



**EXECUTIVE OFFICER'S REPORT • February 2020**  
 Covers December 16, 2019 –January 15, 2020

---

**Contents**

1. <i>Personnel Report – Eric Shay</i> .....	1
2. <i>Message in a Bottle: Retrieving Data from Hurricane Sandy – Alanna Misico</i> .....	2
3. <i>Illegal Cannabis Site Clean-up Status – Alex Spencer</i> .....	4
4. <i>Town of Truckee On-site Wastewater Disposal System Increased Use – Robert Tucker</i> .....	5
5. <i>Indian Wells Valley Groundwater Authority Meeting – Tom Browne</i> .....	6
6. <i>Crestline Sanitation District - Violations, Collection System Infiltration, Annual Reporting – Mark Lemus</i> .....	8
7. <i>Standing Item - Confined Animal Facility Status Report – Jehiel Cass</i> .....	11
8. <i>Sierra Army Depot PFAS Investigation Scoping Teleconference – John Steude</i> .....	18

*State and Regional*

**1. Personnel Report – Eric Shay**

**New Hires**

- Tiffany Racz, Water Resource Control Engineer, Forestry Unit, South Lake Tahoe. This position will be focused on implementing the Water Board’s elements of recent legislation (SB 901) related to increasing the pace and scale of forest fuels treatments.

**Vacancies** – We are currently recruiting for the following positions:

- C.E.A. (Career Executive Assignment) to serve as the Region’s Assistant Executive Officer.
- Scientific Aid, Cleanup/Site Investigation & Enforcement Unit, South Lake Tahoe. This position assists staff with administering the site cleanup, underground storage tank, land disposal, and enforcement programs; reviewing reports, and maintaining databases; reviews self-monitoring reports for cases, permits and enforcement actions; reviews project files and water quality data to prepare for field inspections and permit updates; assists with field inspections; and reviews California Environmental Quality Act documents.
- Senior Environmental Scientist (Supervisor). This position oversees the Non-Point Source Unit, whose tasks include issues such as grazing, harmful algal blooms,

319(h) grants, Lake Tahoe Total Maximum Daily Load (TMDL), Lake Tahoe nearshore, Mono Lake, and management of our in-house laboratory.

- Engineering Geologist, Department of Defense / Site Cleanup Program Unit, Victorville. This position analyzes threat of pollutants to groundwater and surface waters, reviews technical reports for cleanup strategies, reviews site investigation results, reviews proposed cleanup alternatives to ensure compliance with water quality objectives, prepares enforcement orders, investigates spills, and conducts inspections of cleanup sites and facilities.
- Water Resource Control Engineer, Wastewater Engineering Unit, Victorville. This position provides regulatory oversight of projects involving discharges to ground or surface waters and projects intended to restore and/or enhance water quality.

### Departures

- Ghasem Pour-Ghasemi, Water Resource Control Engineer, Wastewater Engineering Unit, Victorville, has retired.
- Douglas Smith, C.E.A. (Career Executive Assignment), Assistant Executive Officer, South Lake Tahoe, has retired.

## North Lahontan Region

### 2. Message in a Bottle: Retrieving Data from Hurricane Sandy – Alanna Misico

While on vacation last November in the Bahamas with my husband and some friends we stumbled upon a monitoring sensor buried in the sand on the desolate Shroud Cay in the Exuma Cays Land and Sea Park where we had been anchored for the night. Not really knowing what it was, I was able to track down the owners via a bar code on the device and found it belongs to the Royal Netherlands Institute for Sea Research (NIOZ). The team of NIOZ researchers were excited to hear about our discovery and explained that this conductivity and temperature (CT) sensor has been missing since 2012 and potentially still contains valuable data from hurricane Sandy.



Figure 2.1  
Seabird 37 SMP  
CT Sensor 1



Figure 2.2 - Bar code for Seabird Sensor 1

The high accuracy Seabird 37 SMP CT Sensor is made of titanium, weighs roughly 5 kg, and is 50 cm long. It was attached to a benthic lander (see photo below) and was deployed in the Norfolk Canyon off the US coast in the mid-Atlantic August 2012 to collect temperature and salinity data. Benthic Landers typically stay on the ocean floor collecting data (i.e., algal, invertebrate, sediment, meter readings) for up to one year. They are called

up to the ocean surface by means of an acoustic signal and are then located by GPS. This particular lander surfaced prematurely (possibly due to hurricane weather) and the CT sensor at some point became detached from the frame. Due to the durability of the sensor, NIOZ researchers are hopeful that they will be able to retrieve data from the device.



Figure 2.3 - Remains of the Benthic lander frame washed ashore Shroud Cay

NIOZ is an internationally leading marine institute studying estuarine/delta, coastal, and ocean systems, as well as marine microbiology and biogeochemistry.

To learn more about NIOZ and this study

<https://www.nioz.nl/en/about>

<https://oceanexplorer.noaa.gov/explorations/12midatlantic/logs/aug20/aug20.html>

To learn more about Benthic Landers

<https://oceanexplorer.noaa.gov/explorations/12midatlantic/background/benthiclanders/benthiclanders.html>

<https://oceanexplorer.noaa.gov/explorations/19deepsearch/logs/apr14/welcome.html>

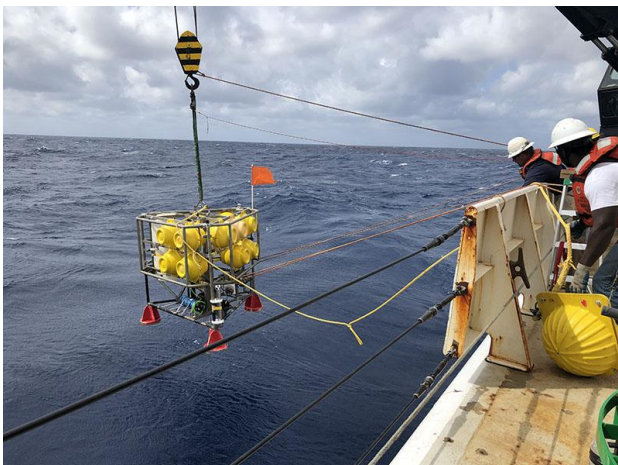


Figure 2.4 - A Benthic lander deployment



### 3. Illegal Cannabis Site Clean-up Status – Alex Spencer

Eastern California Cannabis Regulatory Unit staff Alex Spencer, Emily Cushman, and Eric Taxer participated in search warrant inspections for outdoor cannabis cultivations in unincorporated Los Angeles County (LAC). The inspections were conducted in conjunction with the local sheriff's eradications of illegal cannabis and resulted in initial clean-up and remediation of several sites (on-going clean-up efforts will continue). Currently, outdoor cannabis cultivation is banned in unincorporated LAC, and cultivation on these sites have the potential to be trespass operations. The search warrant inspections were a joint effort between the Water Board, State Water Board Office of Enforcement, CalCannabis, the California Department of Fish and Wildlife, and LAC Sheriff's Office and District Attorney.



Figure3.1 Cultivation area with vegetative cannabis, including a view of a 2,500-gallon irrigation tank.



Figure 3.2 Liquid fertilizers and pesticides used and stored at the site.

Primary threats to water quality from the sites included the direct application of irrigation water with nutrient rich fertilizers, pesticide use, petroleum product storage, and grading

within desert washes. Containers of fertilizers, pesticides, and gasoline were regularly found on these sites, stored exposed to the environment, without secondary containment.



Figure 3.3 Cultivation related waste removed by the landowner after the eradication by LAC Sheriffs

While carrying out the search warrant, LAC Sheriff deputies apprehended several individuals who claimed to be hired workers; none of those apprehended admitted being in primary charge of any cultivation. To determine a responsible party, Water Board staff were able to identify and corroborate landowners of the sites through Water Board GIS parcel data, the online parcel database LandVision, and LAC Assessor’s records. Once identified, staff issued Notices of Violation to solicit response from landowners. While in certain instances remediation is still ongoing, some restoration was carried out rapidly. This included removal of cultivation related wastes, removal of potential discharge threats, and revegetation of areas that had been cleared for cultivation with native plants. The photos included in this article are from a single site from eradication through remediation.



Figure 3.4 Replacement vegetation from the local nursery, planted by the landowner.

#### 4. Town of Truckee On-site Wastewater Disposal System Increased Use – Robert Tucker

On January 3, 2020, Water Board staff member, Rob Tucker, met with the Town of Truckee Planning Department (Truckee) Planning Manager Jenna Gatto, Associate

Planner Yumie Dahn, and Assistant Planner Laura Dabe: and from the Nevada County Environmental Health Department (EHD), Director Amy Irani and Environmental Health Specialist, Jo Paden. The meeting was about secondary units or accessory dwelling units (ADU) on parcels with an existing single-family home using an onsite wastewater disposal system. On December 12, 2019, the Truckee Planning Commission changed the Truckee Municipal Code and removed its requirement for a minimum of three (3) acres or more to authorize a building permit for an ADU on a parcel using an onsite wastewater disposal system. The requirement was replaced with the following:

*A secondary unit shall not be allowed on a parcel that is serviced by an on-site septic system unless approval is obtained from the Nevada County Environmental Health Department and the unit complies with Lahontan Regional Water Quality Control Board.*

In discussion with Truckee and EDH staff, Mr. Tucker pointed out how the Water Board's prohibition for the use of individual domestic wastewater systems in the Truckee area cites the Subdivision Map Act and that ADUs do not trigger a subdivision, thus circumventing the intent of the Water Board prohibition by allowing ADUs and increasing onsite wastewater disposal within existing subdivisions beyond what the Water Board prohibition would authorize. It was also discussed that the removal of Truckee's restriction could create some confusion in that a project proponent may expend funds to develop plans and pay for a Truckee building permit and then be denied by EHD or the Water Board. All present in the meeting felt it appropriate for Truckee staff to direct projects that will use onsite wastewater disposal to the County first, prior to accepting fees and plans for a Truckee building permit.

In reviewing EDH procedures for an ADU that would increase the use of an existing system or require installation of a second system, EDH felt that many of the smaller lots in Truckee may not have enough land to meet all set back requirements and other code requirement already in place for the Truckee area. However, there could be situations where proposed ADUs could meet County requirements on parcels smaller than 2.5 acres, which historically was needed to obtain a variance from the Water Board prohibition to proceed. EDH agreed to request a review by the Water Board whenever an ADU or secondary unit would be on a parcel smaller than 2.5 acres, until the Water Board resolves this situation with its prohibition.

Several new laws have been enacted to address California's housing crisis, including statewide standards for local ADU development. These standards will pave the way for an increase in ADU development throughout the state. The State and Regional Boards are assessing these new laws and to determine how they affect the State Water Board's Onsite-Wastewater Treatment Systems Policy. I have requested staff to prepare a staff report on ADU associated with on-site wastewater disposal systems to be presented to the Water Board this summer.

## *South Lahontan Region*

### **5. Indian Wells Valley Groundwater Authority Meeting – Tom Browne**

On Thursday, November 21, 2019, Victorville Water Board staff engineer Tom Browne attended the regular meeting of the Indian Wells Valley Groundwater Authority (IWW-GA) at Ridgecrest City Hall. The IWW-GA was formed in 2015 in response to the Sustainable Groundwater Management Act (SGMA) bill passed in 2014. SGMA requires all "severely over-drafted" groundwater basins in the State to develop a groundwater sustainability plan (GSP) for water sustainability for the decades to come. The GSP is due



January 31, 2020. The IWV is the only groundwater basin in the Lahontan Region that is classified as “severely over-drafted.” This was the first meeting of the IWV-GA attended by staff from the Lahontan Region, and approximately 25 people came to this meeting.

The Board of Directors for the IWV-GA includes people from China Lake Naval Air Weapons Station (CLNAWS); City of Ridgecrest; Kern County; San Bernardino County; and the largest water supplier in the area, the Indian Wells Valley Water District (IWV-WD). The IWV-WD provides potable water to most of the 28,940 residents of Ridgecrest, but there are other small water purveyors in the Indian Wells Valley regulated by the State Water Board Division of Drinking Water. The IWV-GA has these sitting members: Ron Kicinski, Board Member of the IWV-WD and Chair of the IWV-GA; Thomas Rickauskas, Bureau of Land Management (BLM); Commander Peter Benson of CLNAWS; Steve Johnson, Water Resources Manager; Mick Gleason, Kern County Supervisor; Don Zdeba, General Manager of IWV-WD; Scott Hayman, Board Member of the City of Ridgecrest; Bob Page, Registrar for San Bernardino County; Scott Hayes, City of Ridgecrest; and John Vallejo, Inyo County. Keith Lemieux is a special counsel (attorney) hired by the IWV-GA to perform legal services.

The main item on the agenda was how to raise \$500,000 to pay for the past two years of budget overruns. Of that, \$400,000 is a debt to Stetson Engineering, an engineering firm based in Covina, California. That amount covers Stetson’s costs to date in drafting the GSP. Information obtained from the IWV-GA Technical Advisory Committee (TAC) shows how the group plans to achieve “sustainable yields” by approximately year 2035 by employing a complex scenario of voluntary conservation measures and incentives for the farmers to reduce usage. The large farmers currently pay \$30 per acre-foot to support the IWV-GA and have no voting member on the Board of Directors to represent them. At this meeting, the IWV-GA board proposed charging the large farmers \$75 per acre-foot pumped per year to help pay for the budget overruns and to help pay for completing the plan. The IWV-WD contributes to the IWV-GA by charging its customers approximately \$2 per connection per month. Searles Valley pays a fixed, unknown amount per acre-foot, and CLNAWS pays nothing. Instead, CLNAWS offers “in kind” non-financial support, but it was unclear what these contributions were.

On a technical side note, groundwater recharge has been a controversial issue between the US Geologic Survey (USGS) and local experts. The USGS believes groundwater in the IWV is recharged primarily along the toe of the Sierra Nevada and secondarily at the toe of Black Mountain. Other noted experts such as Dr. Carl Austin (now deceased) claim the IWV receives a significant amount of deep recharge from the Rose Valley aquifer from the north. Research done by David Williams, in his Master of Science thesis while at the Colorado School of Mines, supports the claim of Dr. Austin.

Water Board staff recommends continuing to attend the TAC meetings and the monthly IWV-GA public meetings and to provide updates to the Water Board, as appropriate.

Interested readers can find more details on declining water levels in the IWV at <https://iwvga.org/tac-1>.



Figure 5.1 - Photo: Indian Wells Valley Groundwater Authority board members.

## 6. Crestline Sanitation District - Violations, Collection System Infiltration, Annual Reporting – *Mark Lemus*

Water Board staff has requested Crestline Sanitation District (District) to begin submitting periodic annual reports describing the District's actions to address sewer collection system infiltration and inflow (I/I). Inflow is the result of illicit connections such as a house storm drain connected to sewer laterals. Infiltration occurs when groundwater enters the sewer system through defective pipe connections and broken manholes. These reports are due in May each year.

In July 2019, Water Board staff issued a Notice of Violation (NOV) to the District regarding 89 flow exceedance violations from the Huston Creek and Seeley Creek Wastewater Treatment Plants. These violations occurred during the recent winters of higher than normal precipitation. The NOV requested the District to evaluate these facilities' capacity considering the increasing number of flow related violations. While no numeric constituent effluent limitation violations occurred during this period, Water Board staff were concerned that the two facilities had diminished treatment ability during high flow events.

In response to the NOV, the District submitted a technical report addressing these concerns and describing plans to prevent flow exceedances. The District maintains that the flow violations were the result of long standing (I/I) issues within the sewer collection system, and not related to treatment plant capacity. Crestline has had an average population increase of only 0.5 percent a year, and neither of the two facilities are expected to reach capacity in the foreseeable future. The District provided information showing that recent precipitation events where large amounts of water falling within the watershed area correspond to elevated sewer collection system flow associated with I/I.

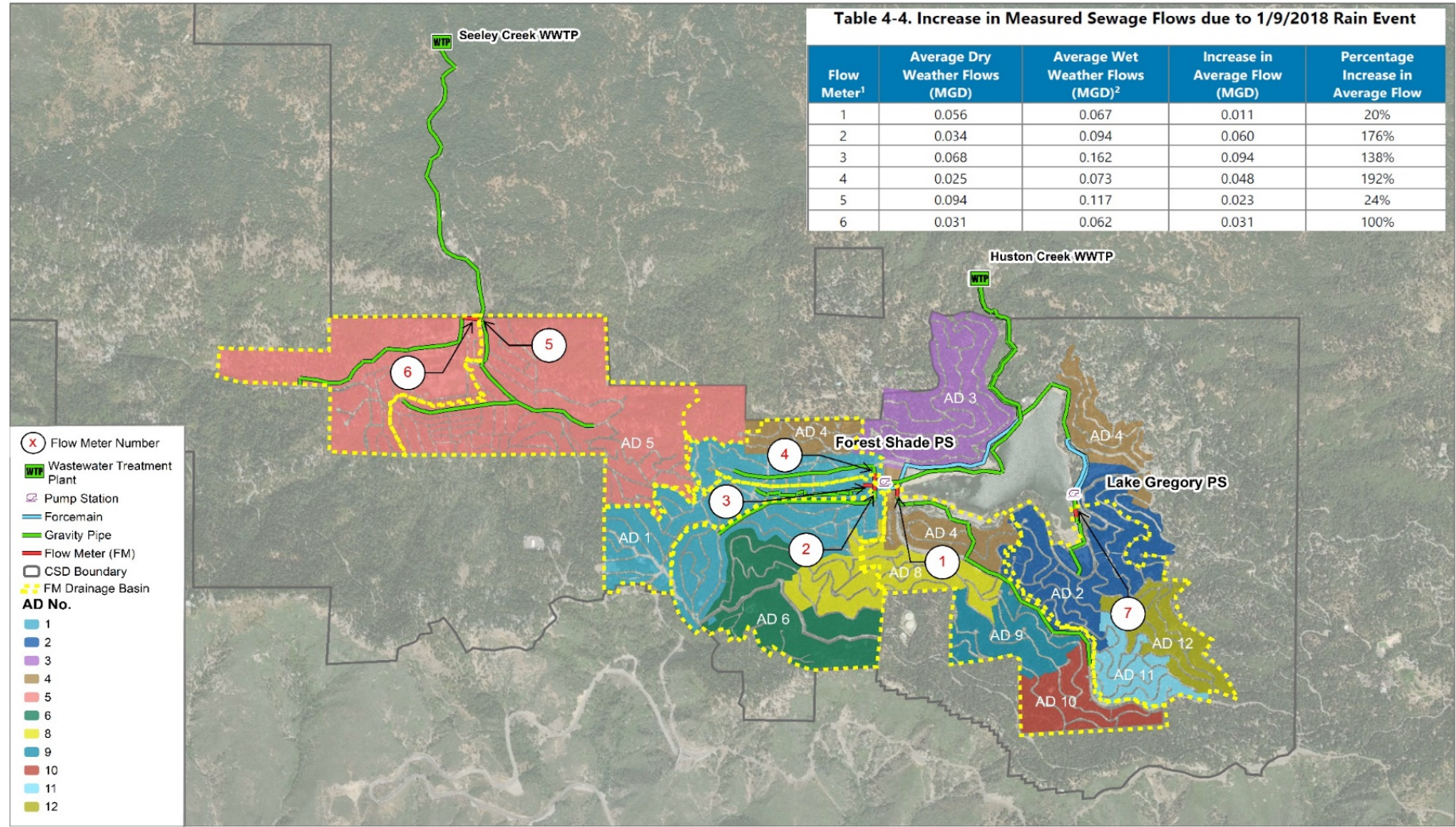


Since becoming an independent District in 2010, I/I reduction is a top priority. Approximately one-quarter of the District's operating budget is allocated to slip-lining collection system segments, repairing pipes, and manhole rehabilitation. In the District's 2018 Wastewater Master Plan, several sub-basins within the collection system were investigated with flow metering devices to help differentiate average dry weather flow and wet weather flow increases. During one such rain event in January 2018, there was an increase of over 100% flow in three separate sewer collection system line segments (see the attached map of the Crestline Sanitation Assessment Districts). Such efforts have allowed the District to identify problematic areas within their service area and provide focused I/I reduction efforts.

Water Board staff believes the District's efforts and general funding allocation is correct and I/I investigation and reduction should be a high priority. The increased annual reporting will help Water Board staff evaluate the effectiveness of the District's efforts. The following are some of the items the District will be reporting annually.

- Continued measurement of sewer trunk line flows during wet weather events to isolate sewer collection lines that suffer from I/I.
- Analysis that yearly repairs are having a measurable difference in reducing I/I.
- Assessment of the work completed in the previous year.
- Identification of work planned for the upcoming year.
- Analysis of costs and budgeting adjustments to continue I/I reduction.
- Efforts to increase identification, correction, and enforcement of illicit connections discovered.

These annual reports are requested for the next 5 years. If Water Board staff considers that the District is failing to sufficiently reduce I/I or continues to have persistent wet-weather flow violations, then further formal enforcement actions may be recommended.



SOURCE:  
**DUDEK** 0 1,000 2,000 Feet

Crestline Sanitation District Final Wastewater Master Plan Prepared by DUDEK, 2018

Figure 4-2: Flow Monitoring Locations  
 Crestline Sanitation District

## 7. Standing Item - Confined Animal Facility Status Report – Jehiel Cass

The Water Board currently regulates three confined animal facilities (CAFs) that are active milking dairies and one closed dairy with individual waste discharge requirements (WDRs), has issued five CAFs Cleanup and Abatement Orders (CAOs) to provide replacement drinking water, and requires one CAF to provide replacement drinking water with a settlement agreement (SA). Currently, there are seven dairies and three heifer ranches in the Lahontan Region. At heifer ranches, young female cows are typically raised from about birth to 2 years old until they have their first calf and begin a milking life at a dairy. Thus, not all CAFs are currently regulated by the Lahontan Water Board.

Water Board staff considers a CAF to have more than 50 Animal Units or 500 or more animals, whichever is less. One Animal Unit is defined as equaling 1,000 pounds weight of animal(s), or essentially one mature cow.

Waste produced by CAFs is high in organic material and contains elevated salt. The two dominant waste streams are manure from all CAFs, and liquid wash water only from active milking dairies. The two primary constituents that represent this waste load are nitrate and total dissolved solids (TDS). The primary drinking water standard for nitrate as nitrate is 10 milligrams per liter (mg/L). The secondary drinking water standard for TDS is a three-part standard; 500 mg/L (recommended), 1,000 mg/L (upper), and 1,500 mg/L (short-term).

### *Dairy Strategy*

In May 2010, Water Board staff developed a recommended strategy to address groundwater pollution impacts from large CAF operations. The strategy contained four components that are prioritized in the following manner.

#### Priority 1 - Assess and address risk to downgradient [drinking water] receptors from exposure to polluted groundwater.

In 2010 and 2011, Water Board staff sampled residential wells adjacent to CAFs. After reviewing the data results, staff determined that some CAFs had impacted neighboring residential wells contributing to elevated nitrate or TDS over the drinking water standard. As a result, the Water Board issued five CAOs and one SA to CAFs, requiring each facility to conduct periodic ongoing residential well sampling and provide replacement drinking water until concentrations were less than the drinking water standard. Currently, one CAO is being considered for amendment.

The CAOs require CAFs to sample residential wells within a defined area adjacent to the facility every nine months. Replacement drinking water must be provided to any resident having nitrate and total dissolved solids concentrations close to and/or over the primary and secondary drinking water standards.

Currently, about 29 residents are receiving replacement water as result of these actions. On occasion, CAFs have encountered difficulties in obtaining permission to access and sample some residential wells.

#### Priority 2 – Identify appropriate source controls and require phased implementation of suitable waste minimization, control, and disposal practices under WDRs or a Conditional Waiver.

Water Board staff have worked with many CAF operators to achieve significant improvements by voluntarily implementing best management practices (BMPs) to protect receiving groundwater quality. Significantly, several active milking dairies have eliminated unlined wash water disposal percolation ponds. These ponds are the largest single point



source of contaminants to groundwater from CAF operations. One CAF continues to dispose wash water into an unlined percolation pond. Two CAFs have insufficient land area to adequately dispose of wash water without over application to crops allowing for deep percolation to groundwater.

A General Order (WDRs) is being prepared and is intended to cover all CAFs and includes confined animals of all types (horses, poultry, swine, etc.). The General Order will require source controls and appropriate waste control and disposal practices. Prior to public release of the General Order, staff intend to conduct outreach to all existing CAF operators and request their comments on the draft General Order. The General Order will contain several phased milestones for BMP implementation that will require significant staff oversight resources.

*Priority 3 – Ensure adequate monitoring to evaluate the extent of affected groundwater and effectiveness of the source control measures implemented.*

Currently regulated CAFs submit periodic self-monitoring reports. After issuance of the General Order, all CAFs will be required to submit self-monitoring reports. Staff will continue to review submitted reports and assess BMP effectiveness. In conjunction, staff will review other groundwater data in the vicinity of CAFs to determine the extent that regional groundwater quality improvements are made.

As planned, the General Order will require some form of groundwater monitoring at all CAFs. Each operation will be separately evaluated to determine the appropriate monitoring for that facility.

*Priority 4 – Require groundwater remediation where beneficial uses are impaired.*

After the General Order is adopted, and CAFs have implemented appropriate BMPs, staff will review submitted self-monitoring reports and evaluate monitoring data to further identify where groundwater quality objectives are not being met. Water Board staff will work cooperatively with CAF operators to develop effective groundwater remediation plans, which may be implemented voluntarily or under CAOs requiring remediation. At CAFs where groundwater pollution is already identified, staff will continue to monitor and evaluate BMP effectiveness. In some situations, a cooperative regional approach may be considered as pollutant sources may be present from adjacent active or historical agricultural operations. The Water Board may also consider other risk-based alternatives to traditional groundwater pump-and-treat technologies, as warranted.

*Facility Status*

As previously mentioned, the draft CAF General Order is intended to regulate all CAFs regardless of animal type. Water Board staff are aware of two wild horse and burro CAFs operated by the US Bureau of Land Management: one near Susanville and the other near Ridgecrest. Additionally, there about five poultry farms in the South Lahontan Basin that have historically operated. If currently in operation, then these facilities may qualify as CAFs subject to the CAF General Order. There may be some horse stable facilities that qualify as CAFs, such as the Tahoe-Donner Equestrian Center near Truckee. Slaughterhouse operations would also be covered by the General Order, although none are known to exist in the Lahontan Region at this time.

Once the General Order is adopted, these other qualifying CAF facilities may need to apply for coverage.

Facilities regulated by WDRs have onsite monitoring wells that must be periodically sampled. Facilities regulated by CAO or a SA must periodically sample neighboring residential drinking water wells within a defined area.

The following tables describe the status of each CAF operation in the Lahontan Region.

**Table 1. Active Milking Dairy CAFs in the Lahontan Region**

Facility	Regulated by WDRs / Monitoring Results	Replacement water required by CAO/SA	Groundwater Pollution?	Status as of January 2020
Harmsen Dairy	<ul style="list-style-type: none"> <li>• No WDRs.</li> <li>• No monitoring wells installed.</li> </ul>	<ul style="list-style-type: none"> <li>• CAO No. R6V-2011-0058</li> <li>• Highest residential well nitrate is 19 mg/L and TDS is 870 mg/L.</li> <li>• 3 residences receive replacement water.</li> </ul>	Yes	<ul style="list-style-type: none"> <li>• About 350 head onsite.</li> <li>• Wash water is blended with groundwater and applied to irrigated crop land.</li> <li>• Dry manure is used onsite or hauled offsite to irrigated cropland.</li> </ul>
A & H Dairy	<ul style="list-style-type: none"> <li>• Board Order No. R6V-2002-0022</li> <li>• Highest monitoring well nitrate is 135 mg/L and TDS is 2,740 mg/L.</li> </ul>	<ul style="list-style-type: none"> <li>• No CAO or SA.</li> <li>• No residential well sampling required.</li> </ul>	Yes	<ul style="list-style-type: none"> <li>• About 3,197 head onsite.</li> <li>• Wash water is blended with groundwater and applied to irrigated crop land.</li> <li>• Dry manure is used onsite or hauled offsite to irrigated cropland.</li> </ul>
Dutch Dairy	<ul style="list-style-type: none"> <li>• Board Order No. 6-95-0002</li> <li>• Highest monitoring well nitrate is 85 mg/L and TDS is 2,600 mg/L.</li> </ul>	<ul style="list-style-type: none"> <li>• SA as of August 24, 2016</li> <li>• Highest residential well nitrate is 29 mg/L and TDS is 2,000 mg/L.</li> <li>• 1 residence receives replacement water.</li> </ul>	Yes	<ul style="list-style-type: none"> <li>• About 1,250 head onsite.</li> <li>• Wash water is over applied to pastureland.</li> <li>• Dry manure is hauled offsite to irrigated cropland.</li> </ul>
B&E Dairy	<ul style="list-style-type: none"> <li>• Board Order No. 6-96-0009</li> <li>• Highest monitoring well nitrate is 10 mg/L and TDS is 710 mg/L.</li> </ul>	<ul style="list-style-type: none"> <li>• No CAO or SA.</li> <li>• No residential well sampling required.</li> </ul>	Yes	<ul style="list-style-type: none"> <li>• About 2,300 head onsite.</li> <li>• Wash water is over applied to pastureland.</li> <li>• Dry manure is used onsite or hauled offsite to irrigated cropland.</li> </ul>



Facility	Regulated by WDRs / Monitoring Results	Replacement water required by CAO/SA	Groundwater Pollution?	Status as of January 2020
Van Leeuwen Dairy	<ul style="list-style-type: none"> <li>• No WDRs.</li> <li>• No monitoring wells installed.</li> </ul>	<ul style="list-style-type: none"> <li>• No CAO or SA.</li> <li>• No residential well sampling required.</li> </ul>	Unknown	<ul style="list-style-type: none"> <li>• About 1,100 head onsite.</li> <li>• Wash water is disposed to unlined percolation pond.</li> <li>• Dry manure is used onsite or hauled offsite to irrigated cropland.</li> </ul>
Hinkley Dairy	<ul style="list-style-type: none"> <li>• No WDRs.</li> <li>• No monitoring wells installed.</li> </ul>	<ul style="list-style-type: none"> <li>• CAO No. R6V-2011-0059</li> <li>• Highest residential well nitrate is 38.2 mg/L and TDS is 834 mg/L.</li> <li>• 3 residences receive replacement water.</li> </ul>	Yes	<ul style="list-style-type: none"> <li>• About 1,260 head onsite.</li> <li>• Wash water is blended with groundwater and applied to irrigated crop land.</li> <li>• Dry manure is used onsite or hauled offsite to irrigated cropland.</li> </ul>
High Desert Dairy	<ul style="list-style-type: none"> <li>• No WDRs.</li> <li>• No monitoring wells installed.</li> </ul>	<ul style="list-style-type: none"> <li>• No CAO or SA.</li> <li>• No residential well sampling required.</li> </ul>	Unknown	<ul style="list-style-type: none"> <li>• About 7,000 head onsite.</li> <li>• Little to no wash water is produced.</li> <li>• Dry manure is used onsite or hauled offsite to irrigated cropland.</li> </ul>
Van Leeuwen Dairy	<ul style="list-style-type: none"> <li>• No WDRs.</li> <li>• No monitoring wells installed.</li> </ul>	<ul style="list-style-type: none"> <li>• No CAO or SA.</li> <li>• No residential well sampling required.</li> </ul>	Unknown	<ul style="list-style-type: none"> <li>• About 1,100 head onsite.</li> <li>• Wash water is disposed to unlined percolation pond.</li> <li>• Dry manure is used onsite or hauled offsite to irrigated cropland.</li> </ul>
Hinkley Dairy	<ul style="list-style-type: none"> <li>• No WDRs.</li> <li>• No monitoring wells installed.</li> </ul>	<ul style="list-style-type: none"> <li>• CAO No. R6V-2011-0059</li> <li>• Highest residential well nitrate is 38.2 mg/L and TDS is 834 mg/L.</li> <li>• 3 residences receive replacement water.</li> </ul>	Yes	<ul style="list-style-type: none"> <li>• About 1,260 head onsite.</li> <li>• Wash water is blended with groundwater and applied to irrigated crop land.</li> </ul>

Facility	Regulated by WDRs / Monitoring Results	Replacement water required by CAO/SA	Groundwater Pollution?	Status as of January 2020
				<ul style="list-style-type: none"> <li>• Dry manure is used onsite or hauled offsite to irrigated cropland.</li> </ul>
High Desert Dairy	<ul style="list-style-type: none"> <li>• No WDRs.</li> <li>• No monitoring wells installed.</li> </ul>	<ul style="list-style-type: none"> <li>• No CAO or SA.</li> <li>• No residential well sampling required.</li> </ul>	Unknown	<ul style="list-style-type: none"> <li>• About 7,000 head onsite.</li> <li>• Little to no wash water is produced.</li> <li>• Dry manure is used onsite or hauled offsite to irrigated cropland.</li> </ul>

**Table 2. Active Non-milking CAFs in the Lahontan Region**

Facility	Regulated by WDRs / Monitoring Results	Replacement water required by CAO/SA	Groundwater Pollution?	Status as of January 2020
DVD Heifer Ranch	<ul style="list-style-type: none"> <li>• No WDRs.</li> <li>• No monitoring wells installed.</li> </ul>	<ul style="list-style-type: none"> <li>• CAO No. R6V-2008-0034</li> <li>• Highest residential well nitrate is 6.6 mg/L and TDS is 880 mg/L.</li> <li>• No residences receive replacement water.</li> </ul>	Yes	<ul style="list-style-type: none"> <li>• About 900 head onsite.</li> <li>• No wash water is generated.</li> <li>• Dry manure is used onsite or hauled offsite to irrigated cropland.</li> </ul>
Green Valley Foods	<ul style="list-style-type: none"> <li>• No WDRs.</li> <li>• No monitoring wells installed.</li> </ul>	<ul style="list-style-type: none"> <li>• No CAO or SA.</li> <li>• No residential well sampling required.</li> </ul>	Unknown	<ul style="list-style-type: none"> <li>• About 1,400 head onsite.</li> <li>• No wash water generated.</li> <li>• Dry manure is used onsite or hauled offsite to irrigated cropland.</li> </ul>
Alamo Mocho Ranch	<ul style="list-style-type: none"> <li>• No WDRs.</li> <li>• No monitoring wells installed.</li> </ul>	<ul style="list-style-type: none"> <li>• No CAO or SA.</li> <li>• No residential well sampling required.</li> </ul>	Unknown	<ul style="list-style-type: none"> <li>• About 1,000 head onsite.</li> <li>• No wash water generated.</li> <li>• Dry manure is used onsite or hauled offsite to irrigated cropland.</li> </ul>

**Table 3. Recently Closed CAFs in the Lahontan Region**

Facility	Regulated by WDRs / Monitoring Results	Replacement water required by CAO/SA	Groundwater Pollution?	Status as of January 2020
N&M Dairy	<ul style="list-style-type: none"> <li>• Board Order No. 6-94-0062</li> <li>• Highest monitoring well nitrate is 10.3 mg/L and TDS is 4,650 mg/L.</li> </ul>	<ul style="list-style-type: none"> <li>• CAO No. R6V-2011-0055</li> <li>• Highest residential well nitrate is 20.5 mg/L and TDS is 1,970 mg/L.</li> <li>• 17 residences receive replacement water.</li> </ul>	Yes	<ul style="list-style-type: none"> <li>• Facility closed in July 2013.</li> </ul>
Meadowbrook Dairy	<ul style="list-style-type: none"> <li>• No WRDs.</li> <li>• No monitoring wells installed.</li> </ul>	<ul style="list-style-type: none"> <li>• No CAO or SA.</li> <li>• No residential well sampling required.</li> </ul>	No	<ul style="list-style-type: none"> <li>• Facility closed in June 2013.</li> </ul>
DVD Heifer Ranch (former)	<ul style="list-style-type: none"> <li>• No WDRs.</li> <li>• No monitoring wells installed.</li> </ul>	<ul style="list-style-type: none"> <li>• CAO No. R6V-2011-0057</li> <li>• Highest residential well nitrate is 44 mg/L and TDS is 1,200 mg/L.</li> <li>• 5 residences receive replacement water.</li> </ul>	Yes	<ul style="list-style-type: none"> <li>• Facility closed in 1991.</li> </ul>



## 8. Sierra Army Depot PFAS Investigation Scoping Teleconference – John Steude



Figure 8.1 - Source: <https://www.goarmy.com/careers-and-jobs/browse-career-and-job-categories/legal-and-law-enforcement/firefighter.html>

A conference call was held on January 9, 2020 with staff representing the United States (U.S.) Army, Department of Toxic Substances Control, State Water Board, and Lahontan Water Board to discuss the scope of investigation activities at the Sierra Army Depot (SIAD) for a class of emerging contaminants known as per- and poly-fluoroalkyl substances (PFAS). PFAS compounds are a component in Aqueous Film Forming Foam (AFFF) used to fight fuel-based fires. PFAS compounds have recently become a rapidly evolving environmental health concern in drinking water across the nation, primarily at fire-fighting training facilities where PFAS have been applied repeatedly in the same location over many years.

PFAS compounds were detected in 2017 at SIAD in a public supply well (PSW-08) above the United States Environmental Protection Agency Health Advisory Limit of 70 parts per trillion for perfluorooctanoic acid (PFOA). SIAD ceased providing drinking water to the public from PSW-08 in 2017 and began investigating the extent of PFAS compounds in the environment and methods for treating drinking water for PFAS. The U.S. Army has assigned a high priority to the PFAS issues at SIAD and has provided funding to conduct a Preliminary Assessment (PA) and Site Inspection (SI) for PFAS at SIAD.

The three main drinking water supply wells at SIAD are PSW-05, PSW-08, and PSW-12. Initial data indicates drinking supply wells PSW-05 and PSW-12 have not been impacted by PFAS. So far, data indicates only PSW-08 has been impacted by PFAS.

The purpose of the conference call was to provide California regulators with a status report and to discuss the path forward for the on-going PFAS investigation at SIAD. The U.S. Army provided a review of the PA findings and a schedule for the SI phase of the investigation. The PA included an in-depth records search, visiting 15 sites of potential interest, and conducting 19 interviews. A list of 11 areas of potential interest (AOPIs) were identified during the PA. These AOPIs include former AFFF storage facilities, a current fire-fighting training facility, a fire station, and Amedee Airfield.

Water Board staff requested additional information on two former fire-fighting training facilities: (1) the former “Old Fire-Fighting Training Facility” (OFFTF) located on Tahoe Ave. in Herlong and (2) the former “Existing Fire-Fighting Training Facility” (EEFTF) located on Chewing Gum Road in Herlong. U.S. Army representatives informed Water Board staff these two former-fighting training facilities are no longer on U.S. Army property because of land transfers pursuant to the federal Base Realignment and Closure (BRAC) Act. Therefore, these sites were not included as AOPIs in the current PA. The EEFTF is located on land transferred to the Federal Correctional Institute (FCI) at Herlong and the OFFTF is located on land transferred to the Susanville Indian Rancheria. U.S. Army representatives stated they are working on how to address these sites given their current programmatic constraint of working within the base boundaries. The U.S. Army representatives stated they will include documentation about the two-former fire-fighting training facilities in the PA/SI report and will continue to seek a programmatic way to address these sites in the future.

Future milestones for the U.S. Army are: (1) completion of PA/SI field work by May 2020; (2) preparation of a draft final PA/SI report for regulatory review by the end of May 2020; (3) and the preparation of a final PA/SI report by the Fall of 2020.