

EXECUTIVE OFFICER'S REPORT • February 2019

Covers December 16, 2018 – January 15, 2019

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State and Regional

1. Personnel Report – *Eric Shay*

Vacancies – We are currently recruiting for the following positions:

- Office Technician, Victorville. This position supports our technical staff by finalizing staff correspondence and board agenda packets.
- Scientific Aid, North Basin Regulatory Unit, South Lake Tahoe. This position assists staff with administering storm water and water quality certification permitting actions, conducting inspections, reviewing reports, and maintaining databases.
- Scientific Aid, Land Disposal Unit, Victorville. This position assists staff with administering land disposal, storm water, and water quality certification permitting actions, conducting inspections, reviewing reports, and maintaining databases.

Departures - None

Volunteer Work

• Jeff Fitzsimmons, Engineering Geologist, has volunteered to participate for two months on the Debris Task Force – North for the Camp Fire emergency response.

Mr. Fitzsimmons is scheduled to deploy February 9 through March 11, 2019, and April 5 through May 5, 2019.

• Katrina Fleshman, Executive Assistant, has volunteered to provide notary services on an intermittent basis in Chico for the Camp Fire emergency response.

North Lahontan Region

2. Two New Special Studies Included in Regional SWAMP Program in 2019

- Mary Fiore-Wagner

Occasionally, our regional Surface Water Ambient Monitoring Program (SWAMP) includes special studies to evaluate unique issues and/or to assist other programs with their monitoring needs. Two focused monitoring efforts are planned for 2019.

Eagle Lake Water Quality Trend Monitoring. In collaboration with a local community group, the Eagle Lake Guardians, Water Board staff will conduct the Eagle Lake Water Quality Trend Monitoring Project. State Board Clean Water Team lead staff, Erick Burres, and Water Board staff will kick-off the monitoring the end of January with field training for representatives from the Eagle Lake Guardians who will be responsible for taking meter readings, recording field observations, and collecting water samples. The project will include testing for nutrients, bacteria, and pigments chlorophyll-a and phycocyanin (specific to cvanobacteria) at four discreet in-lake sampling locations to capture water quality conditions in the north, middle, and south basins of the lake. The four locations will be colocated near sites monitored previously by the Department of Water Resources at various frequencies and periods of record spanning between 1962 - 2017. Analyses will be supported by our region's SWAMP allocation and be conducted at the Lahontan Water Board's in-house and contract laboratories. Water Board staff will assist with bacteria analysis, preparation of filters for pigment and bacterial source tracking, shipping and handling of samples, and data upload to the California Environmental Data Exchange Network (CEDEN) in compliance with SWAMP business rules and controlled vocabulary.

Data gathered will be used to evaluate current water quality conditions in Eagle Lake, which is on the Clean Water Act's 303 (d) list as impaired for Total Nitrogen and Total Phosphorus. Since its listing as an impaired water body, some management measures (septic system hookups and meadow restoration) have been implemented within the Eagle Lake watershed; however, a comprehensive assessment of water quality conditions to determine the effectiveness of those management measures has not been conducted. The Non-Point Source Unit may also use the findings from the water quality sampling to inform the need for improved grazing management practices on public and private land along the Eagle Lake shoreline.

Laminar Flow Aeration – Effectiveness Monitoring of Non-Chemical Management of Cyanobacteria. Once weather permits safe access to the lake bottom, the Tahoe Keys Property Owners Association (TKPOA) will be installing a non-chemical control measure to test its efficacy in limiting aquatic weed growth. The technology, referred to as laminar flow aeration, involves delivery of atmospheric air to microporous ceramic disks that will be placed in the bed of a lagoon within the Tahoe Keys waterways. Air circulates through the system creating bubbles that diffuse from the bed of the water body, through the water column to the surface (i.e., laminar flow inversion). This action mixes the water, breaking up any stratification present, which helps aerate the water column from bed to surface, increasing dissolved oxygen and movement of cooler water toward the surface. Additionally, the process helps reduce and lock up nutrients that are biologically available for plant growth, as explained in an October 2018 Executive Officer's Report prepared by Russell Norman:

"The increase in dissolved oxygen in the bed sediments is believed to result transformation of ammonia in organic sediments to nitrite and then nitrate. Nitrate is not a preferred source of nitrogen for macrophytes (e.g., aquatic invasive plants) so, it is theorized that reducing ammonia in a water body with organic bed sediments will limit the growth of aquatic invasive plants. Once all sediment organic matter is oxidized, the remaining bed material will be mineral in nature. Mineral based bed material does not provide the nutrients to support macrophyte growth that organic bed sediments provide."

Aside from the promise this technology holds in limiting aquatic plant growth, this same treatment method may help control harmful algal blooms (cyanobacteria) that have recently impacted portions of the Tahoe Keys waterways. Since 2017, water quality monitoring in the Tahoe Keys waterways, including sampling within the proposed test site location, has confirmed the presence of cyanobacteria capable of producing toxins. As such, TKPOA has posted health advisories to warn the community about the potential risks to human and animal health when contacting the affected water.

To evaluate the effectiveness of this non-chemical control option, TKPOA's water quality department will collect and analyze water quality samples from up to five locations within the influence of the treatment system and one control site. To complement the water quality monitoring, TKPOA will measure changes in nutrient levels in bottom sediments and survey aquatic plant composition, cover, and density within the test location. Coupled with the results of the water quality testing, the additional data will be considered to determine the usefulness of laminar flow aeration in reducing nutrients in the water and sediments and as a viable non-chemical alternative to control aquatic invasive species and harmful algal blooms.

3. Cannabis Inspection Program Development - Kathleen Bindl

On December 11th, 2018, all Eastern California Regional Cannabis Unit staff participated in an outdoor cultivation site inspection training at Tilth Farms located in Coleville (cannabis



Tilth Farms Water Board Site Inspection, Coleville.

was not being grown at this time). This was an excellent training opportunity where data collection gear and an electronic inspection form was tested on site. Alex Spencer (Water Resource Control Engineer in the Eastern California Regional Cannabis Unit) digitized the inspection form developed by the State Water Board's Office of Enforcement. This will standardize and streamline data collection efforts during site inspections. The digital form allows inspectors to collect precise GPS points and site information on individual computer tablets including cultivation

area perimeter; water storage and use; watercourse crossings; roads and drainages; soil and waste disposal management; riparian and wetland protections; land development and erosion control; fertilizer and pesticide storage practices; and photographs. After collecting the raw field data, staff return to the office and download the information. This increases efficiency because field data is electronically loaded into the inspection database, which avoids the step of manually transcribing the field data into the database. Water Board staff are working on options to auto-generate an inspection report to further streamline the process.

This tool will greatly increase staff efficiency and high-quality data collection. Once the process is refined, the streamlined inspection report process will be rolled out to other Water Board cannabis units throughout the State.

4. Woodfords Sodium Hypochlorite Solution Spill – Update of Spill Response and Cleanup Activities – *Abby Cazier*

This article is an update of an earlier July 2018 Executive Officer's Report. On May 9, 2018, a tractor-trailer hauling approximately 4,900 gallons of 12.5 percent sodium hypochlorite (chlorine bleach) solution traveling east bound on State Route 88 near the town of Woodfords lost control



Overturned sodium hypochlorite solution tanker trailer on State Route 88, embankment, May 9, 2018.

and crashed on the north side of the highway. The tractor-trailer came to rest on the embankment on the north side of the highway. The tanker trailer ruptured on impact, causing the entire volume of sodium hypochlorite solution to be released to the surrounding soils and a drainage channel conveying the flow of an unnamed tributary of the West Fork Carson River. A small area of soil was also affected by diesel fuel and motor oil, where the tractor-portion of the tractortrailer came to rest.

The initial site assessment

determined that the chlorine bleach solution did not directly impact the West Fork Carson River, likely due to the high spring flows at the time of the spill. However, the spill did impact the soil on the embankment and required removal action. The first phase of removal action was conducted during the week of May 29, 2018, by excavating the top three inches of affected soils and chemically burned vegetation from the spill area and drainage channel.

Soil confirmation results from the first phase of removal action indicated the spill site had not been cleaned up to background conditions.

Elevated chloroform concentrations were detected in the confirmation soil samples collected after the May 2018 removal action that exceeded the Leaching to Groundwater Environmental Screening Level (ESL) of 0.068 milligrams per kilogram (mg/kg). The chloroform is considered to be a bi-product from the sodium hypochlorite spill and was used as the indicator contaminant to establish if the



Second phase of soil excavation, September 26, 2018.

spill was adequately cleaned up. The chloroform is thought to have been generated when the chlorine molecules in the sodium hypochlorite solution interacted with the naturally occurring organic material in the soil. Chloroform was not detected in background soil samples; the maximum concentration of chloroform detected in the spill area soil was 11 mg/kg where the tanker trailer came to rest. A subsequent soil investigation revealed the spill had affected the soil to a maximum depth of eight feet.

The Responsible Party contractors began the second phase of remedial action by

removing impacted soils on September 24, 2018, using a backhoe and excavator. Approximately 443 cubic yards of soil were removed from the embankment and disposed of at Lockwood Landfill in Reno, Nevada, and soil confirmation sampling indicated the site had been cleaned up to background conditions.

Site restoration activities began on October 8, 2018 and included backfilling the excavation area with native fill obtained from the California Department of Transportation and placing jute netting and straw wattles



Erosion control measures installed following excavation (jute netting, straw wattles, and hydroseed), October 18, 2018.

on the exposed slope. On October 14, 2018, a mixture of paper and wood mulch, tackifier, and native seed mix was applied to the backfilled excavation to provide additional erosion control. The hydroseeded slope will be periodically inspected through the spring of 2019 to evaluate slope stability and to ensure additional erosion control measures are not required.

South Lahontan Region

5. Antelope Valley Integrated Regional Water Management Group Meets in Palmdale to Discuss New Requirements, Amendment to 2018 Memorandum of Understanding – *Tiffany Steinert*

Integrated Regional Water Management (IRWM) began in 2002 when the Regional Water Management Planning Act (SB 1672) was passed by the Legislature. Since then, various bond acts approved by California voters have provided over \$1.5 billion in State funding to support and advance integrated, multi-benefit regional projects. Cities, counties, water districts, community/environmental groups and others across the State have worked collaboratively to organize and establish 48 regional water management groups, covering over 87 percent of the State's area and 99 percent of its population.

The California Department of Water Resources added new requirements in October 2018 to its IRWM Grant Program Guidelines document for administering Proposition 1 (Water Bond 2014) grants. Because of the new grant requirements, the Antelope Valley IRWM group held a meeting in Palmdale on December 19, 2018, to discuss how to comply with the new requirements. These requirements include updating region objectives to include determining the impacts from climate change, preparing a Storm Water Resources Plan, and preparing a Sediment Management Plan. Eight sections in a Memorandum of Understanding (MOU) were amended to address the new requirements. The MOU is in the process of being accepted by each of the member stakeholder agencies.

The Antelope Valley IRWM group also discussed the current Projects on the list for Proposition 1 funding. Brian Dietrick of Woodard & Curran explained the items that would make each Project on the list more competitive, such as having California Environmental Quality Act documents complete and having all permits in place in addition to Projects that provide multiple benefits. Mr. Dietrick stated that reviewing agencies hope to see more Projects with longer life expectancies this round of funding, preferably 15 years or more.

The meeting concluded with public comments. Gene Nebeker, Advisory Team member for the Antelope Valley IRWM Group, voiced his concern that the adjudication values provide by the United States Army Corps of Engineers were flawed, and the group should provide money to the Water Master to challenge the findings. Ronald Smith, General Manager of Rosamond Community Services District, countered and said no money should be spent as no legal means exist to challenge the Native Safe Yield set by the court in the adjudication until the ramp down period is up (circa 2032). The next Antelope Valley IRWM meeting will be held on January 23, 2019.

6. Retired Executive Director of Mojave Water Agency Presented at the Groundwater Resources Association of California, Inland Empire Chapter – *Tom Browne*

On October 13, 2018, at the Inland Empire Chapter meeting of the Groundwater Resources Association of California, Kirby Brill, retired Executive Director of the Mojave Water Agency (MWA), shared his wisdom on the future of the Sustainable Groundwater Management Act (SGMA). SGMA refers to a series of State legislation signed into law in September 2014 (AB 1739, SB 1168, and SB 1319) and its implementation throughout the state. The talk was held in Riverside at a local restaurant. Most members of the audience were consultants who work for stakeholders in the process of developing a sustainable Groundwater Management Plan.

Mr. Brill's message was full of optimism for what likely may be a potentially long process in getting water users to agree on allocation rights and costs. Some members of the audience said there was a lot of disagreement between stakeholders in the adjudicated Mojave River basin. Though Mr. Brill's talk did not mention any details about those difficulties, he was optimistic that if stakeholders listen to one another, compromise can be reached. He frequently quoted Peter F. Drucker, management consultant and educator: "management is doing things right; leadership is doing the right things;" "the most important thing in communication is hearing what isn't said;" and "the best way to predict the future is to create it."

Groundwater Sustainability Agencies (authorities) are forming to manage groundwater basins sustainably and begin the process of writing and adopting Groundwater Sustainability Plans for high and medium priority basins throughout the South Lahontan region. The Indian Wells Valley Groundwater Authority is an example of one such authority. This authority is funded by a fee applied to every acre-foot of water extracted from the Indian Wells Valley groundwater basin, where the primary users are, in order of volume: alfalfa and pistachio farmers; the US Navy; Searles Valley Minerals; the Indian Wells Valley Water Agency (the only private water purveyor in the Valley); and a variety of small private well owners.



Kirby Brill, retired Executive Director of the Mojave Water Agency, addresses a meeting of the Groundwater Resources Association of California, Inland Empire Chapter, on October 13, 2018.

The fee is used to help fund the development and implementation of the Indian Wells Valley Groundwater Sustainability Plan, which has an estimated cost of \$3.1 million.

7. Closed, Abandoned, or Inactive Landfills and Burn Dump Disposal Sites – Their Distribution and Potential Threat to Water Quality and Our Proposed Solution to Protect Water Quality - Jan Zimmerman and Jeffrey Fitzsimmons

Closed, abandoned, or inactive (CAI) landfill sites are areas where disposal of nonhazardous solid waste¹ had occurred historically, but are sites that were either closed, abandoned, or otherwise became inactive prior to November 27, 1984. Some CAI sites were operated by open burning of refuse ("burn dumps"), and some are co-located with waste disposal sites that were active after November 27, 1984. The Department of Resources, Recycling, and Recovery (CalRecycle) tracks CAI sites through their Solid Waste Information System (SWIS) and adds new sites to the database as locations are verified. There are over 2,500 CAI landfills or burn sites statewide. The number of known CAI sites in the Lahontan region is around 40 (Map 1), though it is likely that there are many more yet to be discovered.

All landfills active or closed after November 27, 1984, are regulated by the Water Board under waste discharge requirements (WDRs) pursuant to the California Code of Regulations, title 27; we currently regulate 51 landfill sites in the Lahontan region. CAI sites are not required to be closed in accordance with title 27 regulations; however, if it is determined that a CAI site poses a threat to water quality, the Water Board may impose requirements, as necessary, to accommodate regional or site-specific conditions to protect water quality. Based on the information contained in our files, it does not appear that we have directly regulated any CAI site, though we are aware that several are or have been under the regulatory oversight of a local enforcement agency.

CAI sites are existing reservoirs of solid wastes and may also include other waste constituents derived from burning of refuse, including hazardous waste. CAI sites have the potential to impact water quality through landfill gas migration, leachate migration, and exposure of waste to storm water. The primary constituents of concern are derived from decomposable wastes and include volatile organic compounds, total dissolved solids, chloride, sulfate, nitrate, turbidity, and pH. Other constituents of potential concern include metals, polycyclic aromatic hydrocarbons derived from burning of refuse, and per- and polyfluoroalkyl substances known to be in many common household items.

Recently, CalRecycle staff reached out to Water Board staff regarding several CAI sites in the region: Big Pine Dump Site and Brockman Lane Dump Site both located in Inyo County and on land owned by Los Angeles Department of Water and Power (LADWP); Paradise Camp Dump in Mono County on land owned by LADWP; and Ridgecrest #1 Dump Site in Kern County located on land owned by Bureau of Land Management. All four of these sites were historically leased by the respective counties for waste disposal. CalRecycle is considering providing funding and remediation oversight to the land owners of each of these sites for the design and implementation of a closure plan through their Solid Waste Disposal and Codisposal Site Cleanup Program. CalRecycle would like to collaborate with the Water Board so that water quality is protected at these sites.

The Santa Ana and San Diego Regional Water Boards have adopted General Waste Discharge Requirements (General WDR) specifically for the maintenance of and water quality monitoring at CAI sites. A General WDR could eliminate staff time preparing an individual WDR for each CAI site and would significantly simplify and streamline the

¹ California Code of Regulations, title 27, section 20220(a) defines nonhazardous solid waste as "all putrescible and nonputrescible solid, semi solid, and liquid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semi solid wastes and other discarded waste (whether of solid or semi solid consistency); provided that such wastes do not contain wastes which must be managed as hazardous wastes, or wastes which contain soluble pollutants in concentrations which exceed applicable water quality objectives, or could cause degradation of waters of the state (i.e., designated waste)."

application process for dischargers. A General WDR could also allow the Water Board to more effectively and consistently regulate historical waste discharges at CAI sites that threaten water quality. Water Board staff are planning to bring a draft General WDR to the Water Board for consideration of adoption at the regularly scheduled Board meeting in June 2019.



Map 1 - Known locations of CAI sites in the Lahontan Region based on information obtained from CalRecycle's SWIS database.

8. Dairy Status Report – Ghasem Pour-ghasemi

There are seven dairies and three heifer ranches in operation in the Lahontan Region for a total of ten active confined animal facilities (CAFs). Only three active dairies and one closed dairy are currently regulated under waste discharge requirements. Prior to fiscal year 2018/2019, one Water Board staff was responsible for all CAFs. This year, CAFs oversight is divided among four staff in our Wastewater and Agricultural Unit. This way additional staff will become familiar with the operation of CAFs and can assist with these facilities.

In May 2010, Water Board staff prepared a Dairy Strategy containing the following four elements:

- 1. Assess risk to downgradient drinking water receptors and require dairies to provide replacement water to residents whose drinking water wells are polluted by dairy operations;
- 2. Implement source control using appropriate waste control and disposal practices;
- 3. Evaluate effectiveness of these measures through monitoring; and
- 4. Conduct groundwater remediation where beneficial uses are adversely affected.

Past studies near dairy CAFs indicate groundwater pollution downgradient of most facilities. The table below shows the most recent groundwater data available from some CAFs.

Water Board staff have accomplished the first step of the Dairy Strategy by requiring replacement water delivery to affected residents. Step two is partially accomplished as Water Board staff have obtaining voluntary compliance at some facilities. Step three will be covered under a waste discharge requirements (General Order) for all CAFs; Water Board staff are currently working on the General Order and accompanied CEQA document. Depending on the specific provision of a to-be-developed CAF General Order, other regulatory tools such as a Cleanup and Abatement Order (CAO) may be needed to compel remediation of polluted groundwater.

The Water Board has issued five CAOs and has one stipulated agreement in place requiring CAFs to provide replacement water to affected residents (see table below). Approximately 30 residents currently receive replacement drinking water from five existing and closed dairies and a closed heifer ranch that have polluted downgradient residential supply wells. The CAOs require dairy owners to sample residential wells around the dairies every nine months. Replacement drinking water must be provided to any resident within the affected area having nitrate and total dissolved solids concentrations close to and/or over the primary and secondary drinking water standards.

Facility	WDR	Groundwater Pollution	Enforcement Status and Most Recent Nitrate (as N) and Total Dissolved Solids (TDS) Groundwater Concentrations (data below is current as of January 2019)			
Active Dairies						
Harmsen Dairy	No	Yes	 CAO requires residential wells sampling every nine months and providing replacement drinking water to any residents with nitrate and TDS concentrations close to and/or over the drinking water standards. Highest residential well nitrate concentration is 18 mg/L, and TDS concentration is 820 mg/L. Facility recently closed its unlined wash water pond and applies effluent to irrigated crop land. 			
A & H Dairy	Yes	Yes	 No residential well sample data. Highest compliance monitoring well nitrate concentration is 117 mg/L and TDS concentration is 2,720 mg/L. Facility applies effluent to irrigated crop land. 			

Summary of Region 6 Confined Animal Facilities

Facility	WDR	Groundwater Pollution	Enforcement Status and Most Recent Nitrate (as N) and Total Dissolved Solids (TDS) Groundwater Concentrations (data below is current as of January 2019)
Dutch Dairy	Yes	Yes	 Stipulated agreement requires providing bottled water to downgradient residents with nitrate and TDS concentrations close to and/or over drinking water standards. Highest residential well nitrate concentration is 23 mg/L and TDS concentration is 1,800 mg/L. Highest compliance monitoring well nitrate concentration is 130 mg/L and TDS concentration is 2,800 mg/L.
B & E Dairy	Yes	Yes	 No residential well sample data. Highest compliance monitoring well nitrate concentration is 6.0 mg/L and TDS concentration is 430 mg/L. Highest supply well nitrate concentration is 6.7 mg/L and TDS concentration is 660 mg/L.
John Van Leeuwen Dairy	No	Unknown	No residential well sample data.The dairy has unlined wash water disposal ponds.
Hinkley Dairy	No	Yes	 CAO requires sampling of residential wells every nine months and providing replacement drinking water to any residents with nitrate and TDS concentrations close to and/or over the drinking water standards. Highest residential well nitrate concentration is 31.8 mg/L and TDS concentration is 678 mg/L. Facility applies effluent to irrigated crop land.
High Desert Dairy	No	No	No residential well sample data.Facility applies effluent to irrigated crop land.
Active Heife	er Ranche	s	
DVD Heifer Ranch	No	Yes	 CAO requires sampling of residential wells every nine months and providing replacement drinking water to any residents with nitrate and total dissolved solids concentrations close to and/or over the drinking water standards. Highest residential well nitrate concentration is 48.2 mg/L and TDS concentration is 5,300 mg/L. No wash water generated.

Facility	WDR	Groundwater Pollution	Enforcement Status and Most Recent Nitrate (as N) and Total Dissolved Solids (TDS) Groundwater Concentrations (data below is current as of January 2019)
Green Valley Farms	No	Yes	No residential well sample data.No wash water generated.
Alamo Mocho Ranch	No	Unknown	No residential well sample data.No wash water generated.
Closed Fac	ilities		
N & M Dairy	Yes	Yes	 A CAO requires sampling of residential wells every nine months and providing replacement drinking water to any residents with nitrate and TDS concentrations close to and/or over the drinking water standards. Highest residential well nitrate concentration is 15.3 mg/L and TDS concentration is 1,230 mg/L. Furthest residential well (5 miles downgradient) nitrate concentration is 10.5 mg/L and TDS concentration is 989 mg/L. Highest compliance monitoring well nitrate concentration is 11.2 mg/L and TDS concentration is 4,580 mg/L. Dairy ceased operations as of July 2013. CAO issued for cleanup. ACL issued for failure to comply.
Meadow Brook Dairy	No	No	 Dairy closed and permit rescinded in June 2013.
DVD Heifer Ranch (former)	No	Yes	 CAO requires sampling of residential wells every nine months and providing replacement drinking water to any residents with nitrate and total dissolved solids concentrations close to and/or over the drinking water standards. Highest residential well nitrate concentration is 40 mg/L, and TDS concentration is 1,200 mg/L. Moved into former Desert View Dairy location. Corrals and structures removed.