



EXECUTIVE OFFICER'S REPORT
Covers February 1 – February 28, 2022

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1. Personnel Report – Sandra Lopez

New Hires - None

Vacancies

- Engineering Geologist, Non-Point Source Unit, South Lake Tahoe. This position will assist with technical, regulatory, and administrative procedures related to review of project environmental disclosure and permitting documents.
- Senior Engineering Geologist (Specialist), Leviathan Mine, South Lake Tahoe. This position will evaluate and provide advice to Water Board management regarding the Water Board's cleanup and abatement actions needed at the Leviathan Mine to comply with the USEPA's Administrative Abatement Action Order.
- Water Resource Control Engineer, Forestry / Dredge & Fill Unit, South Lake Tahoe. This position reviews and inspects U.S. Forest Service timber harvest and vegetation management, and/or ecological restoration projects.
- Engineering Geologist, Forestry / Dredge & Fill Unit, South Lake Tahoe. This position will review timber harvest plans and conducting pre-harvest and post-harvest field inspections in order to evaluate the impact of logging operations and

other forest practices (e.g., vegetation management for utility corridors) on the quality and beneficial uses of water.

- Engineering Geologist, Cleanup/Site Investigation & Enforcement Unit, South Lake Tahoe. This position will oversee/direct site investigation and cleanup activities at various sites, such as underground storage tank sites, dry cleaner sites, mines, landfills, and Department of Defense sites.
- Engineering Geologist, Cannabis Unit, Victorville. This position will work as a part of an interdisciplinary team and will perform duties regulating the discharge of waste from illegal or permitted cannabis cultivation sites and associated facilities or operations with similar environmental effects.
- Scientific Aid, Regulatory & Enforcement Unit, South Lake Tahoe. This position supports staff primarily through review of submitted self-monitoring reports, along with other special projects.
- Scientific Aid, Forestry/Dredge & Fill and Non-Point Source Units, South Lake Tahoe. This position will evaluate water quality data and assess compliance with water quality orders and permits associated with grazing, restoration, timber, and forestry activities.
- Senior Water Resource Control Engineer, Wastewater and Agriculture Unit, Victorville. This position will supervise staff performing tasks related to existing, new, expanded, and improved wastewater treatment and disposal facilities, onsite wastewater treatment systems and septic systems, dairies, heifer ranches, stormwater, and site cleanup program sites.
- Scientific Aid, Wastewater and Agriculture Unit, Victorville. This position supports staff primarily through review of submitted self-monitoring reports, along with other special projects.

Departures - None

2. Federal Government Shows Support to Mountain Pass Mine – *Shelby Barker*

Mountain Pass Mine, located in California along the I-15 corridor near the Nevada state line, is the only active rare earth mineral mine in the United States (US) (Figure 2.1). In 2015, Molycorp Minerals, LLC (Molycorp) filed Chapter 11 bankruptcy leaving the mine in cold idle until it was purchased by MP Mine Operations, LLC (MPMO). The rare earth elements found at Mountain Pass Mine are necessary for components in national defense systems as well as technological consumer products including smartphones, fiber-optic cables, medical devices, and green technologies such as wind turbines and electric vehicles (EV). Since the sale of Mountain Pass Mine, MPMO has continued to grow and catch the eye of various investors and federal agencies. The initial attention was unsurprising, given that the 17 rare earth minerals mined at the Mountain Pass Mine site are classified as strategic minerals by the US government giving these minerals importance to so many technological industries.

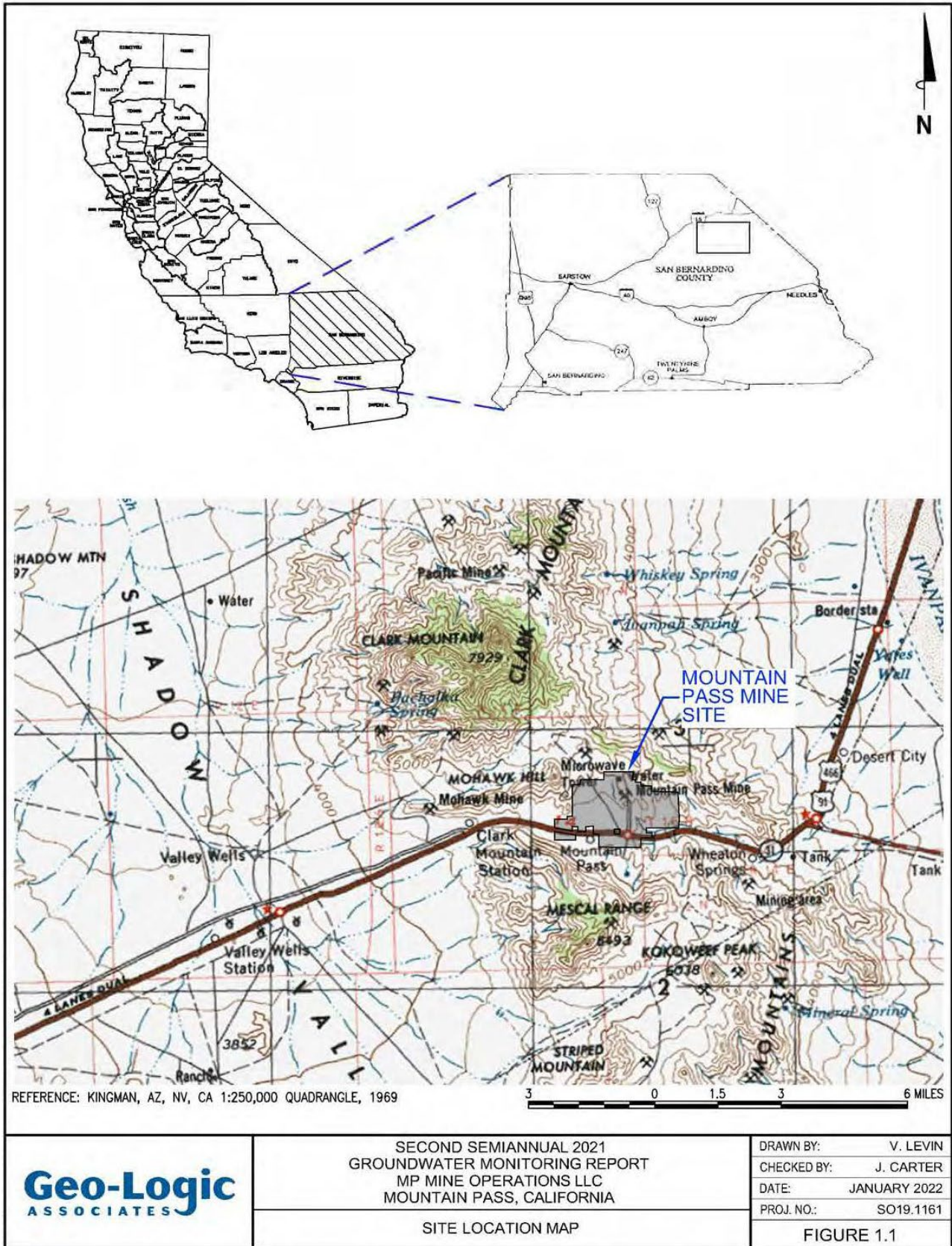


Figure 2.1: Map showing location of Mountain Pass Mine in San Bernardino County

However, immediately following MPMO's purchase of Mountain Pass Mine, industry leaders became increasingly concerned about the US reliance on China for the majority of rare earth elements and began sharing such concerns with the Trump administration. In December 2017, President Donald Trump signed Executive Order 13817: A Federal Strategy to Ensure Secure and Reliable Supplies of Critical Minerals (2017 Executive Order), requiring the Secretary of the Interior to identify critical minerals in the US and made it a policy for the Federal Government "to reduce the Nation's vulnerability to disruptions in the supply of critical minerals." This Executive Order led to a 2018 Report that identified 35 critical minerals as a particular concern, including several rare earth elements that are found at Mountain Pass Mine. However, the 2017 Executive Order and subsequent 2018 Report had not yet opened any avenues to provide additional funding to Mountain Pass Mine.

Each year since purchasing Mountain Pass Mine, MPMO had increased their mining production, compared to predecessor volumes, but are still unable to process the rare earth oxide (REO) on site. As such, REO are still being sent to China for further processing and refining. This issue and other similar concerns with access to mining and processing of these critical minerals led President Trump to issue another Executive Order in September 2020 (2020 Executive Order) declaring a national emergency to address the country's reliance on foreign sources for these critical minerals. The 2020 Executive Order also specifically identified the need to improve America's domestic mining and processing capacity.

Shortly thereafter in November 2020, MPMO merged with Fortress Investments which allowed the newly formed parent company, MP Materials Corporation, to become a publicly traded company on the New York Stock Exchange (NYSE) beginning November 18, 2020. This raised approximately \$500 million to support the MPMO's Stage II Optimization, which will allow them to process REO material onsite as opposed to selling it to China for processing. That same week they went public on the NYSE, the Pentagon awarded Mountain Pass Mine a Defense Production Act Title III Grant for \$9.6 million to help facilitate design and construction of their \$200 million REO refinement facility as part of the Stage II Optimization project.

The predecessor, Molycorp, primarily focused on processing cerium, which is the most abundant of the rare earth elements at Mountain Pass Mine. However, MPMO intends to design their Stage II Optimization project to also process the more profitable rare earth elements used in permanent magnets. Neodymium-Praseodymium (NdPr) oxide, which is expected to represent approximately 90% of MPMO's future revenue, is the primary material needed to make the most efficient and highest strength permanent magnets used in many electric systems such as EV traction motors, wind turbines, drones, industrial robots, speakers, and consumer electronics. Other heavy rare earth elements present in mine materials such as terbium and dysprosium that will be processed can be used in other critical defense systems, medical devices, fiber optics, and other advanced technologies. In December 2021, MPMO announced that they will also design and construct the first commercial-scale magnet facility to be built in the US in over 20 years. Currently, there is no single end-to-end facility in the US that can convert NdPr oxide to a finished magnet.

President Joseph Biden has continued the Federal support of improving domestic production of these critical minerals. In June 2021, the Biden Administration released their 100-day review, “Building Resilient Supply Chains, Revitalizing American Manufacturing and Fostering Broad-Based Growth,” which included a section on strategic and critical minerals and their thoughts on rare earths. In February 2022, President Biden, alongside California Governor Gavin Newsom, White House National Climate Advisor Gina McCarthy, Deputy Secretary of Defense Kathleen Hicks, and Energy Secretary Jennifer Granholm, announced that Mountain Pass Mine received \$35 million in funding awards from the Department of Defense’s Industrial Base Analysis and Sustainment Program to further support MPMO to establish their full end-to-end domestic permanent magnet supply chain. This funding will enable MPMO to proceed with plans to separate the heavier rare earth elements into 11 additional oxides, particularly terbium and dysprosium, which will be used in the NdPr magnets.

Construction for Stage II Optimization project broke ground in 2021, and MPMO hopes it will be operational in 2022. Water Board staff are working with MPMO to evaluate whether the proposed operations will affect current waste effluent discharges, or produce new waste discharges, that may require revisions to the Waste Discharge Requirements (WDRs), or new WDRs, for the Mountain Pass Mine facility. The end-to-end magnet facility is expected to be operational in 2023 with production of finished magnets in 2025. General Motors has already committed to being one of its foundational customers of the facility.

In 2021, MPMO produced 42,400 metric tons of REO (over 3.5 times the volume produced by Molycorp), making Mountain Pass Mine the second largest producer of rare earths in the world, and the largest producer outside of China. MPMO also announced that they profited approximately \$330 million in revenue and \$168 million in net income in 2021, with a cash balance of \$500 million. Also, in the same year, MPMO issued a \$690 million green convertible bond with proceeds to be used to reduce the Mine’s environmental impact and/or enable the production of low-carbon technologies.

3. Eastern California Cannabis Unit: Establishing Priority Watersheds for the Lahontan and Colorado River Basin Regional Water Quality Control Boards – *Alex Spencer*

As part of Executive Oversight Committee (EOC) recommendations for improving statewide performance of the State and Regional Water Boards Cannabis Cultivation Programs, Regional Water Board Units throughout California have been tasked with identifying priority watersheds through which to identify enrollment, inspection, and enforcement priorities. This task is intended as a collaborative effort between the Regional Boards and the California Department of Fish and Wildlife (CDFW). The Eastern California Cannabis Unit, with jurisdiction encompassing the Lahontan and Colorado River Basin Regions, shares territory with five separate CDFW Regions: The Inland Desert (6), the South Coast (5), the Central (4), the North Central (2), and the North Region (1).

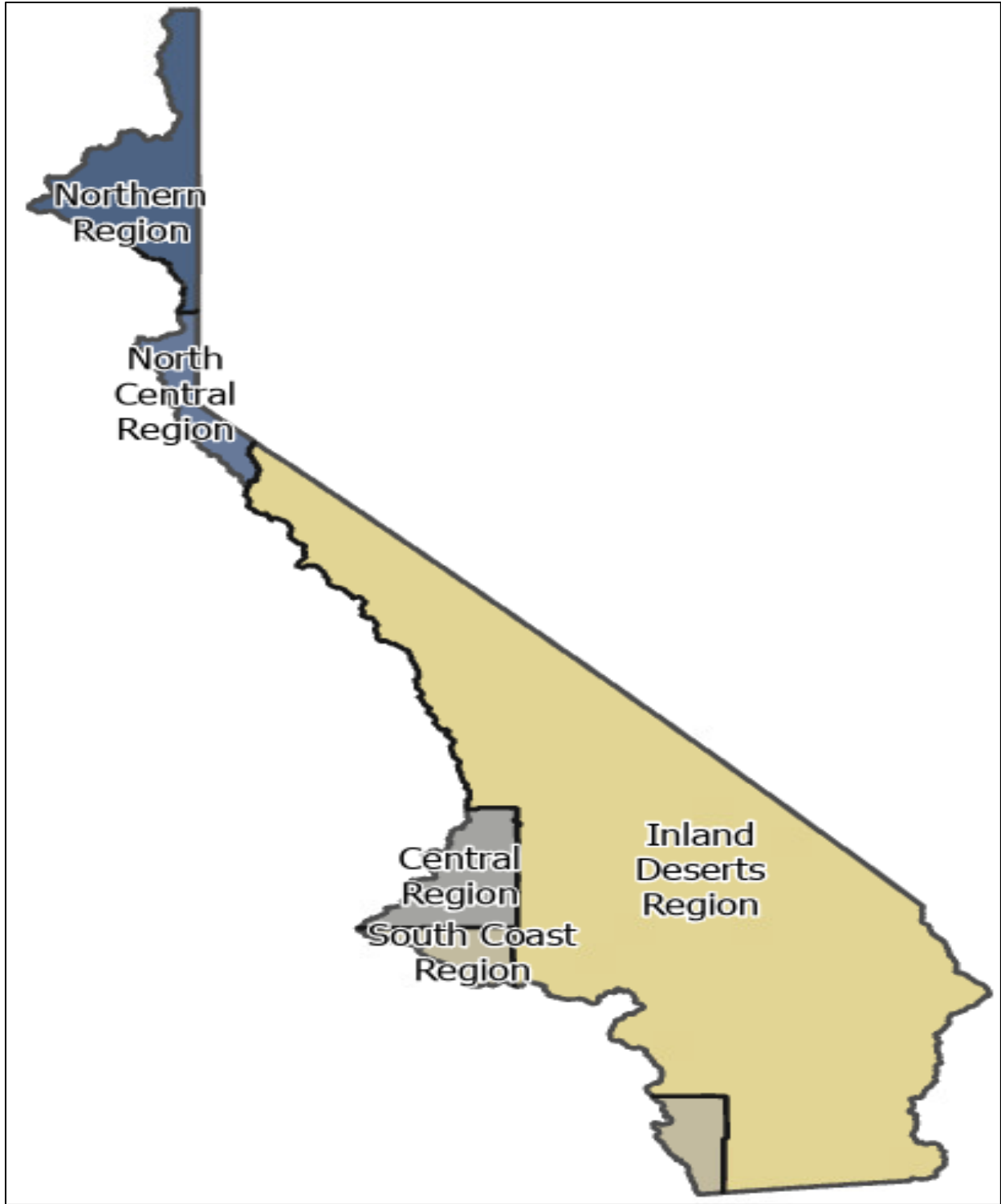


Figure 3.1: Overlap of CDFW and the Lahontan and Colorado River Basin Regions

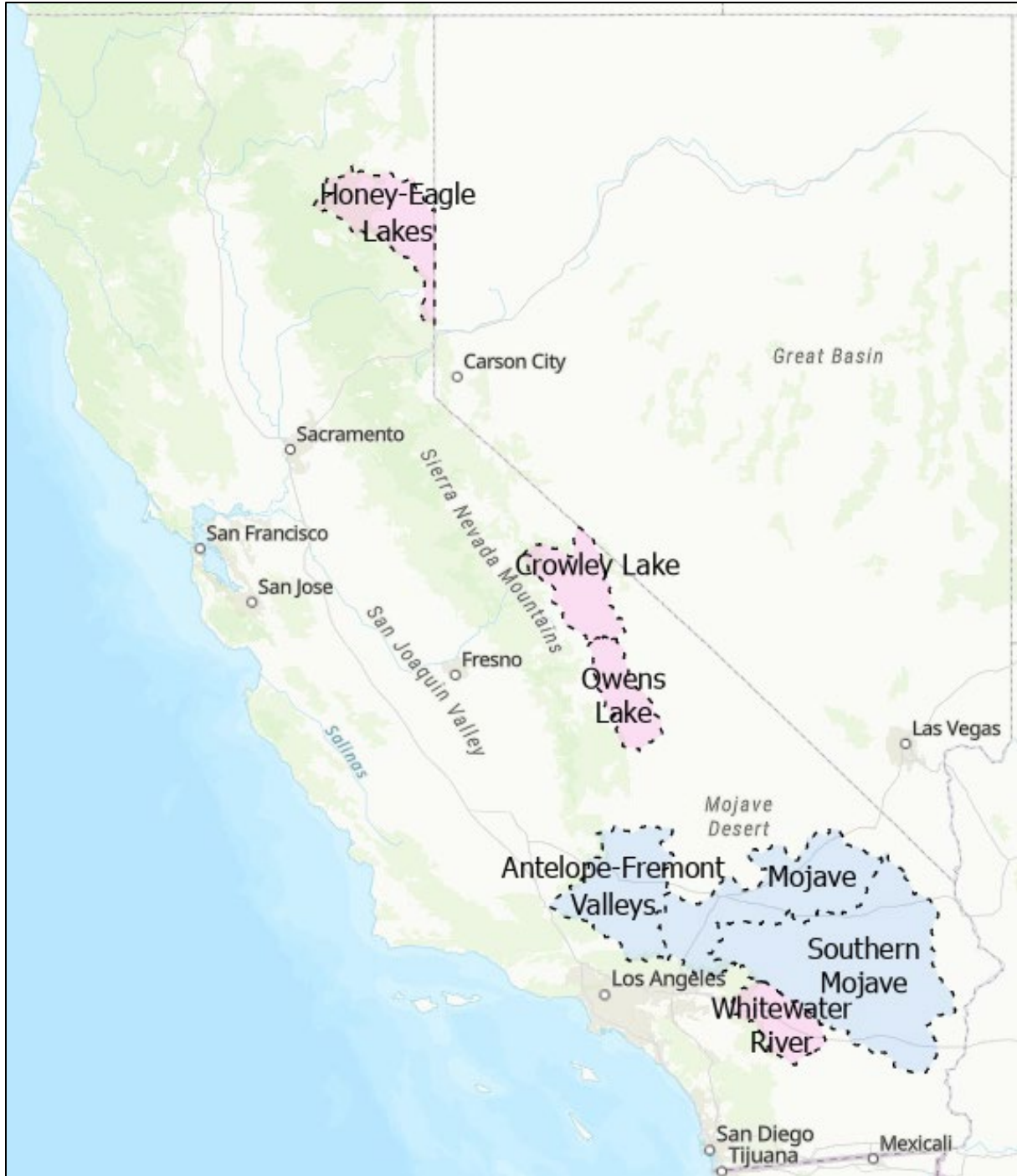


Figure 3.2: Primary (blue) and secondary (red) priority watersheds

Eastern California Cannabis Unit staff reached out to these counterparts, with emphasis on the Inland Desert Region, to determine priority areas for each agency. Criteria for the analysis, prescribed by the EOC includes:

- Acres disturbed by cultivation
- Cultivation density
- Water diversion present
- Wild or scenic waterways present
- Threat to drinking water
- Disadvantage community presence
- Anadromous species present
- Wetland impacts

In our effort to collaborate with our CDFW partners, we established additional parameters focusing on the interests of both agencies. These parameters include:

- Presence of sensitive or critical habitats habitat
- CDFW or government owned lands
- Hunting and fishing use/game preservations
- Natural Community Conservation Plans
- Multispecies Habitat Conservation Plans
- Presence of overdrafted or adjudicated groundwater basins
- Presence of 303d listed streams
- Presence of higher order streams

This assessment was completed hand-in-hand with the Inland Desert Region, using GIS software to display each parameter throughout our regions. After reaching out to the other CDFW Regions within the Lahontan and Colorado River Basins, unit staff chose three primary priority watersheds: The Antelope-Fremont Valleys, the Mojave, and the Southern Mojave. Four secondary priority watersheds were also chosen, as they also included sensitive habitat, a strong presence of legal and illegal cannabis cultivation, and representation for more northern portions of our regions: The Honey-Eagle Lakes, Crowley Lake, Owens Lake, and the Whitewater River Watersheds. Each watershed exists within the boundaries of the Lahontan Water Board and intersect with all five of the CDFW regions who share our boundaries.

The establishment of these watersheds will further allow the Eastern California Cannabis Unit to focus enforcement efforts in areas where they are most needed. Regional and State Water Board management and staff also hope to use this tool as a way to collaborate between Water Board, CDFW scientific staff, County and law enforcement staff to increase the rate and efficiency of search warrants and inspections.

4. Standing Item — Confined Animal Facility Status Report – *John Morales and TJ Middlemis-Clark*

The Water Board has tracked and, in some cases, regulated the groundwater quality impact of confined animal facilities (CAFs) since 1983. In the intervening time, Water Board staff have developed and presented strategies and items for board adoption to

deal with the potential or recognized water quality impact to groundwater. For the purposes of these projects, Water Board staff have considered any facility housing either more than 50 animal units (AUs, defined as 1,000 pounds of animal weight) or 500 or more animals, whichever is fewer, to be a CAF.

2010 Dairy Strategy

Water Board staff have spent the last decade implementing the regulatory strategy outlined in Water Board's May 2010 (Item 7) staff report to address groundwater pollution impacts from large CAFs. The strategy discusses the regulatory background, a proposed dairy regulatory program framework, a list of challenges, and a list of recommendations.

The dairy strategy contains the following key components, shown in priority order:

1. Assess and address risk to downgradient receptors from exposure to polluted groundwater
2. Identify appropriate source controls and require phased implementation of suitable waste minimization, control, and disposal practices under WDRs or a Conditional Waiver
3. Ensure adequate monitoring to evaluate the extent of affected groundwater and the effectiveness of source control measures implemented
4. Require groundwater remediation where groundwater beneficial uses are impaired

These key components were discussed in previous Executive Officer Reports, including the February 2021 Executive Officer's Report, Standing Item 4.

Current Status of Dairy and Other Cattle Facilities

Staff monitor the status of 13 active and former CAFs. Individual waste discharge requirements (WDRs) were issued to four dairies. Currently, there are eight active dairies and heifer ranches and five closed or closing facilities. Under cleanup and abatement orders or settlement agreement, five CAFs are providing replacement bottled water to nearby residences. Figure 4.1 displays the relative locations of the tracked facilities.

The eight facilities that are currently active house 17,842 cattle, based on discussions between staff and facility owners during inspections conducted within the past year. All active facilities are regularly inspected and assessed regarding water quality impact reduction practices. Implementing these practices is voluntary for facilities who are not regulated by WDRs. However, detected impacts to water quality can lead to regulated enforcement actions.

Closed (and closing) facilities may also have impacted groundwater. This is particularly true if any contaminated materials are left onsite. Therefore, Water Board staff plan to send closure letters to these facilities with specific steps. These steps may include

demonstrating manure removal throughout the facility and assessing groundwater to determine the extent of any possible nitrate and total dissolved solids (TDS) contamination. Depending on the condition of the site, the responsible parties may be required, under enforcement actions, to improve site cleanup activities and/or groundwater cleanup remediation efforts prior to departure.



Figure 4.1: Map of tracked confined cattle facilities in the Lahontan Region

During the past ten years, staff developed the discharge requirements and enforcement actions in place at the active and closed facilities. Additionally, staff sampled groundwater wells, inspected facilities, conducted outreach workshops, and worked on a set of general waste discharge requirements for all dairy and other cattle facilities in the region. In the near term, staff plan to conduct additional outreach, extending beyond dairy and other cattle facility owners and representatives to other interested and potentially impacted parties and stakeholders. Staff plan to seek study funding opportunities and discuss the dairy and other cattle facilities program with the board as a workshop item in fall 2022.