
Central Valley Regional Water Quality Control Board

4 May 2017

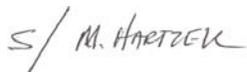
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RESPONSE TO COMMENTS, TENTATIVE WASTE DISCHARGE REQUIREMENTS, LEHIGH SOUTHWEST CEMENT COMPANY, CALAVERAS CEMENT PLANT, CALAVERAS COUNTY

On 1 May 2017, Central Valley Water Board staff received Lehigh Southwest Cement Company (Lehigh) comments on the tentative Waste Discharge Requirements (WDR) for the Calaveras Cement Plant, Calaveras County. The tentative WDRs are being considered for adoption by our Board at the 8/9 June 2017 public hearing.

Your comments are appreciated, and we have updated the tentative WDRs following review of your comments. We have also prepared the attached response to comments document for your review. Your comments and our response to comments will be uploaded to our web page in the following week. The tentative WDRs has been added to the agenda for the 8/9 June 2017 Board Meeting on the uncontested calendar.

Please contact me at (916) 464-4630 or Marty.Hartzell@waterboards.ca.gov with questions.



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RESPONSE TO LEHIGH SOUTHWEST CEMENT COMPANY COMMENTS ON DRAFT WASTE DISCHARGE REQUIREMENTS AND ATTACHMENTS FOR THE CALAVERAS CEMENT COMPANY, CALAVERAS COUNTY

Lehigh Southwest Cement Company (Lehigh) submitted their comments on the tentative waste discharge requirement documentation in their 1 May 2017 Letter.

A. Lehigh Ownership Comments

Comment A.1.

The property subject to this WDR is owned by Calaveras Cement Company (indicated on land deeds) and its successor, Lehigh Southwest Cement Company. Please change all ownership references in all associated documents to reflect this.

Response: Comment accepted. All documents have been updated.

B. Lehigh Unit Closure Comments

Comment B.1.

Prohibition of Introducing Collected Leachate into the Quarry Pit Lake (Discharge Prohibition A.5.)— Since the closure of CKD 1, leachate collected in the associated Leachate Collection and Removal System (LCRS) has been pumped to the large Quarry Pit Lake. The water quality of the lake has also been monitored during this period and has shown no measureable changes as a result of the introduced leachate. The Draft WDR would prohibit this pumping from CKD, 1 and ultimately from CKD 3 as well, after CKD 3's closure with a supplementary LCRS constructed. This prohibition was first communicated to Lehigh in the Draft WDR thirty (30) days ago and represents a leachate management change that will be considerably difficult to address. RWQCB Staff (Staff) have indicated that possible options include a) storage, b) treatment, c) offsite disposal, and d) continuance of pumping into the Quarry lake that would also require a groundwater monitoring network to assess any possible impacts. Lehigh may also develop other potential options, but, evaluating the feasibility of this change in leachate management, designing appropriate equipment, procurement, construction, installation, and any associated permitting that may be required, cannot reasonably be completed in 40 days, i.e., prior to the approval of the WDR tentatively scheduled for hearing in June 2017. Thus, Lehigh requests that the feasibility of the required change in leachate management for both CKD 1 and CKD 3 be developed during the design engineering effort for CKD 3 closure (see below), and become part of that project schedule, which includes report submittal, RWQCB approval, and ultimate construction by December 31, 2018. However, a change in the current practice to address the proposed required change in leachate management recently communicated, cannot be accurately determined at this time and could extend the final compliance date. This cannot be fully determined until study has been applied to the issue.

Response: As agreed in a conference call with the Discharger on 3 May 2017, the prohibition to discharge leachate to the quarry pit will remain in the Order. The Discharger proposed to perform investigations to isolate CKD-1 LCRS from the creek, reconfigure the system if necessary, and develop an alternate leachate management proposal within 180 days following adoption of the WDRs. Staff concur with this approach.

Comment B.2.

Determination of Appropriate Seismic Event for CKD 3 Closure Design - The Draft WDR indicated that the CKD 3 closure design consider seismic loading conditions but was not specific to the required design event. This design criterion has the potential to significantly impact the final cover grading, and therefore, it needs to be clarified prior to initiating the closure design.

Response: Comment #2 refers to determination of appropriate site specific seismic analysis discussed in Finding 31. Determination of the appropriate seismic event for CKD 3 can be addressed in the forthcoming closure design. Therefore, Finding 31 shall be removed and staff will address this issue with Lehigh separately.

Comment B.3.

Submittal of Design Plans for CKD 3 Closure and Leachate Management – As discussed above, the design of the CKD 3 closure approach will rely on key factors that have just recently been communicated to Lehigh or are still being determined. Also, it is possible that further factors may change or be introduced prior to adoption of the WDR by the Central Valley Board, tentatively scheduled for June 2017. Thus, Lehigh cannot fully define and implement all of the design factors until WDR approval and completion of discussion with Staff. Also discussed above, the recently communicated required leachate management change must be evaluated and designed as part of the overall closure. Thus, Lehigh requests that the submittal date for the design plans for CKD 3 closure and leachate management be submitted 180 days after the date of approval by the Regional Board. Lehigh also proposes to provide Staff with two interim design update reports at 60 and 120 days after approval.

Response: Comment accepted. The deadline for submittal of design plans has been changed as requested.

C. Lehigh Project Background Comments

Comment C.1.

Page 3 paragraph 7.c. – Water pumped from the CKD 1 LCRS had been measured as essentially zero through November 2016 after changes and improvements had been made to the CKD 1 LCRS during Summer 2016. Between mid-December 2016 and mid-March 2017, approximately 300,000 gallons of water per month had been pumped.

Response: Comment accepted and Finding 7.c. amended as shown below:

The former Quarry Pit shown on Attachments A and B is filled with groundwater and has been used for transfer of leachate from CKD-1. ~~Currently, the Discharger reports that leachate is not being generated.~~ Water pumped from the CKD 1 LCRS had been measured as essentially zero through November 2016 after changes and improvements had been made to the CKD 1 LCRS during summer 2016. Between mid-December 2016 and mid-March 2017, approximately 300,000 gallons of water per month had been pumped.

Comment C.2.

Page 5 paragraph 11 – CKD 3 contains an estimated 430,000 cubic yards of CKD (not 850,000 to 1,000,000 cubic yards)

Response: Comment accepted. The table in Finding 11 has been modified to show the correct number.

Comment C.3.

Page 6 paragraph 15 – The CKD in both CKD 1 and 3 units has been in place for many decades and has been hydrated during that period. Hydration drives the chemical reaction to “harden” cement into concrete and thus the CKD now resembles concrete more than cement. This makes the material less chemically reactive.

Response: Comment accepted. Finding 15 has been amended as shown below:

CKD consists of a mixture of unreacted raw feed, clinker dust, and ash. Chemically, it consists mainly of calcium carbonate, calcium oxide, silicon dioxide, and other metal-oxides. It's chemically dehydrated nature, resulting from exposure to high kiln temperatures, can cause CKD to have a high tendency to absorb water. The CKD in both CKD- 1 and CKD-3 units has been in place for many decades and has been hydrated during that period. Hydration drives the chemical reaction to “harden” cement into concrete and thus the CKD now resembles concrete more than cement. This also makes the material less chemically reactive.

Comment C.4.

Page 6 paragraph 18 – CKD 3 has been closed for a period exceeding 10 years with grading and a soil cover to prevent direct exposure and erosion of the CKD. Stormwater BMPs have been maintained as well to minimize surface water impacts.

Response: After the clarification by the Discharger in the 3 May 2017 conference call, the comment was accepted. Finding 18 has been split into Findings 18 and 19 as shown below:

Finding 18. Significant amounts of CKD were also discharged at CKD-3. A 3-D model presented in the 30 June 2016 *Engineering Feasibility Study for Corrective Action* (EFS) estimates that there are approximately 430,000 cubic yards of CKD in CKD-3. CKD in CKD-3 is a fairly contiguous unit of white to light gray, non-plastic fine grained sediment with relatively high pH (10-12 standard pH units). In some locations, the unit contains some fine to coarse sub angular gravel in a fine grained matrix.

Finding 19. Over 10 years ago, CKD 3 was graded and covered with soil to prevent direct exposure and erosion of the CKD. Stormwater BMPs have been maintained to minimize surface water impacts. As shown on Attachment B, CKD is limited to an area of approximately 8 acres in the central and southern portions of CKD-3 top-deck and the lower area upslope from the containment berm; the rest of what was previously considered CKD-3 has been designated in ROWD as the East Rock Storage Area.

Comment C.5.

Page 8 paragraph 23 [now Finding 25] –The Quarry Pit Lake is located in a limestone quarry and contains water that has been in continuous contact with exposed limestone on the pit walls and floor. Limestone influenced waters typically exhibit a circum-neutral to alkaline pH and slightly elevated Total Dissolved Solids (“TDS”) and electrical conductivity“(EC”) levels due to the calcium carbonate nature of the rock. This water quality is unlikely to have adverse environmental impacts because the water quality of the Quarry Pit Lake are demonstrative of the natural contact of water with native, in-place limestone.

Response: Comment accepted. Finding 25 has been changed as shown below:

The Quarry Pit is located in a limestone quarry and contains water that has been in continuous contact with exposed limestone on the pit walls and floor. Limestone influenced waters typically exhibit a near neutral to alkaline pH and slightly elevated TDS and EC levels

due to the calcium carbonate nature of the rock. This water quality is unlikely to have adverse environmental impacts because the water quality of the Quarry Pit is demonstrative of the natural contact of water with native, in- place limestone.

Quarry Pit water quality data show EC and TDS values resemble groundwater WQPS. The average post-CKD-1 closure values of EC and TDS for the Quarry Pit are shown in the table below. Surface water WQPS, and groundwater WQPS for CKD-1 and CKD-3 are provided for comparison.

Comment C.6.

Page 10 paragraph 38 [now Finding 39] – The groundwater downgradient of CKD 3 exists in two chemically different aquifers. A shallow aquifer, approximately 20 feet deep and apparently ending just downgradient from MW-8, shows influence from CKD 3. A deeper aquifer below approximately 20 feet and apparently extending down the CKD 3 valley shows no sign of impact from CKD 3 as evidenced from a discrete groundwater sample result.

Response: Comment accepted. Finding 39 has been amended as shown below.

The canyon where CKD-3 is located forms a small groundwater sub-basin with a drainage area of approximately 130 acres. The valley does not appear to be hydraulically connected to areas east, west, and north of CKD-3. Depths to groundwater range between 4.4 feet below ground surface along the southern toe of CKD-3 to 91.6 feet below ground surface on top of CKD-3. Groundwater is monitored in a number of wells and piezometers which are screened in alluvium, CKD, or underlying bedrock, depending on their location in relation to the unit. As shown on attachment D, groundwater elevation measurements from the piezometers and wells in the vicinity of CKD-3 indicate the groundwater gradient in the vicinity is generally to the south. The estimated average groundwater gradient is 0.11 feet per foot following topography.

The Discharger states that groundwater downgradient of CKD-3 exists in two chemically different aquifers. A shallow aquifer, approximately 20 feet deep and apparently ending just downgradient from MW-8, shows influence from CKD-3. Sample results from a discrete hydro-punch sample identified a deeper water bearing zone below 20 feet, which apparently extends down the CKD-3 valley shows no sign of impact from CKD-3.

Attachment E shows that groundwater is present in CKD-3. There is evidence of a seepage area at the southern toe of CKD-3. The small amount of seepage flows into the unnamed drainage channel in the canyon in which CKD-3 is situated.

D. Lehigh Closure / Post Closure requirements

Comment D.1.

Page 13 paragraph 49 [now Finding 50] – As discussed above, development of CKD closure design plans are significantly affected by factors communicated to Lehigh after March 31, 2017, some not yet resolved, and potentially others introduced prior to Board approval of the WDR. Lehigh requests this information be added to paragraph 49, or, the statement that design plans were due March 31, 2017 be removed.

Response: Comment accepted. The 31 March 2017 deadline has been removed, and the finding now requires design plans within 180 days of adoption of the WDRs.

Comment D.2.

Page 13 paragraph 50 [now Finding 51] – It has not yet been determined that a vegetative soil layer will be incorporated into the closure. Title 27 allows the alternative of not including a vegetative soil cover.

Response: Finding 51 allows but does not require a vegetative letter. One sentence in finding 51 was modified to read as follows:

Currently, it is projected that the low-permeability cover will ~~incorporate~~ consist of an impermeable geomembrane such as high density polyethylene (HDPE) or linear low density polyethylene (LLDPE) and a soil and/or rock cover layer.

Comment D.3.

Page 13 paragraph 54 [now 55] – Lehigh believes that “CKD 2” should be replaced with “CKD 3”

Response: Comment accepted and Finding 54 corrected.

Comment D.4.

Page 16 paragraph A.4. – Lehigh understand from Staff that introduction of leachate into the Quarry Pit Lake may be allowed if an appropriate groundwater monitoring network is installed. Lehigh requests that this paragraph reflect that possibility.

Response: This comment was not accepted. Following a 3 May 2017 conference call with Lehigh and their consultant, Golder, Lehigh agreed to discontinue transfer and develop an alternate leachate disposal method within 180 days from adoption of this order.

Comment D.5.

Page 17 paragraphs C.4. and C.6. – As discussed above, Lehigh has requested to develop an appropriate leachate management approach for both CKD 1 and CKD 3 to be submitted 180 days after Board approval of this WDR. The potential management approach is not limited to the options in these paragraphs (C.4 and C.6 of the Draft WDR). Lehigh requests that these paragraphs be removed.

Response: Findings C.4. and C.6. have been amended to allow for development of new leachate management strategies. Finding C.4 has been changed as follows:

The Discharger will develop an appropriate CKD-1 leachate management strategy to be submitted for Board approval within 180 days after adoption of this Order. In the interim period for 180 days after these WDRs are adopted, the Discharger will be required to monitor the level of leachate in the CKD-1 LCRS, but will not be required to pump or transfer the accumulated leachate into containers for disposal.

Finding C.6 has been modified as shown below:

The Discharger will develop an appropriate CKD-3 leachate management strategy as a part of CKD-3 closure design plans to be submitted for Board approval within 180 days after adoption of this order.

Comment D.6.

Page 17 paragraph D.6. – Excessively oversizing pumps to collect more than twice the maximum rate expected results in poor pump performance and premature failure (rapid on-off cycles). Accordingly, the RWQCB generally specifies for landfills that the pump be sized such that the leachate collected does not exceed 85% of the pump capacity. We request that the language be revised to say “the LCRS extraction

system will be designed so that it can remove twice the anticipated leachate volume” instead of the “pump.” We can achieve this system capacity by adding a second extraction point in which a second pump could be added if needed.

Response: Comment accepted. “Pump” was changed to “extraction system”.

Comment D.7.

Page 18 paragraph F – Lehigh requests that an alternate Financial Assurance Mechanism be allowed such as a surety performance bond issued by a top rated U.S. surety bond company. Lehigh routinely secures many such bonds for mining reclamation financial assurances in California and North America. These bond mechanisms are accepted by the State of California for SMARA Financial Assurance obligations.

Response: Comment accepted. Letter of Credit was changed to allow the use of any acceptable financial mechanism per Title 27, Section 22228.

Comment D.8.

Page 21 paragraph 10.A. – As discussed above, Lehigh requests that the due date in this paragraph be revised to “180 days after approval of this WDR by the Regional Board”

Response: Comment accepted. The deadline has been amended. The CKD-1 Leachate Management Plan requirement has been added as H.10.D.

E. Lehigh Monitoring and Reporting Program Comments

Comment E.1.

Page 2 paragraph 1 – Lehigh requests that purge water from groundwater well sampling be discharged to the ground adjacent to the well being sampled.

Response: Not applicable to the paragraph mentioned above, but can be addressed in the updated Sampling and Analysis Plan.

Comment E.2.

Page 6 paragraph 3 – Annual LCRS Testing – Lehigh believes that introduction of fresh water into the LCRS as a test for the system functionality for both CKD 1 and CKD 3 does not address the fundamental concern that the system equipment is working. Lehigh proposes to submit an alternative inspection/testing approach with the CKD 3 design plans and leachate management approach as discussed above. This alternative approach will have the goals of regularly assessing the proper function of an LCRS, identifying any deficiencies, correcting any deficiencies, and reporting this information.

Response: Comment accepted. The paragraph was amended as shown below:

Annual LCRS Testing: All LCRSs shall be tested annually pursuant to Title 27, section 20340(d) to demonstrate proper operation. The Discharger proposes an alternate LCRS inspection and testing approach and will submit it with the CKD-3 design plans. This approach will have the goals of regularly assessing the proper function of an LCRS, identifying any deficiencies, correcting any deficiencies, and reporting this information. The results of these tests shall be reported to the Central Valley Water Board in the Annual Monitoring Report and shall include comparisons with earlier tests made under comparable conditions.

Comment E.3.

Page 7 paragraph 4.B. – Lehigh has previously submitted an analysis that the Quarry Pit Lake available storage volume easily accommodates additional runoff into it from the relatively small surrounding drainage area, and thus, the likelihood of this lake overflowing from a rain event is exceedingly small. Lehigh request that this requirement be removed.

Response: Freeboard monitoring requirement has been removed from 4.b.

Comment E.4.

Page 9 paragraph 1.h. – Lehigh requests that rainfall data may be acquired from a nearby, publicly available, National Weather Service weather station or similar. One is located approximately 2 miles north of the facility.

Response: Paragraph 1.h has been amended as shown below:

A summary of all Facility Monitoring including rainfall data for the reporting period required in Section A.5. of this MRP. Rainfall data can be obtained from an onsite rain gauge or from a publicly available National Weather Service station or equivalent.

Comment E.5.

Page 9 paragraph 1.i. – Lehigh requests that this paragraph be corrected from the current “Error! Reference source not found” statement.

Response: This error message occurred when a reference was removed. Paragraph 1.i has been removed.

Comment E.6.

Page 11 paragraph C.1. – Lehigh requests this section be clarified to state the frequency of and submittal date for the Water Quality Protection Standard Report.

Response: As required by Annual Monitoring Report item 2.g., the annual water quality protection is to be submitted with the annual monitoring report and include updated concentration limits for each monitoring parameter at each monitoring well based on the new background data set.

Comment E.7.

Page 13 paragraph 5 – Lehigh requests that a new point of compliance for CKD 3 be proposed in the design report. The point of compliance should be hydraulically downgradient of the waste management unit and MW-8 is located within CKD. After the limits of the WMU are established in the design report, Lehigh can propose a location for a new well to represent the point of compliance for CKD 3. MW-8 will then be removed.

Response: Comment accepted. The following paragraph has been added to discuss this concern.

MW-8 is completed within CKD material. A new hydraulically downgradient point of compliance for CKD-3 will be proposed in the CKD-3 design report after the limits of CKD-3 are established.