To: Doug Carey[douglas.carey@waterboards.ca.gov]
Cc: gr@burlesonconsulting.com[gr@burlesonconsulting.com]; lauri.kemper@waterboards.com[lauri.kemper@waterboards.com]; Dana Barton[Barton.Dana@epa.gov]; lily tavassoli (tavassoli.lily@epa.gov)[tavassoli.lily@epa.gov]; Hillenbrand, John[Hillenbrand.John@epa.gov]; Wirtschafter, Joshua[Wirtschafter.Joshua@epa.gov]; Gary Riley[Riley.Gary@epa.gov]; Tom Bloomfield (tbloomfield@thegallaghergroup.com) (tbloomfield@thegallaghergroup.com)[tbloomfield@thegallaghergroup.com]; 'Brown, Anthony R (RM)'[anthony.brown@bp.com]; Ken Maas[kmaas@fs.fed.us]; Ferguson, Scott@Waterboards[scott.ferguson@waterboards.ca.gov]; Zentner, Taylor@Waterboards[taylor.zentner@waterboards.ca.gov]; Shaffer, Caleb[Shaffer.Caleb@epa.gov]; Lyons, John[Lyons.John@epa.gov]; Stetler, Chris@Waterboards[Chris.Stetler@waterboards.ca.gov]; Black, Ned[Black.Ned@epa.gov]; Cory Koger[Cory.S.Koger@usace.army.mil]; Darrel Cruz 2[Darrel.Cruz@washoetribe.us]; David Friedman[dfriedman@ndep.nv.gov]; Fred K[fredk@aeseinc.com]; Lombardi, Marc (marc.lombardi@amecfw.com)[marc.lombardi@amecfw.com]; Michelle Hochrein[michelle.hochrein@washoetribe.us]; Patty Cubanski[pc@burlesonconsulting.com]; Sanchez, Yolanda[Sanchez.Yolanda@epa.gov]; Serda, Sophia[Serda.Sophia@epa.gov]; Steve Hampton[Steve.Hampton@wildlife.ca.gov]; Thomas Maurer[thomas_maurer@fws.gov]; Toby McBride[toby_mcbride@fws.gov]
From: Deschambault, Lynda
Sent: Fri 3/3/2017 12:47:41 AM
Subject: Begin Leviathan 2017 Spring Treatment Operations
170302 Pond 1 Stage.pdf

Hello Doug,

Thank you for keeping us up to date on the need to proceed with the emergency treatment of the mine discharge collected in the upper ponds at Leviathan Mine.

The large precipitation total so far this year has raised the water levels measured at pond 1 and increased the inflow rates.

EPA agrees that the conditions warrant emergency action to prevent overflow discharge of untreated acid mine drainage into Leviathan Creek.

EPA understands that the general approach will follow that of the 2005, 2006, and 2011 emergency lime treatment, monitoring and discharge of treated water.

Water in pond 3 will be treated with lime and recirculated back into Pond 3 until chemical measurements are consistently in the range of 6 to 9 pH units.

Measurements of field parameters will be augmented by sampling for more complete chemical analysis at least once each day that the water is discharged, or more frequently as changing conditions may require.

Treatment should proceed. As discussed, at a minimum, please provide a weekly update on Tuesday mornings. Please keep EPA informed as plans are developed.

Best Regards,

Lynda Deschambault

Environmental Scientist

USEPA Region 09

(415) 947-4183

Please be advised I may have limited access to email , therefore please be patient with any communication delays.

From: Carey, Douglas@Waterboards [mailto:douglas.carey@waterboards.ca.gov]
Sent: Thursday, March 02, 2017 8:25 AM
To: Deschambault, Lynda <Deschambault.Lynda@epa.gov>; Riley, Gary <riley.gary@epa.gov>
Cc: gr@burlesonconsulting.com; Tom Bloomfield (tbloomfield@thegallaghergroup.com) (tbloomfield@thegallaghergroup.com) <tbloomfield@thegallaghergroup.com>; Brown, Anthony R (RM) (anthony.brown@bp.com) <anthony.brown@bp.com>; Maas, Ken -FS (kmaas@fs.fed.us) <kmaas@fs.fed.us>; Ferguson, Scott@Waterboards <scott.ferguson@waterboards.ca.gov>; Kemper, Lauri@Waterboards <lauri.kemper@waterboards.ca.gov>; Zentner, Taylor@Waterboards <taylor.zentner@waterboards.ca.gov>
Subject: Status of Leviathan 2017 Spring Treatment Operations

Lynda and Gary,

The Lahontan Regional Water Board (Water Board), through the California Department of General Services, has engaged TKT Consulting LLC to conduct spring treatment of pond water at the Leviathan Mine site. Due to above average precipitation and the predicted groundwater recharge and associated increased acid mine drainage from the pit under-drain and Adit No.5, the upper storage ponds (Nos. 1, 2 North and 2 South) are nearing their capacity (see attachment). To prevent the discharge of untreated pond water from the ponds to Leviathan Creek, the Water Board will be treating stored water contained in the ponds with a portable lime treatment system until the threat of untreated discharge has passed.

The Water Board's contractor plans to follow the same general approach as used during the 2005, 2006, and 2011 spring treatment effort. To access the site, the Water Board's contractor cleared snow from the Leviathan Mine Road (Forest Service roads 10052 and 10348) February 25 and 26, using a loader with tire chains, to produce a near snow-free, single-lane roadway. Occasional vehicle passing turnouts were also cleared. As appropriate, at road dips and at other locations along the roadway, a means for surface water flow to exit the roadway was also provided to reduce the potential rutting of the road surface. The portable treatment system, enough lime to begin treatment, and associated equipment and materials have been transported to the site. The portable treatment system began circulating water in Pond 3 on Wednesday, March 1, 2017. Pond 3 has not received acid mine drainage from the upper ponds since 2011. Pond 3 does contain water from direct precipitation on the pond, and the pond materials have acid generating potential. The quality of water in Pond 3 will be assessed, using multiple field pH measurements, and if the water quality meets the discharge criteria prescribed in the EPA's Administrative Abatement Action to the Water Board, that water will be discharged to Leviathan Creek via the Pond 3 outlet. If the water quality in the pond does not meet the discharge criteria, the water will be treated by lime addition until it meets the discharge criteria; then, the water will be discharged via the Pond 3 outlet. Lime addition to the water contained in Pond 3 is scheduled to begin today, as needed.

Discharging water from Pond 3 will provide pond volume that will be used for treatment of water contained in the upper ponds. Following the discharge of water contained in Pond 3, a volume of water from the upper ponds (Ponds 1, 2N and 2S) will be directed to Pond 3, where the next batch treatment will occur. Treatment efficacy will be evaluated regularly through measurement of indicator parameters, such as pH (which the Water Board has found to be an excellent analog for water quality from the site). Following its successful treatment (pH measurements consistently in the 6 to 9 range with a range of 7.5 to 8.5 being optimum), that water will be discharged, and the process will be repeated. Again, the Water Board expects spring treatment to continue until the threat of an untreated discharge has passed. Water

discharged will be sampled daily during discharge events. Field measurements for pH and laboratory analysis of discharge will be used for comparison to discharge criteria.

The onsite infrastructure, in the vicinity of where personnel have travelled over the past week, appeared to be functioning properly. Water Board staff will keep the EPA and USFS informed as plans and dates are further developed. If you have any questions, please contact Taylor Zentner, Engineering Geologist, at taylor.zentner@waterboards.ca.gov or (530)-542-5469, or me.

Douglas Carey, P.G.

Senior Engineering Geologist

Leviathan Mine

Regional Water Quality Control Board, Lahontan Region

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