



# California Regional Water Quality Control Board

## San Francisco Bay Region



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Lehigh Southwest Cement Company  
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Attn: Henrik Wesseling, Plant Manager ([henrik.wesseling@hanson.biz](mailto:henrik.wesseling@hanson.biz))

Subject: Comments on the Permanente Creek Long-Term Restoration Plan

Dear Mr. Wesseling:

San Francisco Bay Regional Water Quality Control Board (Water Board) staff have reviewed the revised *Permanente Creek Long-Term Restoration Plan* (Revised Plan) (URS Corporation, March 10, 2010); this March 2010 Revised Plan was prepared in response to November 12, 2009, comments provided by Water Board staff on the July 31, 2009, draft of the *Permanente Creek Long-Term Restoration Plan*. The July 2009 draft of the *Permanente Creek Long-Term Restoration Plan* was submitted to the Water Board to comply with Phases 2 and 3 of Remedial and Long-Term Measure C.9 of Cleanup and Abatement Order (CAO) 99-018. Although some of the November 2009 Water Board comments on the *Permanente Creek Long-Term Restoration Plan* have been addressed in the March 2010 Revised Plan, the Revised Plan does not yet completely address the comments provided by the Water Board in November of 2009 and, therefore, the Revised Plan does not yet fully satisfy Remedial and Long-Term Measure C.9. The following comments on the Revised Plan are provided to guide the necessary revision of the Revised Plan to fully address the November 2009 Water Board comments.

### General Comments

**Original November 12, 2009, General Comment 1:** The Restoration Plan does a fairly good job of presenting an inventory of current creek conditions. However, the discussion of Restoration Recommendations lacks sufficient detail. Reach-specific recommendations are only presented in an abbreviated form in Table 4-2. Chapter 4 should be expanded to include a discussion of restoration options for each of the reaches discussed in Section 2.3 of the Restoration Plan.

Each reach-specific discussion should present all of the restoration options that were considered for the reach, and explain the reason why some options were not considered further for the reach. The discussion should also include an alternatives analysis that explains why some options were

discarded and the restoration option presented in Table 4-2 was selected. Sufficient detail should be provided to allow Water Board staff to determine whether or not they concur with the recommended restoration option for each reach. In addition, each reach-specific discussion should expand upon the information summarized in each column of Table 4-2.

**Water Board Comment on the Response to General Comment 1 in the Revised Plan**

The level of detail in Section 2.3 has been expanded, both by an increase in the number of reaches and in the level of detail in which some of these reaches are discussed. However, the Revised *Permanente Creek Long-Term Restoration Plan* (Revised Plan) (URS Corporations, March 10, 2010), does not include the reach-specific discussions of restoration options that we requested in our November 12, 2009 letter of comment on the *Permanente Creek Long-Term Restoration Plan*. The current version of Table 4-2 in the Revised Plan does not provide sufficient detail to clearly present the recommended restoration actions and the reasons for rejecting alternative restoration actions. For example, in the row for Reach 2, the installation of step pools or cross vanes is proposed. But there is no discussion of the relative suitability of each restoration technique in Reach 2. The discussion for Reach 6, Trapezoidal Concrete Channel, should include some discussion of the channel dimensions (e.g., bankfull channel dimensions, meander radius, sinuosity, etc.) that may be appropriate to restoring a natural channel in this reach. Please provide the explanatory text for all reaches that we requested in our November 12, 2009 letter.

The fifth column in Table 4-2 is labeled, "Potential Restoration Measures and Selected Techniques\*". The asterisk following the column heading does not appear to reference a footnote anywhere in the table.

Most of the illustrations of restoration techniques in Appendix E represent low gradient, high order channels. The illustrations would be more useful to the Revised Plan if they illustrated conditions on the high gradient lower order channels that are actually present at the Permanente Quarry, the aggregate plant, and cement plant (collectively, the Facility).

Restoration Technique E.2, Floodplain/Bankfull Bench Creation. The text describing Floodplain/Bankfull Bench Creation would be improved by clarifying that this technique can involve either fill or excavation to create a floodplain/bankfull bench. The illustration in Figure E-2 shows an instance of fill used to create a bankfull bench, and the phrase "addition of a bankfull bench" implies that fill is involved. In Table 4-2, the summary for Reach 2 does correctly note that excavation would be needed in this reach to establish a bankfull channel. Excavation is much more likely to be a feasible means of restoring bankfull benches at the Facility.

Restoration Technique E.4, Step Pools. The discussion of this restoration technique should include guidance on the spacing and height of step pools in high gradient, low order channels. Design guidance for step pools is available for these channels and should be referenced.

Restoration Technique E.8, Lunkers. This technique is not actually proposed in the Revised Plan and is not likely to persist over time at most creek reaches at the Facility. This technique should probably be dropped from the Revised Plan.

Restoration Technique E.9, Culvert Modification. It appears that this technique may be appropriate at Reach 9, if the culvert in this reach is necessary for post-quarrying site access. Please evaluate adding this technique to Reach 9.

Restoration Technique E.10, Cribwalls. This technique does not appear to be proposed in Table 4-2. Please explain why cribwalls have not been proposed at any areas of steep banks adjacent to the creek channel.

Restoration Technique E.11, Fascines. This technique does not appear to be proposed in Table 4-2. Please clarify if there are any reaches along the creek that are potentially suitable for this technique.

Restoration Technique E.13, Brush Layering/Mattress/Wattles. This technique does not appear to be proposed in Table 4-2. Please explain if there are any reaches along the creek that are potentially suitable for this technique.

Restoration Technique E.14, Vegetated Rock Riprap. This technique does not appear to be proposed in Table 4-2. Please explain why vegetated rock riprap has not been proposed at any areas that may require bank armoring.

Restoration Technique E.17, Slope Drains. This technique does not appear to be proposed in Table 4-2. Please clarify if there are any reaches along the creek that are potentially suitable for this technique.

Restoration Technique E.19, Erosion Control Mat. Please delete any reference to the use of synthetic fibers or filaments at the Facility. Synthetic filaments can create entrapment hazards for some reptiles.

Restoration Technique E.20, Geosynthetic Reinforced Slopes. Please delete this technique from the Revised Plan. Creek restoration should be implemented using natural materials.

In Section 1.4, *Plan Limitations*, of the Revised Plan, the final bullet in the section contains the following text, "Some restoration measures, recommendations, or schedules may require the Operator to obtain permits from governmental agencies. To the extent that such permits cannot be obtained, or cannot be obtained without an unreasonable undertaking of time or expense (including mitigation requirements), in Operator's sole but reasonable discretion, the Plan does not obligate the Operator to implement such measures, recommendations, or schedules." Since the interpretation of "unreasonable" is left to the "Operator's sole but reasonable discretion" this sentence invalidates the utility of the Revised Plan. The Water Board does not have a history of requesting unreasonable mitigation for restoration actions. Please remove this bullet from the Revised Plan.

**Original November 12, 2009, General Comment 2:** Discussions of several of the creek reaches (Reaches 5, 8, 9, 10, 11, 12, 13, 14, 15, and 16) note that creek banks have stabilized

since the last creek assessment in 2000 and 2001; this was noted especially at the debris deposits in several of the upper reaches. This suggests that the historic debris/overburden deposits are contributing less sediment to the channel than they were nine years ago. Because of this, the need for sediment storage capacity at the facility may be reduced in the future, and a sediment supply study should be performed. Results of this study can be used to guide future sediment management at the facility.

Water Board staff acknowledge that the Restoration Plan may not be the most appropriate venue for studying the current supply of sediment from the facility to Permanente Creek. But such a study is relevant to ongoing permitting for sediment basin management. Before sediment removal permits are issued for Ponds 13, 14, and/or 22, an evaluation is needed to assess the change in sediment input between 2000 and 2009, resulting from improved slope stabilization. The sediment evaluation should address:

- Opportunities for improving sediment capture on the uphill side of the access road, east of Pond 13. The study should evaluate if the existing series of roadside berms can be modified to create actual settling basins along the north side of the access road.
- The possibility of modifying portions of the material stockpile area east of the Dinky Shed to accommodate additional off-channel sedimentation basins.
- Opportunities to remove unnecessary culverts over the creek as a means of reducing the generation of sediment along the creek.
- Opportunities for further bank stabilization as a means of reducing the input of sediment to the creek.
- Identifying opportunities for floodplain storage of sediments.

#### **Water Board Comment on the Response to General Comment 2 in the Revised Plan**

In Section 1.4, *Plan Limitations*, of the Revised Plan, Lehigh proposes to conduct a sediment supply study for the facility in the context of improving the facility's Industrial Stormwater Pollution Prevention Plan (SWPPP). Water Board staff agree that it is appropriate to evaluate sediment sources, loading, and effectiveness of sediment controls in the context of evaluating improvements to the facility's SWPPP.

#### **Specific Comments:**

##### **Original November 12, 2009, Specific Comment 1: Section 1.5 Plant and Animal Communities**

This section refers to the biological resources description in the 2001 stream reach inventory. Since eight years have elapsed, it may be worthwhile to update the inventory. For example, California red-legged frogs (CRLF) were not identified at the facility in 2000. In addition, the inventory from the Phase I report should be reproduced as an appendix to the Restoration Plan so that reviewers of the Restoration Plan can assess how the need to preserve biological resources (e.g., breeding and foraging habitat for CRLF) has influenced the selection of potential restoration actions.

**Water Board Comment on the Response to Specific Comment 1 in the Revised Plan**

The biological resources component of the Phase I report has been provided as Appendix B to the Revised Plan. Section 1.5 of the Revised Plan notes the presence of California red-legged frogs (CRLF) in Ponds 14, 21, and 22, including successful breeding in Pond 14 in more recent years.

Section 2.4 discusses locations where conditions observed in the 2009 field survey differed from conditions described in the Phase I report. The Revised Plan appropriately responds to Specific Comment 1.

**Original November 12, 2009, Specific Comment 2: Section 1.6 Updates from the Phase 1 Report**

The figure comparing the Phase 1 reach inventory stream reaches with the 2009 stream reaches in the Restoration Plan is useful, but it would also be useful to add another row to the figure in Section 1.6 that links the reaches to the figures in Appendix A. In Appendix A, the onsite channel of Permanente Creek is presented in 14 figures. It's awkward to cross-reference the 17 creek reaches discussed in the 2009 Restoration Plan with the 14 topographic aerial photographs in Appendix A. Table 4.2 further complicates the description of locations along the creek, since future restoration sites are labeled [A] through [R].

**Water Board Comment on the Response to Specific Comment 2 in the Revised Plan**

The Revised Plan uses a revised nomenclature system to identify the reaches of the creek within the Facility boundaries. Appendix C to the Revised Plan provides a table that facilitates comparison of Phase I reach nomenclature and the nomenclature in the Revised Plan. However, some reach identifications that were used in previous documents (e.g., Reaches G and L) are not included in Appendix C. Please add these reaches to the table in Appendix C.

**Original November 12, 2009, Specific Comment 3: Section 2.3 Results of Geomorphic Assessment****[1] Pond 14 Outfall Channel.**

Text in this section refers to an eight-foot high headcut in this channel. However, the Restoration Plan does not state whether or not this headcut was present in 2000. If the headcut was present in 2000, the Restoration Plan should describe if it has migrated appreciably in the intervening years and if it is still actively migrating. Also, the text should describe whether or not the headcut threatens the berm that creates Pond 14. The assessment in the revision of Section 4 should discuss potential triggers of the headcut and propose means to stop the progression of the headcut.

**Water Board Comment on the Response to Specific Comment 3 in the Revised Plan**

The Revised Plan does not directly discuss the history of the headcut, but the response to comments provided by Lehigh states that the year 2000 survey did not contain sufficient information to determine whether or not the headcut was present in 2000. The Revised Plan does note that the headcut may threaten the stability of the sluice gate at the outfall from Pond 14, and that four trees are currently stabilizing the channel between the headcut and the sluice

gate. The requested discussion of potential triggers of the headcut has not been provided in the requested revision of Section 4. Please provide the requested information.

**Original November 12, 2009, Specific Comment 4: [-] Pond 22**

The text states that the Pond was not assessed as a reach because of its artificial nature. This appears to be a misunderstanding of the intended goal of the Restoration Plan. Since the pond is artificial and should be considered for removal when quarrying ceases at the facility, the Restoration Plan should evaluate potential removal of the downstream berm and the restoration of the pond as a creek channel. Any discussion of pond removal should also address potential impacts to California red-legged frog (CRLF) habitat if the pond is removed. Text in Section 4.3.1 notes that the potential removal of in-stream ponds may be impacted by the need to maintain habitat for CRLF.

**Water Board Comment on the Response to Specific Comment 4 in the Revised Plan**  
Pond 22 has been assigned a Reach ID in the Revised Plan, as was requested.

**Original November 12, 2009, Specific Comment 5: [4] Pond 22 to Railroad Crossing**

Text in this section states that the channel in this reach is entrenched and widening. The text should be expanded to discuss the relative contribution of channel widening to the sediment collecting in Ponds 14 and 22 in comparison to sediment generated by quarrying activities (e.g., sediment contributions from historic overburden stockpiles, sediment generated at the active quarry faces, sediment generated during rock processing, etc.). Text in either Section 2 or the revision of Section 4 should attempt to determine the cause of channel widening in this reach. The revision of Section 4 should also evaluate whether or not this reach can be stabilized to reduce bank erosion, which would reduce the contribution of sediment from bank erosion to the reduction in storage capacity in Ponds 14 and 22.

**Water Board Comment on the Response to Specific Comment 5 in the Revised Plan**

The Revised Plan includes an expanded discussion of potential sources of instability in this reach of the creek. One of the potential sources of instability that the Revised Plan considers is an input of sediment from the active facility, including rill erosion associated with discharge from a sedimentation pond (See Figure 2-15). The Revised Plan proposes to address this source of sediment in the proposed sediment source study that will be used to update the Facility's SWPPP. The Revised Plan appropriately responds to Specific Comment 5.

**Original November 12, 2009, Specific Comment 6: [-] Concrete Trapezoidal Channel**

Section 4.3.2 states that the 1899 Palo Alto USGS 15-minute topographic map indicates that the creek was located in the middle of the valley, where the railroad tracks are now located. The Restoration Plan assumes that no changes can be made to this reach because of the presence of Union Pacific (UP) property in the former floodplain of the channel. Since this plan is a Long-Term Restoration Plan, it should not be restricted to current land uses and land ownership. When the quarry closes, there will be no economic need for the railroad tracks to the facility. The proximity of the creek, listed species, and constrained topography in the creek valley is likely to severely limit future commercial development of the UP Property. In addition, the shortage of viable mitigation sites in the South Bay area may create financial incentives for

selling the property for use as a riparian mitigation site, or UP may be able to use the land to provide mitigation for UP projects in the South Bay. The Restoration Plan should evaluate the amount of land that would be needed to create a stable, unlined channel in this reach. If Lehigh can provide us with points of contact at UP, Water Board staff are interested in establishing a dialogue with UP about long-term planning for their property at the quarry. This reach should also be assigned a number and evaluated in detail in the revision of Section 4.

**Water Board Comment on the Response to Specific Comment 6 in the Revised Plan**

In Section 1.4, *Plan Limitations*, of the Revised Plan, the Revised Plan acknowledges that Union Pacific Railroad (UP) property at the facility may be available for restoration activities following Facility closure, since there would no longer be a need for a rail line to the facility. Therefore, the Revised Plan treats UP property as potentially available for restoration activities, while acknowledging that actual restoration work on UP property would require approval from UP. The response to comments also provides a point of contact for UP. However, the Revised Plan does not address the second portion of Specific Comment 6, by providing an estimate of the land area that would be necessary to recreate a meandering channel in this reach.

**Original November 12, 2009, Specific Comment 7: [5] Materials Storage Area to Road Upstream of Dinky Shed**

The embankment below Screen Tower No. 4 is reported to have significantly stabilized since 2001. Therefore, this reach should be contributing less sediment to the channel than it did in 2001 (See General Comment 2).

When Lehigh prepares a sediment source/control study, the Materials Storage Area should be studied as a potential location for additional off-channel sedimentation ponds.

**Water Board Comment on the Response to Specific Comment 7 in the Revised Plan**

The response to comments provided with the Revised Plan states that the proposed sediment source study will examine several potential locations for new sediment control features at the Facility, including the Materials Storage Area.

The expanded description of creek reaches in the Revised Plan also notes that discharges from Pond 9 contribute turbidity to the creek, and proposes to study this source of sediment in the proposed sediment study.

The 2009 study conducted for the Revised Plan also identified geotechnical exploration roads in the upper watershed as a potential source of sediment to this reach. A follow-up study in 2010 also identified sediment from a storage area. These contributions of sediment to the creek will be evaluated in the proposed sediment source study. Specific Comment 7 is appropriately addressed in the Revised Plan.

**Original November 12, 2009, Specific Comment 8: [8] Parallel Buried Culvert to Full Culvert.**

Since the 2000 assessment of this reach, an eroded bank on the south side of the Creek near Station 75+00 has become stable and vegetated, and no longer appears to be a significant sediment source (See General Comment 2). The discussion of this reach in the revision of

Section 4 should be expanded to evaluate options for using the footprint of the old culvert as an opportunity for stabilizing the creek by adding length to the creek channel. The Restoration Plan should also discuss whether or not the channel could return to the path through the old culvert in future meanderings of the channel. Further efforts should be made to locate the inlet of the old culvert. The Restoration Plan should consider removing or crushing the old culvert to prevent future channel avulsions from being captured in the culvert.

**Water Board Comment on the Response to Specific Comment 8 in the Revised Plan**

The description of the buried culvert has been expanded in the Revised Plan. However, the expanded discussion requested for Section 4 has not been provided.

**Original November 12, 2009, Specific Comment 9: [-] Full Culvert, Half-Culvert, and Pond 13**

This discussion should be revised to describe whether or not the 1899 topographic map can be used to assess how much the full and half culverted stream reaches downstream of Pond 13 have been altered from their historical elevations. The 1899 topographic map may provide sufficient detail to determine if the stream gradient was fairly steep throughout these reaches before quarrying activities impacted the site. It would also be useful in the evaluation of restoration options for this reach to know if these culverts are essentially constructed directly over bed rock. This information may be useful in designing a creek channel after the culverts are removed.

**Water Board Comment on the Response to Specific Comment 9 in the Revised Plan, Part 1**

During preparation of the Revised Plan, the 1899 USGS topographic map was geo-rectified using identifiable landscape features. The geo-rectified topographic map was used to compare historical bed slope in this reach with the current bed slope. Figures 2-3 and 2-4 in the Revised Plan show that, sometime after 1948, construction of the Half Culvert, immediately downstream of current Pond 13, and the Full Culvert, downstream of the Half Culvert, significantly shortened the length of Permanente Creek in this reach. However, the shortening of the channel does not appear to have significantly changed the overall channel slope through this reach (Illustrated in Figure 2-7 of the Revised Plan); this suggests that some level of bedrock control of slope was present in this reach prior to 1948. The 1948 channel alignment in this reach is now below active quarrying activities. The discussion in Section 4 should be expanded to discuss if there is any possibility of returning the creek to its 1948 alignment at the end of quarrying activities. This discussion should examine if restoring the creek to its approximate pre-1948 alignment would require excavation or fill along the historic alignment, or the placement of bridges over a restored historic alignment in order to support the access road.

This reach appears to be in a narrower Canyon than the rest of Permanente Creek at the facility. It may be appropriate to establish a separate reference creek for this reach, since Upper Stevens Creek does not appear to be an appropriate reference for this portion of the creek.

Text in this section of the Restoration Plan states that excavated side slopes along the non-inundated portion of Pond 13 remain steep and mostly unvegetated, but that the Creek appears to be mostly unaffected by these side slopes. The text should be revised to clarify if these side slopes are no longer major sources of sediment to the creek (See General Comment 2).



**Water Board Comment on the Response to Specific Comment 9 in the Revised Plan, Part 2**

The Revised Plan explains why the side slopes above Pond 13 are not likely to be major sources of sediment to the creek. This portion of Specific Comment 9 is appropriately addressed in the Revised Plan

Restoration options for this reach (Station 76+00 to 90+00) are summarized in Table 4-2, in which the reach is subdivided into Locations [M] (Full Culvert), [N] (Half Culvert), and [O] (Pond 13). This is an example of the confusing nomenclature system used in the Restoration Plan.

**Water Board Comment on the Response to Specific Comment 9 in the Revised Plan, Part 3**

As noted elsewhere, the nomenclature for identifying the various creek reaches at the Facility has been significantly improved in the Revised Plan. This portion of Specific Comment 9 is appropriately addressed in the Revised Plan.

**Original November 12, 2009, Specific Comment 10: [9] Above Pond 13 (Station 90+00 to 94+00)**

Text in this section states that the creek has stabilized its bed around a bedrock control in this reach. This suggests that this reach supplies less sediment to the creek than it did in 2000, when an active headcut was observed in this reach (See General Comment 2). The Restoration Plan should clarify whether or not the headcut observed in 2000 has been controlled by a bedrock outcrop in the stream channel.

**Water Board Comment on the Response to Specific Comment 10 in the Revised Plan**

The Revised Plan clarifies that a headcut was not present in this reach during the 2009 survey, and describes the location of bedrock control in the channel at the confluence with a tributary gully on the north side of the main creek channel, at about Station 93+00. Specific Comment 10 is appropriately addressed in the Revised Plan.

**Original November 12, 2009, Specific Comment 11: [10] Upstream of Primary Crusher (Station 94+00 to 105+00)**

Text in this section states that the old debris slide at Station 101+50 is no longer a significant source of sediment, because it is stabilizing. The text also notes that an erosional drainage at Station 97+50, which was identified as a problem area in 2000, was much more stable, although the gully above it was still somewhat active. The Restoration Plan should assess whether or not this gully can be stabilized in the short term to reduce the input of sediment to the creek.

**Water Board Comment on the Response to Specific Comment 11 in the Revised Plan**

The Revised Plan provides a more detailed discussion of the stability of portions of this reach, and also describes measures that Lehigh has taken to redirect runoff from the crusher area away from Permanente Creek and into off-channel, pre-sedimentation Pond 13A. Specific Comment 11 is appropriately addressed in the Revised Plan.

**Original November 12, 2009, Specific Comment 12: [11] Upstream of Primary Crusher to Old Crusher Foundation (Station 105+00 to 116+00)**

Text in this section notes that debris slides at Stations 106+00 and 111+00 are no longer significant sources of sediment, because they are stabilizing. Text also notes that the old overburden slopes are stabilizing. This reach appears to no longer be a significant source of sediment to the creek channel (See General Comment 2).

**Water Board Comment on the Response to Specific Comment 12 in the Revised Plan**

No direct response was required for this comment. The Revised Plan clarifies remaining sediment sources in this reach.

**Original November 12, 2009, Specific Comment 13: [12] Old Crusher Foundation to Downstream End of Pinch Point (Station 116+00 to 134+00)**

Text in this section notes that the creek appears to have predominantly stabilized since 2000. This reach appears to no longer be a significant source of sediment to the creek channel (See General Comment 2).

**Water Board Comment on the Response to Specific Comment 13 in the Revised Plan**

No direct response was required for this comment. The Revised Plan clarifies the current condition of this reach.

**Original November 12, 2009, Specific Comment 14: [13] Downstream End to Upstream End of Pinch Point**

Although this reach does not appear to be as stable as Reach 12, the Restoration Plan notes that old debris slides at Stations 135+00 and 138+00 are no longer significant sources of sediment, because they are stabilizing. This reach appears to no longer be a significant source of sediment to the creek channel (See General Comment 2).

**Water Board Comment on the Response to Specific Comment 14 in the Revised Plan**

No direct response was required for this comment. The Revised Plan clarifies remaining sediment sources in this reach.

**Original November 12, 2009, Specific Comment 15: [14] Upstream End of Pinch Point to Kaiser House**

The Restoration Plan notes that the old debris slide at Station 139+00 is stabilizing (See General Comment 2), but that the old debris slide at Station 141+20 still appears to be a significant source of sediment to the creek. The summary of restoration opportunities in Table 4.2 does not address this debris slide (Note: Table 4.2 does not recommend any active restoration upstream of Station 116+23. The Restoration Plan should describe why restoration recommendations are not made for any stations upstream of Station 116+23).

**Water Board Comment on the Response to Specific Comment 15 in the Revised Plan**

The Revised Plan proposes to address the source of sediment at Station 141+20 (Qs3) in the proposed sediment source study. The Revised Plan's preference for not proposing direct restoration activities in these reaches is explained in greater detail in revised Section 2. Specific Comment 15 is appropriately addressed in the Revised Plan.

**Original November 12, 2009, Specific Comment 16: [15] Kaiser House to Debris Slide Area**

The Restoration Plan notes that this reach is stabilizing (See General Comment 2). A gully that starts at the Upper Quarry Road was not noted in the 2000 assessment, but was observed in 2009. However this gully drains to a sedimentation basin and does not appear to be a significant source of sediment to the creek. The Restoration Plan should clarify whether or not this gully is a potential source of sediment to the creek, if the sediment basin becomes completely filled with sediment. Section 4 should be revised to include an estimated remaining useful life for the sediment basin and recommendations for stabilizing this gully.

**Water Board Comment on the Response to Specific Comment 16 in the Revised Plan**

The Revised Plan clarifies that the sediment basin rarely receives flow, and, in the event that the basin was to become filled, runoff would not flow directly to the creek channel. Specific Comment 16 is appropriately addressed in the Revised Plan.

**Original November 12, 2009, Specific Comment 17: [16] Debris Slide Area**

The Restoration Plan states that most of the debris material within the valley bottom has been redistributed and is stabilized in place, with the exception of a debris slide between stations 185+15 and 188+70. Section 4 should discuss whether or not any stabilization measures are warranted at these debris slides.

**Water Board Comment on the Response to Specific Comment 17 in the Revised Plan**

No direct response was required for this comment. The Revised Plan clarifies the current condition of this reach.

**Original November 12, 2009, Specific Comment 18: Section 4.3.2, Site Specific Recommendations.**

The Restoration Plan states that reaches within the tight confines of the canyon (Stations 92+00 to 120+00) are not recommended for active restoration, because these reaches are currently stabilizing, and that access by heavy equipment would create channel instability that would be more significant than the stability provided by active restoration. This discussion should be clarified by describing the restoration measures that might be effective in these reaches, and then explaining the ways in which implementing these measures would destabilize the creek banks.

**Water Board Comment on the Response to Specific Comment 18 in the Revised Plan**

This comment was not directly addressed in revisions to Section 4, but was addressed in Section 2 of the Revised Plan. Specific Comment 18 is appropriately addressed in the Revised Plan.

**Original November 12, 2009, Specific Comment 19: Section 4.4, Prioritization Protocol Criteria**

The Restoration Plan states that Category (I) recommendations should be implemented in the near term because they represent active erosion or other sediment sources to the Creek, have the potential to threaten site infrastructure (e.g., roads), and may be implemented without interfering with facility operations. Some of the Category I recommendations may be incorporated as

conditions of certification for sediment removal from the ponds. Removal of unnecessary creek crossings may also provide some mitigation for sediment removal projects at the ponds.

**Water Board Comment on the Response to Specific Comment 19 in the Revised Plan**

The Revised Plan proposes that sources of sediment from Category (I) sites be addressed in the proposed sediment source study. Water Board staff concur that this proposed study is an appropriate venue for evaluating current opportunities to reduce the input of sediment to Permanente Creek at the Facility. Specific Comment 19 is appropriately addressed in the Revised Plan.

**Original November 12, 2009, Specific Comment 20: Table 4-2, Summary of Permanente Creek Recommendation Actions.**

The first column of this table further complicates the organizational structure of descriptions of Permanente Creek on quarry property. In Table 4-2, the first column identifies each proposed restoration location with a letter between [A] and [R]. In Section 2.3, stream reaches are numbered from [1] to [17], while some significant features are only identified as [-]. Section 2.3 contains no references to the Location Description letters in Table 4-2. The organizational scheme is further complicated by Appendix A (Figure 1-3), which subdivides the creek into 14 sections. The Restoration Plan needs a master index to facilitate cross-walking between Section 2.3, Table 4-2, and Appendix A. In addition, Section 2.3 and Table 4-2 need additional text to help correlate the reaches in Section 2.3, the locations in Table 4-2, and the figures in Appendix A.

**Water Board Comment on the Response to Specific Comment 20 in the Revised Plan**

The first column of Table 4-2 now uses the improved nomenclature system that was developed for the Revised Plan. Specific Comment 20 is appropriately addressed in the Revised Plan.

**Original November 12, 2009, Specific Comment 21: Table 4-2, Location [A].**

At location [A], leaving Pond 14 in place, at least until the plant closes, is probably appropriate. But the headcut and severe bank erosion at the outfall should be addressed as soon as possible.

**Water Board Comment on the Response to Specific Comment 21 in the Revised Plan**

Table 4-2 now includes proposed measures for stabilizing the headcut. Stabilization of the headcut is a Priority I project in the Revised Plan. Specific Comment 21 is appropriately addressed in the Revised Plan.

**Original November 12, 2009, Specific Comment 22: Table 4-2, Location [D].**

At location [D], Pond 22 is said to be located on UP Property. Pond 22 is the most recently constructed in-stream pond at the quarry. It is not clear how the quarry obtained permission to construct a pond on UP property in 1998. Please confirm whether or not Pond 22 is actually located on UP Property. In addition, please provide any correspondence documenting UP's approval to construct the pond on their property. This information may be useful in determining appropriate contacts at UP for discussion of post-closure management of UP's property at the quarry site.

**Water Board Comment on the Response to Specific Comment 22 in the Revised Plan**

The response to comments provided with the Revised Plan addresses the land ownership issues adequately. Specific Comment 22 is appropriately addressed in the Revised Plan.

**Original November 12, 2009, Specific Comment 23: Table 4-2, Location [E].**

For location [E], we concur that Lehigh should work with UP to develop and implement restoration measures. Since the need for the railroad spur is linked to the operation of the quarry, it may be effective to plan the future management of the land in conjunction with UP. UP may be able to use land at the site to provide mitigation for other UP projects in the South Bay.

At location [D], Pond 22, Table 4-2 states that channel and floodplain restoration is constrained by UP ownership of the land. However, at location [E], Culvert under rail spur, Table 4-2 recommends working with UP to modify the culvert. The Restoration Plan should not rule out cooperation with UP in performing channel restoration. UP may be able to obtain mitigation credit for allowing some land to be use for channel restoration projects.

**Water Board Comment on the Response to Specific Comment 23 in the Revised Plan**

The Revised Plan proposes working with UP to restore a floodplain and bankfull bench. Specific Comment 23 is appropriately addressed in the Revised Plan.

**Original November 12, 2009, Specific Comment 24: Table 4-2, Location [F].**

At Location [F], it is not clear why the concrete channel should not be removed. In general, more text is needed to clarify the basis of the recommendations in Table 4.2

**Water Board Comment on the Response to Specific Comment 24 in the Revised Plan**

The Revised Plan proposes working with UP to remove the trapezoidal channel and to restore a meandering channel with a floodplain. Specific Comment 24 is appropriately addressed in the Revised Plan.

**Original November 12, 2009, Specific Comment 25: Table 4-2, Locations [G], [H], and [I].**

For Locations [G], [H], and [I], any non-essential culverts should be identified at these locations. Removal of non-essential culverts may provide mitigation for sediment removal projects at the quarry ponds.

We concur with the recommendation to remove the culvert at location [H] (96" culvert without road crossing; Station 48+50 to 48+75) in the near future. This may be an appropriate mitigation measure for some of the sediment removal work

**Water Board Comment on the Response to Specific Comment 25 in the Revised Plan**

It is difficult to determine if the Revised Plan addresses the culvert in Reach G, since Reach G is not referenced to the new nomenclature system in Appendix C to the Revised Plan.

**Original November 12, 2009, Specific Comment 26: Table 4-2, Location [L].**

At Location [L], please explain why the removal of concrete and riprap on the East Bank of the creek cannot be placed in Category I. This is another project that may provide mitigation for future quarry projects with impacts on the creek.

**Water Board Comment on the Response to Specific Comment 26 in the Revised Plan**

This comment does not appear to have been addressed. However, Reach L is not referenced to the new nomenclature system in Appendix C, so it is difficult to verify what recommendations are made for Reach L in the Revised Plan.

**Original November 12, 2009, Specific Comment 27: Appendix A (Figure 1-3).**

The 14 annotated aerial photographs in Figures 1-3.1 through 1-3.14 indicate several significant features (e.g., culverts, ponds). It is not clear if these figures include all in-channel features, or just the in-channel features proposed for removal or modification in the Restoration Plan. Please make sure that all in-channel features are included so that it is easier for Water Board staff to determine if further restoration activities should be assessed for inclusion in the Restoration Plan.

**Water Board Comment on the Response to Specific Comment 27 in the Revised Plan**

The response to comments explains that all in-channel features are included in the annotated aerial photographs. Specific Comment 27 is appropriately addressed in the Revised Plan.

Please contact Brian Wines of my staff at (510) 622-5680 or [bwines@waterboards.ca.gov](mailto:bwines@waterboards.ca.gov) if you have any questions. All future correspondence regarding this Project, should reference the Site Number indicated at the top of this letter.

Sincerely,



Shin-Roei Lee  
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Watershed Division

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