

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LAHONTAN REGION**

**MEETING OF NOVEMBER 13, 2024  
BISHOP**

<b>ITEM #7</b>
<b>2024 LEVIATHAN MINE UPDATE</b>

<b>CHRONOLOGY</b>	
1982–1985	The State of California acquires the Leviathan Mine Site (Site) and the Lahontan Regional Water Quality Control Board (Lahontan Water Board) completes the Pollution Abatement Project (PAP). The PAP included improvements to reduce the generation of Acid Mine Drainage (AMD) and erosion of mine waste into Leviathan Creek.
1985–1999	Lahontan Water Board operates, maintains, and monitors the PAP as designed, and conducts various investigations regarding revegetation, AMD treatment technologies including lime neutralization and sulfate reducing bacteria (bioreactors). The Lahontan Water Board initiates surface water quality and flow monitoring programs, begins benthic invertebrate bioassessments for long-term monitoring of ecological recovery in Leviathan Creek, and conducts general site maintenance activities. During greater-than-normal water years, AMD inflow and direct precipitation exceeding pond storage capacity is discharged to Leviathan Creek.
Summer 1999	Lahontan Water Board constructs and successfully conducts full-scale pilot testing of the Summer Pond Water Treatment System to treat AMD contained in upper pond system (Pond 1, Pond 2S, and Pond 2N).

<b>CHRONOLOGY</b>	
2000–Present	<p>United States Environmental Protection Agency (USEPA) places the Site on the National Priorities List making Leviathan Mine a federal Superfund Site and issues an Administrative Abatement Action Order under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The Administrative Abatement Order requires the Lahontan Water Board to provide year-round capture and seasonal (summer) treatment of AMD from two AMD sources (the Pit Underdrain and Adit) and conduct site maintenance and monitoring activities. Lahontan Water Board continues to comply with this order and subsequent changes through the present and provides early-season treatment when necessary.</p>
Spring 2005	<p>Lahontan Water Board implements Early-Season Pond Water Treatment to prevent the discharge of untreated AMD from upper ponds following a greater-than-normal water year for the first time. Early-Season Pond Water Treatment becomes necessary again in 2006, 2011, 2017, 2018, 2019, 2023 and 2024.</p>
2008–2009	<p>USEPA issues Atlantic Richfield (ARC) the following orders:</p> <ul style="list-style-type: none"> <li>• Administrative Order to conduct the sitewide Remedial Investigation and Feasibility Study.</li> <li>• Administrative Settlement Agreement Order on Consent to seasonally treat AMD released from the Channel Underdrain and Delta Seep using a High-Density Sludge (HDS) Treatment Plant and to continuously treat AMD released from the Aspen Seep using a bioreactor.</li> </ul>
2015	<p>ARC and State Parties agree to the terms set forth in the Leviathan Mine Work and Cost Allocation Settlement Agreement.</p>

<b>CHRONOLOGY</b>	
2021–2023	<ul style="list-style-type: none"> <li>• ARC submits to USEPA the draft Focused Feasibility Study (FFS) for an Early Final Remedial Action (EFRA) focused on year-round capture and treatment of AMD releases at five locations and a draft Technical Impracticability Evaluation (TIE).</li> <li>• Lahontan Water Board submits comments to USEPA pertaining to ARC’s FFS and TIE.</li> <li>• USEPA provides ARC comments on the FFS for the first Final Remedial Decision (previously referred to as EFRA) for year-round capture and treatment of AMD releases at five locations. USEPA determined a Technical Impracticability Waiver for surface water Applicable or Relevant and Appropriate Requirements (ARARs) was not supported, and a groundwater Technical Impracticability Waiver was not an essential component of the first Final Remedial Decision.</li> </ul>
Spring 2023–Fall 2023	<p>ARC submits to USEPA the following documents related to the Remedial Investigation:</p> <ul style="list-style-type: none"> <li>• Draft Remedial Investigation Report</li> <li>• Draft Baseline Human Health Risk Assessment Report</li> <li>• Draft Baseline Ecological Risk Assessment Report</li> </ul>
February 2024	Lahontan Water Board unsuccessfully pursues additional funding for treatment operations for fiscal years 2024-25 through 2028-29.
March 2024	Lahontan Water Board contractors initiate Early-Season Pond Water Treatment.
July 2024	SB 156 and its associated trailer bill becomes law. This includes a new statute, Government Code section 14673.12, allowing the Department of General Services (DGS) to transfer the Leviathan Mine property title to another entity if it is determined to be in the State’s best interest. The Lahontan Water Board receives additional funding for Leviathan Mine (\$3.5 million for treatment system upgrades and \$200k for possible future costs for DGS to potentially transfer title of the Leviathan Mine property to another entity).

<b>CHRONOLOGY</b>	
July 1, 2024	Lahontan Water Board staff submit comments on the Draft Remedial Investigation Report along with comments from the Office of Environmental Health Hazard Assessment (OEHHA) and Desert Research Institute (DRI).
August 5, 2024	Lahontan Water Board staff submit comments on the Draft Baseline Human Health Risk Assessment and Draft Baseline Ecological Risk Assessment reports along with comments from OEHHA.

<b>BACKGROUND</b>
<p>Lahontan Water Board staff will provide project background for Leviathan Mine and updates on the following topics:</p> <ul style="list-style-type: none"> <li>• 2024 Early-Season and Summer Pond Water Treatment and Site Maintenance Activities</li> <li>• Funding for Pond Water Treatment and Site Maintenance</li> <li>• Review of ARC Technical Reports</li> </ul> <p><b>2024 Early-Season and Summer Pond Water Treatment and Site Maintenance</b></p> <p>The storage ponds received greater-than-normal AMD inflow despite less-than-normal water year in 2024. The inflow was driven by record precipitation during the 2023 water year. This flow condition caused the ponds to reach near capacity in March 2024. Lahontan Water Board staff conducted Early-Season Pond Water Treatment during spring 2024 and avoided an exceedance of the pond storage capacity.</p> <p>Lahontan Water Board staff completed Summer Pond Water Treatment during summer 2024. The treatment process included treating and evacuating all AMD from the storage ponds as required by USEPA Order. Additionally, Lahontan Water Board staff completed routine site maintenance activities to maintain:</p> <ul style="list-style-type: none"> <li>• capacity of the stormwater conveyance systems and proper function of sediment control best management practices</li> <li>• United States Geological Survey (USGS) flow monitoring equipment</li> <li>• winter storage facilities for treatment equipment and materials</li> <li>• power supply to Lahontan Water Board's office trailer</li> <li>• fencing at the main points of entry to the site</li> <li>• a fire safe perimeter around the treatment system</li> </ul> <p><b>Funding for Summer Pond Water Treatment and Site Maintenance</b></p> <p>The current annual funding allotment from the General Fund for the Lahontan Water Board's Summer Pond Water Treatment effort and routine site maintenance activities is inadequate. The funding amount to treat nine million gallons of acid mine drainage (projected annual average) and routine maintenance was established at approximately \$700,000 in fiscal year 2014-2015 and has not changed. Meanwhile,</p>

## **BACKGROUND**

Summer Pond Water Treatment and routine site maintenance costs nearly doubled to approximately \$1.3 million for fiscal year 2024-2025. Lahontan Water Board staff are working to secure additional funding.

Insufficient funding could cause the Lahontan Water Board to fail to comply with the USEPA Order. Failure to comply with the USEPA Order could result in USEPA taking enforcement action against the State of California.

### **Review of Technical Reports Submitted by ARC**

The Remedial Investigation (RI) Report has many unresolved issues. Properly defining background conditions in media is a critical component of the RI CERCLA process and has many challenges. Establishing defensible background conditions for metals of concern need to be addressed to ensure the nature and extent of contamination from mining related impacts can be properly evaluated and sitewide remedial actions are protective of human health and the environment. ARC conducted investigation activities to characterize the nature and extent of mining related impacts in soil, groundwater, surface water, stream sediment, floodplain soil, and biota from the Site to the East Fork Carson River between 2010 and 2017. Lahontan Water Board staff, DRI, and OEHHA reviewed the RI Report, participated in technical meetings with USEPA, ARC, and stakeholders, and submitted comments identifying unresolved issues on the RI Report.

The Baseline Human Health Risk Assessment (BHHRA) Report is flawed due to unresolved issues in the RI Report. Proper risk assessment is needed to determine if there is an unacceptable risk to human health and evaluate remedial actions to address unacceptable risk in the Feasibility Study. The BHHRA Report includes a quantitative assessment of current and future potential risk to receptors associated with exposure to metals of concern from mining related impacts extending from the Site to the East Fork Carson River. ARC relied on the data and evaluations in the RI Report to develop the BHHRA Report. Lahontan Water Board and OEHHA staff reviewed the BHHRA Report, participated in a technical meeting with USEPA, ARC, and stakeholders, and submitted comments linking the unresolved issues in the RI Report with the BHHRA Report.

The Baseline Ecological Risk Assessment (BERA) Report is flawed due to unresolved issues in the RI Report. Proper risk assessment is needed to determine if there is an unacceptable risk to ecological receptors and evaluate remedial actions to address unacceptable risk in the Feasibility Study. The BERA Report includes a quantitative assessment of potential ecological risks associated with exposure to metals of concern from mining related impacts extending from the Site to the East Fork Carson River. ARC relied on the data and evaluations in the RI Report to develop the BERA Report. Lahontan Water Board and OEHHA staff reviewed the BERA Report, participated in a technical meeting with USEPA, ARC, and stakeholders, and submitted comments linking the unresolved issues in the RI Report with the BERA Report.

## ISSUES

The Site acts as an ongoing source of mine-related contamination. The CERCLA process is intended to mitigate the impacts from the contamination. Once complete, the ongoing operation and maintenance of the remedial action will likely extend into perpetuity. In the meantime, Lahontan Water Board staff work with USEPA (project manager), ARC (fellow responsible party), and others to move forward in the CERCLA process.

## DISCUSSION

The purpose of this informational agenda item is to discuss the activities completed by Lahontan Water Board staff since the last project update in October 2023.

## CLIMATE CHANGE RESPONSE

Requirements and prohibitions incorporated in Order Nos. R6V-2021-0014 and R6V-2021-0015 and the associated Monitoring and Reporting Program are consistent with [Resolution R6T-2019-0277](#) (Resolution), the Lahontan Water Board's Climate Change Mitigation and Adaptation Strategy, in the following key resources areas: (1) Protection of Wetlands, Floodplains, and Headwaters; and (2) Protection of Groundwater Quality and Supply.

## PRESENTERS

Hannah Bartholomew, Lahontan Water Board, Water Resource Control Engineer

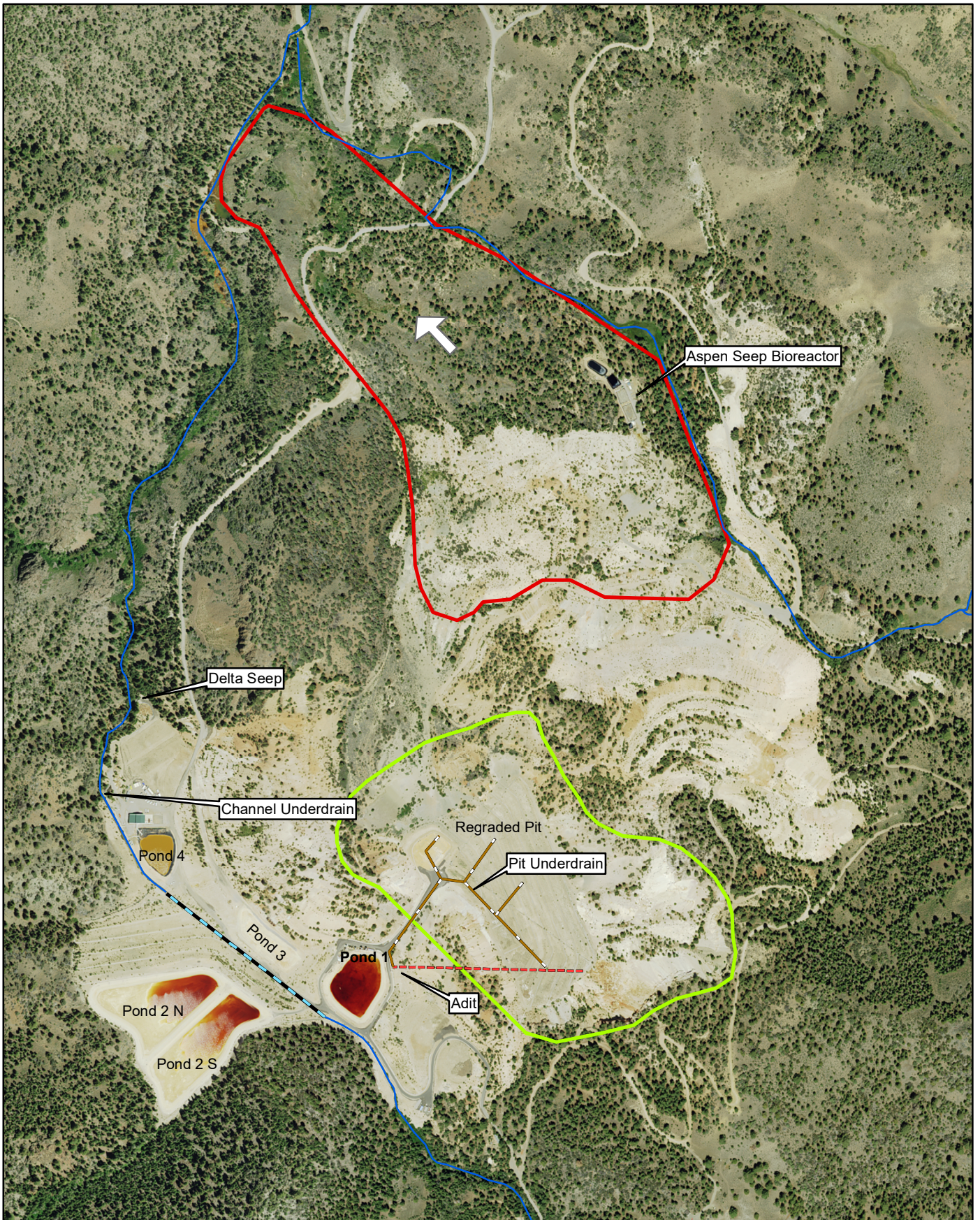
## RECOMMENDATION

This is an informational item only. No Lahontan Water Board action is requested for this item; however, the Lahontan Water Board may provide direction to staff.







ENCLOSURE	ITEM	BATES NUMBER
1	Leviathan Mine Site Map	7 - 7

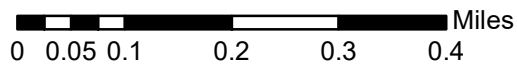
# **ENCLOSURE 1**





**Legend**

-  Pit Underdrain
-  Adit
-  Leviathan Creek Culvert
-  Creek
-  Pit
-  Landslide



# Leviathan Mine

