparation of this Final EIR. See response to comments 23-18 and 45-6.
April 14, 2008

Mr. Tim Haddad  
Environmental Planning Coordinator  
3501 Civic Center Drive, Room 308  
San Rafael, CA  94903

Dear Mr. Haddad,

Please examine the enclosed samples of dust that are constantly appearing in the interior of our home in Peacock Gap. We have had some of it analyzed and it is said to contain, among other things, crystalline silica. I will have it analyzed again. We purposely do not have our windows open during the day, only at night when sleeping. Yet, this dust constantly filters though our home and is deposited all over the house. Our bedroom furniture and living room are covered with it.

The strange phenomenon is that, when we go to our Tahoe property, even though it may have been several weeks since our last visit there, we find virtually no dust on the furniture whatsoever.

We hope that someone will actually listen to what is happening in this area, and be strong enough to speak up against the quarry and its analysts. The last two years have been the worst since they have been working on South Hill.

We shall be sending dust samples to the Marin County Director of Health and Human Services, as well as the Health Services Department in Sacramento. We need to put a stop to this serious health hazard which is affecting our neighborhood. We are also enclosing a pertinent article from Nurse Week.

Thank you for your prompt attention.

Sincerely,

Raymond & Rosalie Weigle

Enclosures
Lung Cancer
APREVENTABLE TRAGEDY

by Connie Goldsmith, MPH, RN, and Mary Hoban, MN, RN

Do you know what cancer kills the most men? Prostate? Colorectal? Breast? Don’t know? Why? If you picked any of these answers, and said, “I don’t know,” you’re not alone. Lung cancer is the leading cause of cancer death in the United States as well as in the world. In fact, it kills more people than the next five cancer-causing agents combined. Lung cancer is eighth lethal, but emotionally, it is killing 65 percent of people who smoke. Yet, nearly nine out of 10 cases can be prevented.

About 105,000 new cases of lung cancer were reported last year and an estimated 157,000 people died. This accounts for 30 percent of all cancer deaths.

Lung cancer, like all cancers, is caused by uncontrolled growth of abnormal cells that eventually crowd out and destroy healthy tissue. It may take many years for lung cancer to reach a detectable stage. Cancers from other parts of the body, for example the breast, travel through blood and lymphatic systems (networks) to the lung. Commonly, lung cancer metastasizes to other organs, for example, the brain and bones.

This article deals only with cancer that begins in the lungs. It identifies ethnic and lifestyle variables in the disease, its causes, prevention, and diagnostic testing. Standard all-case lung cancer, and one out of every 10 smokers will develop lung cancer.”

Men who smoke have 22 times the risk of developing lung cancer, and 11 times the risk of dying from it. The likelihood of developing lung cancer is affected by the age at which smoking begins, how many years a person smokes, how much is smoked, and how deeply the smoker inhales.”

Secondhand smoke is believed to cause at least another 30,000 lung cancer deaths each year. People who stop smoking cut their risk of lung cancer deaths in half compared to those who continue to smoke.”

Exposure to radon—a radioactive gas that occurs naturally in soil and rocks—is the second leading cause of lung cancer. Radon has been identified in every state, and one out of 15 homes has levels in excess of 10 pCi/L, which is considered a normal level.

This article offers simple—preventive measures to avoid or control the second leading cause of lung cancer. Radon has been identified in every state, and one out of 15 homes has levels in excess of 10 pCi/L. Radon also greatly increases a person's chances of developing lung cancer. Indoor exposure to asbestos or radon can occur among people who work in or around their homes, those who suffer from respiratory illness, and those who smoke. Other risk factors include outdoor exposure in natural settings such as mountains, valleys, coastal areas, and caves.”

every three months, the prognosis is similar to adenocarcinomas.7"

Symptoms and diagnosis
Symptoms of lung cancer depend on the location of the tumor. Lung tumors may be present up to five years without causing symptoms.8 If located centrally, or in the bronchus, a tumor can cause wheezing or a chronic cough with blood-streaked sputum. If the tumor occurs in areas that over-

"A high-resolution chest x-ray can help to accurately determine the quality of life for patients with lung cancer."

Comment Letter 46-2

CONTINUING EDUCATION

46-2 Comment Letter 46

I would like this book some time.

Mr. Jim Hallock
Environmental Planning Coordinator
3501 Civic Center Plaza, Room 308
San Rafael, CA 94903

SAMPLES INSIDE
Comment Letter 46: Raymond and Rosalie Weigle

46-1 The County acknowledges receipt of the dust sample. Please be assured that the County takes the concerns of the neighbors of SRRQ very seriously. The County has conducted numerous studies of air quality in the vicinity of the Quarry. The HRA conducted for the EIR was not prepared for or on behalf of SRRQ, but rather by a third party private firm under contract with Marin County to provide independent and objective analysis. The analysts who prepared the HRA are highly-qualified professionals with no interest in the project other than to provide an objective analysis of its environmental effects. The HRA methods and conclusions were thoroughly reviewed, both internally by ESA, the firm that conducted the study, and by Dr. Paul Damian, an expert on health risk assessments hired by the Point San Pedro Road Coalition (comments 30-6 through 30-45). In responding to Dr. Damian’s comments, the HRA analysts thoroughly reviewed methods, inputs, and outputs of the computer models used, and reviewed recent scientific literature on health effects of crystalline silica. ESA and Marin County stand by the results of the HRA, as presented in the Draft EIR.

46-2 Receipt of this article is acknowledged. Cancer health risks of toxic air contaminants are reviewed in Section 4.2, Air Quality; see particularly the discussion of Diesel Particulate Matter commencing on page 4.2-44.
April 12, 2008

Mr. Tim Haddad
Environmental Coordinator
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, CA 94903

Re: Comments to the Combined Draft Environmental Impact Report for the San Rafael Rock Quarry Amended Reclamation Plan and Amended Surface Mining and Quarrying Permit (the “DEIR”)

Dear Mr. Haddad:

I live in Marin Bay Park, and I am writing this letter as a concerned resident. I am also a physician with over 20 years of clinical practice and have been on the clinical faculty of the Harvard Medical School and the University of California, San Diego. I have authored more than 35 scientific publications and am very familiar with the medical issues raised by quarry activities, which are extremely troubling.

I am submitting the comments below regarding the DEIR and the SRRQ plan for extended operation and reclamation. While I agree with the DEIR’s conclusion that the quarry poses a significant environmental impact, I believe that the DEIR is (1) deficient in its assessment of health and blasting risks, (2) erroneous in its conclusions of health risk as “less than significant” and “without mitigation,” (3) fails to provide backup data necessary to determine the accuracy of the health risk assessment’s conclusions, and (4) negligent in excluding the cumulative environmental and public health impact of the prior 25 plus years of quarry operations. I have strenuous objections to any further continuation of operations until the full impact of the prior 25 years of quarry operation, or, preferable, the entire operating history of the quarry, is assessed and the existing environmental impacts are cleaned up and mitigated. The public health effects of quarry operations began when it became operational and will continue after it closes.

The DEIR is flawed not only in excluding historic data in assessing health risk, but also in assessing the non-health environmental impacts of blasting. Whether or not including this historic data is customary for a DEIR, its inclusion in this case is critical to derive any valid conclusions regarding the public health and other impacts on the neighborhood. I believe that the conclusions reached are incomplete and erroneous because the models
employed do not address the true pathophysiology and science of the medical conditions that need to be mitigated (nor the structural effects on homes of recurrent blasting). In summary, the final EIR needs to include the analysis of this cumulative impact prior to offering conclusions on acceptable tolerances for further quarry operations or permits allowing further impact.

Specific comments:

(1) **Environmental Impact/Health.** Of the adverse environmental impacts identified in the DEIR that cannot be mitigated -- dust, diesel exhaust, and to some extent noise -- these "impacts" all adversely affect the health of the local neighbors, increasing morbidity and mortality. They are all significant public health risks, which are at least a substantial nuisance and, based on existing models, will cause the deaths of some area residents. The final EIR needs to include a thorough assessment of these public health risks.

(2) **"Reclamation"/Berm.** The EIR needs to address the additional environmental impact of constructing a berm during the reclamation process, which will result in excess impact in multiple areas besides excessive noise --
   a. air quality/dust -- impact on health of those in proximity.
   b. visual impact -- significant to those in proximity.

(3) **Health Risk.** The DEIR's conclusion regarding the public health risk of "less than significant" and "no mitigation required" are contrary to the public health and medical literature available on the subject and need to be reexamined. As a physician familiar with this subject, I believe that this conclusion is without foundation, that the problem is significant, and that it warrants urgent mitigation. A public health survey needs to be conducted, and a thorough review of the health risk assessment's modeling calculations needs to be conducted. Airborne crystalline silica are potentially lethal and highly significant. Silicosis (interstitial pulmonary fibrosis) is a disabling, nonreversible and sometimes fatal lung disease caused by overexposure to respirable crystalline silica. There is no cure, but it is 100% preventable by reducing or eliminating exposure. The public health data indicates approximately a 3% incidence of silicosis in those significantly exposed to airborne crystalline silica -- the existence of which has been documented throughout the quarry neighborhood, is a known product of blasting and is predicted by the models employed by the DEIR. Once a person is exposed to this silica, there is limited or no clearance from the lungs. Pathology is cumulative over the lifetime of the individual. This is a troubling figure, given a 10-20 year latency period and a 25-year history of quarry activities.

To clarify -- crystalline silica of the size being detected (less than 7.5 microns), when inhaled, ends up in the alveoli, the smallest end branches of the lungs. It cannot effectively be removed or cleared (even though the macrophages from the immune system attempt to remove the particles). The irregular pleomorphic forms demonstrated on the micrographs are more difficult to clear and result in an ongoing inflammatory process in the lung that can result in interstitial fibrosis (a debilitating
progressive disease), an increased incidence and risk of lung cancer, autoimmune disorders, renal disease and exacerbation of all concurrent respiratory ailments—asthma, emphysema, bronchitis, allergic disorders. The young and elderly are particularly at risk, but all are exposed. (Asbestos is a "needle-like" fiber of similar size with more publicized health consequences—this needs to be taken equally seriously.) This is a serious public health risk that will adversely affect public health, resulting in higher morbidity and mortality in this segment of the population—and it is completely preventable.

(4) Health Questions. These are the questions that should be addressed by the EIR:

- What is the total burden of crystalline silica in the environment from 25 years of blasting and mining at the quarry? Since the inception of operation of the quarry?
- What can be done to mitigate this existing burden?
- Are there pockets of higher than expected incidence of asthma, respiratory ailments or respiratory failure, pulmonary interstitial fibrosis, lung cancer, renal cancer, autoimmune disorders in the area near the quarry? In Marin County in general?
- Is there a higher morality rate in the area near the quarry?
- What is the anticipated increased incidence of these disorders and mortality given the latency period and extensive knowledge of silicosis, which is the end result of inhaling crystalline silica?
- How can the EIR define a tolerable limit for inhaling crystalline silica when it has not determined the quantity of inhaled silica in the population over the past 25 years of operation? Over the life of the quarry?
- What is the lifetime expectancy of respiratory and other illness in the community for all parties, with particular attention to the subset of children and the elderly?
- What is the additive effect of diesel and other toxins resulting from quarry activities?
- What measures have been taken to protect the workers at the quarry?
- Since the technology exists to completely contain dust by enclosing the quarry pit, why was this not done in past oversight?

I BELIEVE THAT THERE IS AN EXISTING PUBLIC HEALTH BURDEN AND RISK THAT WILL PERSIST EVEN WITHOUT ANY ADDITIONAL QUARRY ACTIVITIES. The existing health problems are most likely the tip of the iceberg given the latency time of pathogenesis. Given these facts, there should be ZERO tolerance for any further production of airborne crystalline silica. The public health consequences are similar to radiation—cumulative, insidious, potentially lethal. The lifelong burden of the individual is the key issue.
Because there is little or no clearance of respirable crystalline silica, a large population of Marin is at current and lifelong risk, which needs to be assessed in concert with other synergistic co-carcinogens expelled by the quarry. To allow “threshold levels” absent this assessment is irresponsible. A full public health and epidemiologic assessment should be completed, dating back to day one of quarry operations.

We are also concerned about the calculations contained in the health risk assessment modeling. Those calculations are complex, and the backup data is not sufficient to allow for an independent review. Since many conclusions in the EIR will be based upon the results obtained from the modeling calculations, County staff should be completely sure that the consultants paid to produce these calculations are unbiased and capable of producing accurate calculations.

In addition, the EIR should contain clear graphs that compare clearly to non-scientists the tolerable limits of exposure to crystalline silica (which are very low) and the exposures presented by living close to the quarry.

On a personal note, I submit pictures of one week’s “dust” accumulation on back decks facing the quarry in 2006 and 2007. If the composition is the same as that sampled in the neighborhood, inhaling the quantity of crystalline silica on a tabletop after 1 week is probably sufficient to induce silicosis. This is completely unacceptable. Immediate mitigation is required. The continued practice of disseminating crystalline silica into the neighborhood is unconscionable. A health burden has already been created by the quarry’s past actions, which is not sufficiently addressed or accounted for in the DEIR. I see no economic, political or scientific justification for anything less than zero tolerance for airborne crystalline silica particles. I know of only two ways to mitigate: (1) close operations, or (2) completely cover and contain the quarry pit and barge out all products.

(5) **Air Quality. Diesel.** The DEIR includes a list of the known toxic and carcinogenic effects of diesel. However, it is also important to assess the cumulative health impact of diesel and dust as synergists and over 25 years of increasing exposure. There is documented evidence of higher incidence of asthma and respiratory illness along trucking routes. There is anecdotal evidence of higher rates of asthma and respiratory ailments in school children along Pt. San Pedro Road. What are the projected and cumulative public health impacts particularly to children exposed to high levels of particulate diesel dust?

(6) **Noise.** Isolated peak decibel levels need to be regulated, not averaged. The DEIR’s calculation of noise as an average decibel level over 24 hours is a contrivance. Noise should be calculated during hours of peak operation. We, the residents of San Rafael, should be protected by the same maximum noise decibel standards of other taxpaying residents of San Rafael, which I recommend as the acceptable highest threshold. This is a health as well as a nuisance issue. Low levels of persistent noise and high decibel noise can cause or accelerate conductive hearing loss. The proposed extended operating hours of the quarry into the evening are unacceptable and an expansion of their activities, which are already at the highest nuisance level. The proposed reclamation plans will result in noise levels and nuisance levels far in excess of anything that we have experienced in the past because of greater proximity and intensity of the project.
(7) **Air Quality/Accountability.** The DEIR documents high incidence crystalline silica in quarry pit core sample matching crystalline silica sampled throughout Pt. San Pedro Road. Crystalline silica does not occur in nature, only as a result of blasting, grinding, quarry activities. The quarry is the only enterprise in the county engaged in such activities and distribution follows the prevailing wind patterns and has been captured on video, photographs, etc. Therefore the crystalline silica found disseminated in the county is fugitive dust and a marker of the extent of quarry dust impacting health and property. There are health and, from what I have seen, property damage consequences of fugitive dust, particularly crystalline silica. From my personal observation and experience, fugitive dust stains and damages painted surfaces, requiring frequent repainting, maintenance, and other repairs, including steam cleaning, etc. The quarry should be responsible for the consequences of fugitive dust and its clean up.

WHERE DOES THE DEIR DEFINE QUARRY RESPONSIBILITY for clean up of cumulative and ongoing damage of dust, which by objective analysis is fugitive? I suggest that the final EIR address compensation for ongoing cleaning, maintenance and repair in dealing with fugitive dust and its adverse effects on private residences as well as public property as part of the mitigation of damages. There is a 25-year burden of dust that the community and its residences have had to clean up at their expense. The proposed reclamation plan will result in dust, noise and other environmental issues, far in excess of prior quarry activities particularly for those in close proximity to the quarry.

(8) **Blasting.** I dispute the conclusion of the DEIR that the blasting/vibration effects of the quarry are tolerable and within acceptable limits and do not result in perceptible nuisance or property damage. The DEIR must reexamine this conclusion, which is inconsistent with my experience and that of my neighbors. I believe that the model employed in the DEIR is inadequate and does not reflect the actual empiric conditions of the quarry blasting operations. The data sample is skewed to the last few years when the quarry has been under court restrictions, required “good behavior,” and does not consider prior, more intense blasting activities. My understanding of the assessment of blast damage as explained to me by the structural engineers is as follows: Vibration damage to vertically oriented hillside houses caused by blasting is like striking a tuning fork; with ground level vibration transmitted through the frame to the top of the structure with maximum movement and damage at the higher levels. Small movements in the framing work their way through the framing over time. The results are the cracks, shifting in framing, tearing of seams (and in my case an incident several years ago of actual movement of a small part of framing, which was regarded after scrutiny by my insurance provider as blast related). Damage is similar to that seen in earthquakes, centered around stairwells and more fixed structural elements (including loosening of screws other structural elements), and apparently not the same as normal wear and tear from thermal changes. Dry wall is particularly vulnerable. From what I understand, measurements should not be at ground level as are those in the DEIR, but at the upper or top floors (most often the primary living area of the houses), which are exposed to the most movement.
The EIR model should assess damages due to repetitive blasts per year over multiple years, reflecting the actual conditions. The DEIR sets acceptable tolerances based on a solitary blast at ground level without considering the cumulative effect of repetitive blasts. The blasting period sampled was while the quarry was under court and county scrutiny and on good behavior relative to the intense blasting that precipitated these actions. A model should be used addressing the structural consequences of repeated blasting and vibration to multistory vertically oriented hillside houses subjected to years of repetitive vibration, assessing blasting levels used both prior to and after court ordered restrictions.

Some of the damage my neighbors and I have encountered (mostly prior to court controls of the quarry) have included cracks, movement of framing; broken water pipes and broken artwork due to blasting vibration damage. Several years ago my house was inspected by structural engineers and a contractor, who acknowledged blast related damages, which required repair, despite the house being very well built and relatively new. (See attached photographs recording some of the damage.)

My neighbors and I also invest considerable sums of money replacing failed "lifetime" dual pane windows (ONLY ON THE QUARRY SIDE OF THE HOUSE), which we believe is attributable to the repeated vibration and de-gassing of the windows. The quarry has assumed minimal accountability for damage to local houses and no clean up costs. The analysis of the DEIR in this regard is contrary to the empiric data in the neighborhood. “Wear and tear” is not a sufficient explanation, as most of us have owned other houses where we have not experienced these problems. I suggest a broader and deeper examination. I believe that the cumulative damage to the neighborhood from repetitive blasting and the costs sustained by the neighbors over many years should be addressed prior to allowing any additional extended quarry activities.

(9) Proposed Reclamation Plan. The quarry has apparently exceeded its originally allowed footprint, and the pit has exceeded its originally permitted depth. The documented environmental impact of reclaiming the existing pit is substantial. The environmental impact of reclamation after the proposed 17-year expansion would be intolerable, and possibly not achievable. Specifically, the quarry plans to create a 70-foot temporary berm of debris within close proximity to houses, magnifying the noise, dust blasting, nuisance and eyesore issues far beyond anything that it has done in the past. It will also create a wall blocking bay views for many houses and replacing that with a pile of toxic debris. Besides compromising the health, quality of life, and peace of mind of the neighborhood, including those from outside the neighborhood who frequent the McNears Beach and Park, it will damage or destroy the market value of neighboring houses. I suggest that an environmentally safe reclamation plan be considered first before an additional quarry expansion is considered.

(10) Public “need” versus public welfare. I have heard the argument that compromising the public health, wellbeing, and quality of life can be justified because the quarry is a necessary service to the community. The quarry is not an essential service. It is a business. My understanding is that there are ample alternative sources to the quarry for local supply and sources for materials that can be provided in the event of “emergent”
need (the levies being the most often cited). The final EIR should thoroughly explore these alternatives. Furthermore, the convenience of a local supply, no matter how great, cannot be great enough to justify being in the business of disseminating crystalline silica into the community, which will shorten the lives of some and erode the health of many in the community, particularly impacting children and the elderly.

(11) "Disclosure." I listened to the verbal comments of certain quarry proponents at the March 25, 2008 hearing that appeared to imply that residents cannot object to the quarry because it existed prior to their decision to move within the vicinity. First, it is my understanding that Dutra bought the quarry subject to nonconforming use and permit restrictions that he has ignored over the past 20 years (facilitated by the failure of oversight). Second, and in my own case, when I moved into the area, I was told by the realtor that the quarry was "winding down" its activities and that it was being converted into a harbor. Other than reference to "occasional, rare trucking noise," there was no disclosure or other reference to the list of issues in this letter. As has been the case with my neighbors, we chose to move to the area because of its natural beauty and "peacefulness." I believe that the argument that the neighbors should accept the status quo because they knowingly chose to live next to the quarry is without merit and should not be taken into consideration in the final EIR's conclusions.

In summary, I have outlined in this letter several significant concerns regarding the DEIR and would appreciate your thoughtful consideration of the issues I have raised in my letter. Thank you.

Sincerely yours,

Donald Widder, M.D.

See Attachments:

Figure 1: Clear glass top table, upper deck, facing quarry. One week's accumulation of dust. Spring 2006.

Figure 2: Clear glass top table, lower deck, partially covered deck facing quarry. One week's accumulation of dust. Summer 2007.

Figure 3: Dust – following a blast.

Figure 4: "Broken" artwork that fell off a wall as a result of a blast.

Figure 5: Torn seams related to blasting.
Comment Letter 47: Donald Widder, MD

47-1 This comment is preamble; it introduces the points that follow, which are responded to below.

47-2 The commenter is incorrect in stating that the HRA omitted consideration of health effects of past operations. See Impact C4.2-12 in Section 4.2, Air Quality, which concludes that past quarry operations, in combination with the AQP and ARP project, and with post-reclamation land uses or possible future quarrying, poses a significant, unavoidable health risk.

The HRA was prepared using guidance provided by OEHHA, as is customary for environmental documents prepared pursuant to CEQA.

Regarding “non-health environmental impacts of blasting,” please see Impact P4.7-7 in Section 4.7, Noise and Vibration; please also see Master Response 8 in Section 7.2 of this document.

47-3 The Draft EIR includes a complete HRA. The HRA concludes that an incremental increase in cancer risk is a significant and unavoidable cumulative impact (Impact C4.2-12 in Section 4.2, Air Quality).

47-4 Regarding air quality effects of berm construction, please see Impacts R4.2-1 (criteria pollutant emissions from reclamation grading phases 1-3) and R4.2-2 (criteria pollutant emissions from reclamation grading phase 4) in Section 4.2, Air Quality. The HRA also considers toxic air contaminant emissions associated with proposed reclamation activities, including berm construction.

47-5 Regarding visual impacts of the proposed berm, please see Impact R4.1-3 and Figure 4.1-12 in Section 4.1, Aesthetics.

47-6 The commenter is apparently referring to the conclusion of “less than significant” for Impact C4.2-10 (chronic health risk) and Impact C4.2-11 (acute health risk). These impacts were found to be less than significant because the modeled level of exposure for the substances emitted by the Quarry resulted in Hazard Index Ratings below the significance threshold. The EIR preparers agree that exposure to airborne crystalline silica is potentially lethal, and that exposure above the REL established by OEHHA (3.0 micrograms per cubic meter, averaged over a 1-year period) would be a significant effect. Modeled exposure was, however, considerably lower than the REL, and therefore the effect was found to be less than significant. The EIR preparers appreciate the graphic and disturbing description of the pathology of silicosis provided by Dr. Widder, and agree that a correct and accurate assessment of the health risks associated with exposure to crystalline silica emitted by the Quarry is of the utmost importance; this issue was
carefully and thoroughly examined in the Draft EIR, and further considered in these responses to comments.

47-7 With respect to the “total burden of crystalline silica in the environment from 25 years of blasting and mining at the quarry,” the chronic REL that was published by OEHHA was derived from observing health effects on workers exposed to crystalline silica for a period of 8 to 16 years. Based on this exposure period, OEHHA derived a chronic REL. Therefore the REL accounts for long-term (cumulative) exposure. The Draft EIR analyzes a worst case condition for the projects by calculating the annual average concentration for the year of highest emissions and compares this value to the chronic REL established by OEHHA; even though the multi-year average exposure level from the projects would actually be lower. Therefore, long-term (cumulative) exposure is accounted for, and its effects conservatively estimated, in the analysis.

An epidemiological study to determine whether there are pockets of higher incidence of respiratory ailments and lung disease, autoimmune disorders, renal cancer, and mortality, or to predict the future rate of such, are beyond the scope of an EIR.

Both cancer and non-cancer risks of exposure to diesel particulate matter (DPM), as well as other toxins, are examined in the HRA.

The Quarry must ensure that working conditions meet state and federal standards for occupational health and safety.

The Main Quarry Bowl is currently approximately 2,000 feet long, 800 feet wide, and 250 feet deep. Covering the Main Quarry Bowl would appear to strain the limits of feasibility; in any event, determining whether this is feasible is well beyond the scope of an EIR.

47-8 Regarding cumulative or lifetime exposure to crystalline silica, please see the response to the previous comment.

47-9 Please see the response to comment 46-1.

47-10 Figure 4.2-6 in Section 4.2, Air Quality (as corrected in this Final EIR) maps chronic health risks. As indicated in Table 4.2-17, the majority of the chronic health risk is from crystalline silica. Figure 4.2-6 maps chronic health risk expressed as the Hazard Index (HI) Rating. For crystalline silica, 1-year average exposure of 3.0 micrograms per cubic meter would result in an HI Rating of 1.0; any concentration above this would be significant. Note that, even with the inclusion of other toxic air contaminants, the highest chronic HI Rating predicted in the HRA is .61. Of this, .56 is from crystalline silica, which corresponds to an average annual concentration of 1.68 micrograms per cubic meter. Note that many conservative assumptions were used in the HRA, such that the predicted concentration is a worst-case estimate.
47-11 Both cumulative (past, current, and future) and project cancer risks from DPM and other carcinogens are analyzed in the HRA; see Impact C4.2-9 (cancer risks from the two projects combined) and Impact C4.2-12 (cumulative health risks from past, current, and future emissions). Health effects of DPM exposure for residents, school children and teachers, and recreational users of McNear’s Beach County Park were also calculated. Regarding synergistic effects of exposure to multiple toxins, please see the response to comment 17-2.

47-12 Regarding noise standards and methods employed in the noise analysis, see Master Response 12 in Section 7.2 of this document. Regarding proposed extended hours of operation, see Impact P4.6-6 and Mitigation Measure P4.6-6b in Section 4.6, Land Use and Planning. Noise impacts associated with proposed reclamation activities are considered in Section 4.7, Noise and Vibration.

47-13 The commenter’s statement that “crystalline silica does not occur in nature” is incorrect. See the response to comment 23-1. See also the response to comment 45-1.

47-14 Compensation for effects of past operations cannot be considered in an EIR.

47-15 Regarding impacts from blasting, please see Master Response 8 in Section 7.2 of this document.

47-16 Please see the analysis of alternatives to the proposed Amended Reclamation Plan in Chapter 6, Alternatives; see also Master Response 4 in Section 7.2 of this document.

47-17 This comment addresses the merits of the project, not the environmental analysis.

47-18 This comment does not address the environmental analysis.

47-19 Receipt of the attached photographs is acknowledged.
April 11, 2008

Tim Haddad
Environmental Coordinator
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, CA 94903-4157

Re: San Rafael Rock Quarry

Dear Mr. Haddad,

My name is Daniel Wilson. I serve as a trustee for Reclamation District 563 and 2111, responsible for 30 miles of levees in the Delta. In my role as a member of the Delta Protection Commission and our local planning board, I have dealt with issues similar to the one you are faced with.

It has come my our attention that the Marin County Board of Supervisors will be conducting a public hearing to review comments regarding the County’s draft EIR relating to the San Rafael Rock Quarry (SRRQ).

SRRQ is currently the only marine based rock quarry in the Delta. Marine based transportation of rip rap is an economical and sensible way of maintaining our levees. The levees in the Delta require lots of rock to maintain them.

If SRRQ is shut down, it would create a severe problem in maintaining these levees. That in turn would create a problem for the ecological, recreational and business uses of the 700,000 acres in the Delta. In addition, inability to maintain these levees in a sensible, economical fashion would jeopardize the water supply of millions of Californians.

SRRQ is a valuable resource for California. It is important that this facility continue to serve a vital component of the Delta

Sincerely,

Daniel Wilson
Comment Letter 48: Daniel Wilson, Trustee for Reclamation District 563 and 2111

48-1 This comment addresses the merits of the project, not the environmental analysis. Please see Master Response 12 in Section 7.2 of this document.
Board of Supervisors  
County of Marin  
3501 Civic Center Drive  
Room #329  
San Rafael, CA 94903  

March 14, 2008

Dear Supervisors McGlashan, Brown, Arnold, Adams & Kinsey,

When I read of the purported evils brought about by the San Rafael Rock Quarry, I wonder if I’m living in the same neighborhood with those who complain!

My family and I, along with many of my Peacock Gap friends and neighbors, coexist peacefully with that long-established business. It’s a business that continues to contribute to the economy and well-being of Marin, California and places beyond. I have a sense of security knowing that, should there be a major disaster relating to the infrastructure of the county, the means to address it are at hand.

Thousands of new homes and condominiums have risen in East San Rafael since my family and I moved to Peacock in the mid-sixties. The development of Peacock Greens, San Pedro Cove, Chapel Cove, Heritage, Partridge, Marin Bay Park, to mention a few, have necessitated the widening of the once lovely two-lane eucalyptus-lined San Pedro Road. It is not only trucks that congest the route to downtown and the freeway. It is also the cars of new residents whom we’ve welcomed, and who, like us, knew of the quarry and of pending development when they bought their homes.

I believe Quarry management has made extensive and honest efforts to appease its neighbors, old and new. As members of a community, we often must accept modest sacrifices for the common good. I suggest it is time to acknowledge that the Quarry has a right to operate at its site and that its neighbors be made aware that their ultimate goal of eliminating it is unjust and selfish.

While County government has the responsibility to ensure that the Quarry operates within its mandates, it also has many other important concerns to address. I urge you to move on to those.

Respectfully,

Sandra M. Yoffie

[Signature]
Comment Letter 49: Sandra M. Yoffie

49-1 This comment addresses the merits of the project, not the environmental analysis.
Marin County Board of Supervisors Meeting Minutes

REGULAR MEETING OF THE MARIN COUNTY BOARD OF SUPERVISORS HELD TUESDAY, MARCH 25, 2008, AT 9:47 A.M.

Roll Call
Present: Supervisor Kinsey; Supervisor Adams; Supervisor McGlashan
Absent: Supervisor Brown; Supervisor Arnold

16. Hearing: Consideration of the Combined Draft Environmental Impact Report ("DEIR") for the San Rafael Rock Quarry ("SRRQ") Amended Reclamation Plan and Amended Surface Mining and Quarrying Permit ("AQP")

By letter dated March 25, 2008, Community Development Environmental Planning Coordinator Tim Haddad submitted his report and recommendations regarding the above-captioned matter.

(Supervisor Brown present at 1:40 p.m.)

Environmental Planning Coordinator Tim Haddad advised that staff recommends the Board conduct a public hearing and direct staff to prepare the Final Environmental Impact Report ("EIR") based upon the responses to all of the oral and written comments received during the public review and comment period which will end on April 14, 2008. Mr. Haddad stated that this is a Combined Draft Environmental Impact Report ("DEIR"), for the Quarry Permit and the Reclamation Plan and advised that no action is being taken today.

Public Works Senior Civil Engineer Eric Steger provided a brief visual presentation with an aerial view of the San Rafael Rock Quarry ("SRRQ") vicinity and summarized the Amended Surface Mining and Quarrying ("AQP") Permit and the Amended Reclamation Plan ("ARP"). Mr. Steger introduced Community Development Agency Environmental Planner Rachel Warner.

Ms. Warner continued the presentation summarizing the project background and history, the Draft EIR process, ARP and AQP project impacts as well as cumulative impacts, the plan consistency, ARP and AQP alternatives, and comments received thus far on the DEIR.

Environmental Science Associates and County EIR Consultant Dan Sicular concluded the presentation regarding SRRQ health risk assessments and reported that acute (short-term) exposure impacts from toxic air contaminants as well as chronic (long-term, non-cancer) exposure impacts, are less than significant. Mr. Sicular advised that there is a significant and unavoidable cumulative health risk associated primarily with Diesel Particulate Matter ("DPM").

The hearing was declared open to receive public testimony.
ENVIRON’s Global Air Quality Practice Area Leader Shari Libicki, Ph.D. advised that she has viewed the DEIR for the San Rafael Rock Quarry, stated that the proposed operation of the Quarry as mitigated presents no significant risk and is the best environmental alternative, and advised that combined impacts from ongoing operations and future reclamation can be avoided.

Representatives of the San Pedro Road Coalition, the Marin Conservation League, and several Marin Bay Park and San Pedro Road residents expressed concerns regarding several issues including: traffic impacts, noise impacts, health impacts, and incomplete maps.

Representatives of Marin Builders, Ghilotti Bros., Inc., the Bay Planning Coalition, and several Glenwood, Peacock Gap, and Bayside Acre residents spoke in favor of the SRRQ and advised that they believed it to be a vital resource to Marin County.

Dutra Group representative Aimi Dutra addressed the board and noted that Dutra is committed to working with the community and the County.

Seeing no one else present to speak, the hearing was closed.

Dr. Libicki responded to a question from Supervisor McGlashan regarding daily mass emission rates of carbon monoxide, dust, and nitrogen oxide if the reclamation activity overlapped the surface mining operations and advised that the Quarry is willing to reduce daily mining operations while reclamation activity was occurring.

San Rafael Rock Quarry Counsel Chris Locke responded to a question from Supervisor McGlashan regarding the legality of a berm in the baseline of the northern portion of the Quarry, stating that the quarry is enjoined from constructing the berm subject to the Board’s approval to resolve the prohibition.

Supervisor Adams briefly commented on mitigation issues regarding the amended DEIR including a possible enclosure of the SRRQ, and requested more information in regards to air quality, the synergistic effect of the various chemicals, harbor water quality and analysis to improve circulation, and the benefits of the quarry.

Supervisor McGlashan requested staff to give a clearer description of Crystalline Silica in the DEIR and future cumulative environmental impacts in relation to future EIRs.

Mr. Haddad reminded the public that comments are due in his office postmarked by 5:00 p.m. on April 14, 2008, in order to be considered in the final EIR. Mr. Haddad advised that a date will then be set to bring the final EIR forward for a ten day review after which the EIR will be certified and a merit hearing will take place.
Comment Letter 50: Summary of Oral Comments Received at the Board of Supervisors Hearing, March 25, 2008

50-1 On behalf of the applicant, Dr. Libicki also submitted written comments on the same topic. Please refer to Comments 19-98 through 19-104, and the responses to these comments, above. See also Master Responses 1, New Information, and 5, Health Risk Assessment, in Section 7.2, Master Responses.

50-2 These speakers all submitted written comments that cover the same topics and issues raised in oral comments; please see comments and responses to letters 29 and 30 (Point San Pedro Road Coalition), letters 26 and 27 (Marin Conservation League), comment letter 23 (Marin Bay Park Homeowners), and others, above; the complete list of comment letters is provided in Table 7.1-1 in Section 7.1.

50-3 These comments go to the merits of the project, not the environmental analysis. See also Master Response 12 in Section 7.2, Master Responses.

50-4 This comment does not address the environmental analysis.

50-5 Please see Master Response 1, New Information, in Section 7.1; also see the response to comment 2-3, above, and new mitigation measures 4.2-1i and j in Section 4.2, Air Quality.

50-6 This issue is also discussed in comment 21-1, and in the corresponding response, above.

50-7 Enclosure of portions of the SRRQ operations is considered in the Reduced Alternative to the AQP; see Master Response 4, Alternatives, in Section 7.2. Supervisor Adams also raised the issue of synergistic effects of air toxics in her written comments on the Draft EIR (letter 17); see comments 17-1 and 17-2, and the corresponding responses, above. Harbor water quality is further discussed in the light of new information received since publication of the Draft EIR in Master Responses 1, New Information, and 7, Flooding the Main Quarry Bowl. Benefits of the Quarry are discussed in Master Response 12, Importance of the Resource.

50-8 The toxicity of crystalline silica and the approach to evaluating health risks of this substance are discussed at length in comments and responses to comments. Conclusions regarding health risks of crystalline silica exposure from the Quarry are summarized in Master Response 5, Health Risk Assessment, in Section 7.2. Please refer to the following comments and responses, all of which address crystalline silica: 19-102, 23-1, 23-2, 23-8, 23-7, 27-5, 30-8, 30-13, 30-14, 30-16, 30-17, 30-19, 30-21, 30-29, 30-32, 30-34, 30-38, 30-52, 30-63, 30-99, 35-3, 36-3, 39-4, 45-1, 45-4, 45-5, 45-6, 45-7, 46-1, 47-6, 47-7, 47-8, 47-10, 47-13.
References


Peer, Brian, San Rafael Rock Quarry Operations Manager, email communication with Dan Siculur, ESA, re: fuel type used in SRRQ tugs, January 28, 2008.

Peer, Brian, San Rafael Rock Quarry Operations Manager, email communication with Dan Siculur, ESA, re: production volume of asphalt; use of biodiesel, January 16, 2009.


CHAPTER 8
EIR Authors, Persons, and Organizations Contacted

8.1 EIR Authors
Marin County Community Development Agency
3501 Civic Center Dr.
San Rafael, CA 94903

Tim Haddad, Environmental Coordinator
Rachel Warner, Environmental Planner

Marin County Department of Public Works
3501 Civic Center Drive
San Rafael, CA 94903

Eric Steger, Senior Civil Engineer

8.2 EIR Consultants
Environmental Science Associates
225 Bush Street, Suite 1700
San Francisco, California  94104

Project Director: Gary Oates
Project Manager: Dan Sicular
Deputy Project Manager: Paul Mitchell
Project Description: Dan Sicular
Aesthetics Section: Chris Mueller, Dan Sicular
Air Quality Section: Chris Sanchez, Robert Vranka, Paul Miller,
                   Michael Ratte (KB Environmental)
Biological Resources Section: Martha Lowe, Mike Podlech
Geology, Soils, and Seismicity Section: Peter Hudson, Eric Schniewind,
                                      Paul Seidelman (Seidelman Associates)
Hydrology & Water Quality Section: Peter Hudson, Eric Schniewind, Annika Fain,
                                  Scott Fenical, P.E. (Coast and Harbor Engineering)
Land Use and Planning Section: Chris Mueller, Dan Sicular
Noise Section: Chris Sanchez, Paul Miller, Dan Sicular
8. EIR Authors, Persons, and Organizations Contacted

Hazards Section: Chris Sanchez
Cultural Resources Section: Brad Brewster, Dean Martorana, Dan Sicular
Public Services, Utilities, and Energy: Joshua Schnabel
Population and Housing: Tania Sheyner
Transportation and Traffic Section: Jack Hutchison, P.E. (Registration #T1411), Leslie Lowe
Growth Inducing and Cumulative: Dan Sicular
Alternatives Analysis: Dan Sicular
Graphics: Linda Uehara, Richard Tsai (Field of Vision)
Word Processing: Lisa Bautista, Gus JaFolla
Document Preparation: Erin Higbee

Response to Comments on the Draft EIR: Dan Sicular, Gary Oates, Robert Vranka, Jack Hutchison, Martha Lowe, Mike Podlech, Chris Sanchez, Brad Brewster, Scott Fenical (Coast and Harbor Engineering), Michael Ratte (KB Environmental).

Legal Consultation:
E. Clement Shute, Jr.
Shute, Mihaly & Weinberger LLP

Technical Review of Geotechnical Project Impacts:
Paul Seidelman, Seidelman Associates

Technical Review of Coastal and Tidal Impacts:
Scott Fenical, P.E., Coast and Harbor Engineering

Modeling for Health Risk Assessment:
Michael Ratte, KB Environmental

Internal Peer Review of Health Risk Assessment:
John Castleberry, QEP
Castle Environmental Consulting, LLC

8.3 Persons and Organizations Consulted

Lists of other people and organizations consulted are provided in the references at the end of each section.