



06/10/22

**Bishop Area Wastewater Authority – Revised Report of Waste Discharge**  
**Form 200 Section VI**  
October 2021

The Bishop Area Water Authority (BAWA) is a joint power authority (JPA) formed between the City of Bishop and the Eastern Sierra Community Service District (ESCSA). Both the City of Bishop and the ESCSD operate municipal wastewater treatment plants located adjacent to one another in Bishop, California in the Owens River Valley. The Sierra Nevada Mountains lie to the west of the valley and the White Mountains lie to the east of the valley. Both plants consist of a primary clarifier followed by an aerated and partially mixed lagoon system that produce undisinfected secondary treated effluent that has historically been disposed of via land application by flood irrigation of pasture for non-dairy cattle. Both the City of Bishop and ESCSD have percolation/evaporation ponds available as an alternative means of effluent disposal, though irrigation is the primary means of disposal during irrigation season. Flood irrigation is currently a joint operation between the City of Bishop and the ESCSD and consists of overlapping irrigation facilities on approximately 105 acres of land. The City of Bishop owns approximately 40 acres of the flood irrigation land with the Los Angeles Department of Water and Power owning the remaining land.

The proposed recycled water project will continue to provide undisinfected secondary effluent disposal via irrigation of non-food pasture crops, however the application of recycled water for irrigation will change from the historic practice of flood irrigation to pressurized spray irrigation (sprinklers). A pressurized spray irrigation system will provide more efficient and consistent application of recycled water to the pasture crops at a rate that more closely matches the agronomic rate than can be achieved by flood irrigation.

**1. Facility Information**

- a. The City of Bishop’s wastewater treatment plant has a permitted capacity of 1.6 million gallons per day (MGD), with an annual average flow of 0.697 MGD, a maximum daily flow of 0.866 MGD, a minimum daily flow of 0.607 MGD, an instantaneous peak daily flow of 1.21 MGD and an instantaneous minimum daily flow of 0.358 MGD [1].

The Eastern Sierra Community Service District’s (ESCSA) wastewater treatment plant has a permitted capacity of 0.85 MGD, with an annual average flow of 0.703 MGD, a maximum daily flow of 0.92 MGD, a minimum daily flow of 0.512 MGD, an instantaneous peak daily flow of 1.36 MGD and an instantaneous minimum daily flow of 0.287 MGD [1]. The two plants treat a total cumulative flow of approximately 1.5 MGD under average day conditions. The average effluent total nitrogen from the ESCSD treatment plant is 14.8 milligrams per liter (mg/L) [2]. The average effluent



- total nitrogen from 2019 through 20201 for the City of Bishop treatment plant is 24 mg/L.
- b. Please find a facility schematic in Figure 1 in Appendix A. Site maps for the facility, irrigation fields, groundwater monitoring wells and overall facility are provided in Figures 2, 3, 4 and 5, respectively.
  - c. The City of Bishop's treatment process consists of a headworks facility with screening and grit removal, primary clarification, and three lagoons operated in series. The first pond, Pond 1, is a partially mixed aerated lagoon with baffle curtains. Polishing Ponds 2 and 3 follow Pond 1. From Pond 3, flow enters Pond 4 at which point it can be land applied or be disposed of via Ponds 5 and 6. The accumulated sludge in the primary clarifiers goes to a digester and then to drying beds for dewatering before disposal at a landfill. The ESCSD's treatment process, similar to the City of Bishop's treatment process, consists of a headworks facility with screening and grit removal, primary clarification, and a single aerated and partially mixed lagoon. Lagoon effluent is either land applied or disposed of in ESCSD's Ponds 1, 2, and 3. Sludge from ESCSD's primary clarifiers goes to a digester and then is dewatered in drying beds prior to disposal at a landfill [2].
  - d. Site maps for the facility, irrigation fields, groundwater monitoring wells and overall facility are provided in Figures 2, 3, 4 and 5 in Appendix A, respectively.



- e. The City of Bishop’s treatment facility and the ESCSD treatment facility are both on parcel number 0130200600 [2].
- f. The City of Bishop’s wastewater treatment plant consists of primary clarification followed by three lagoons operated in series. The lining of the treatment lagoons consists of 1 foot of material, but the source and quality of the material is unknown. A leakage test was performed on Pond 2 in 2015 in accordance with the State of Oregon’s Environmental Quality Guidelines. During the leakage test, Pond 2 was isolated so that no flows came in or out of the basin, and the water level in Pond 2 was monitored. From December 17, 2015 to January 15, 2016, the water level dropped 0.04 feet. Precipitation, wind speed, and solar radiation measurements were obtained during this time to determine the evaporation. The calculated evaporation rate exceeded the water level drop, indicating that there is no leakage in Pond 2. A leakage test was not performed for Ponds 1 and 3 [1]. The characteristics for Ponds 1, 2 and 3 are included in Table 1 below [1].

**Table 1: City of Bishop Treatment Pond Characteristics**

Pond	Length (ft)	Average Pond Width (ft)	Depth (ft)	Assumed Side Slope	Surface Area (ac)	Volume (MG)	Detention Time (Days)
Pond 1	913	275	6.5	3:1	5.75	11.1	13.9
Pond 2	605	358	6.5	3:1	5	9.6	12
Pond 3	925	260	6.5	3:1	5.5	10.7	13.4

The City of Bishop’s percolation/evaporation ponds have the hydraulic capacities as shown in Table 2 below [2].

**Table 2: City of Bishop Percolation/Evaporation Pond Characteristics**

Pond	Depth (ft)	Surface Area (ac)	Volume (MG)
Pond 4	7	4.9	11.2
Pond 5	7	4.3	9.9
Pond 6	7	8.7	19.9

The ESCSD’s wastewater treatment facility consists of primary clarification followed by a treatment lagoon. The treatment lagoon in the ESCSD wastewater treatment plant has a 1-foot thick lining material made of native loamy material excavated from the area of the ESCSD’s percolation/evaporation ponds. The effectiveness of this liner is unknown [1]. Table 3 below contains the lagoon characteristics of the ESCSD’s aerated lagoon [2].



**Table 3: ESCSD Treatment Pond Characteristics**

Pond	Length (ft)	Average Pond Width (ft)	Depth (ft)	Assumed Side Slope	Surface Area (ac)	Volume (MG)	Detention Time, Days
Pond 1	360	340	10	3:1	2.81	7.7	11

The ESCSD's percolation/evaporation ponds have the hydraulic capacities described in Table 4 below [2].

**Table 4: ESCSD Percolation/Evaporation Pond Characteristics**

Pond	Depth (ft)	Surface Area (ac)	Volume (MG)
Pond 1	5	14.5	23.6
Pond 2	5	14.8	24
Pond 3	5	14.9	24.3

- g. The sludge handling process for the City of Bishop's wastewater treatment plant takes sludge from the two primary clarifiers to the east and west digesters. The digested sludge is then dewatered in sludge drying beds prior to disposal. Each year, the City of Bishop exports approximately five to six 5-yard truckloads of dried sludge to the Inyo County landfill.

The sludge handling process for the ESCSD wastewater treatment consists of taking the sludge from the one primary clarifier to a digester. After the digester, the sludge is dewatered in a sludge drying bed prior to disposal [2]. From 2020 through August of 2021, ESCSD disposed of 50.47 tons of sludge.

- h. Table 5 provides the operator certification level for the chief plant operator for the City of Bishop treatment plant and the ESCSD treatment plant.

**Table 5: Treatment Plant Operator License Number and Certification Level**

Treatment Plant	Operator	License Number	Certification Level
City of Bishop	Deston Dishion, Public Works Director	9434	II
ESCSD	Steven Nixon, Chief Plant Operator	7471	IV

The City of Bishop treatment plant is classified as a Grade 2 plant.

- i. Given that both ESCSD and City of Bishop treatment plants serve less than 50,000 people, the threat and complexity designation is 3C [3].

## 2. Effluent and Receiving Water Quality Characterization



- a. The groundwater monitoring data for total dissolved solids (TDS) and nitrate as N are provided in Tables 6 and 7 and plotted in Figures 1 and 2, respectively. The monitoring wells were not sampled for biochemical oxygen demand (BOD), total Kjeldahl nitrogen (TKN), ammonia as nitrogen, chloride or sulfate.



**Table 6: Groundwater Data for Nitrate as N**

Analysis Date	Nitrate as N (mg/L)												
	MW-1	MW-2	MW-3	MW-4	MW -5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13
Mar-18	NS	7.3	NS	11.9	NS	2.7	2.6	NS	NS	NS	NS	NS	NS
Jun-18	6.4	5.5	4.8	6.8	3	NS	NS	2.2	2.1	2.9	3	3.1	2.7
Sep-18	NS	11.7	NS	10.2	NS	0.8	3.1	NS	NS	NS	NS	NS	NS
Dec-18	NS	10.8	NS	5.8	NS	2.6	2.4	NS	NS	NS	NS	NS	NS
Feb-19	0.39	NS	6.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Mar-19	NS	7.5	NS	7.1	NS	1.4	2	NS	NS	NS	NS	NS	NS
Jun-19	NS	13.7	NS	16.5	NS	2.2	2	NS	NS	NS	NS	NS	NS
Sep-19	NS	13.2	NS	NS	NS	1.7	1.5	NS	NS	NS	NS	NS	NS
Dec-19	10.4	10.2	8.6	12.7	3.7	1.8	2.1	6.4	11.7	3.1	12.2	5.9	1.9
Mar-20	2.2	9.8	3.7	12.4	2.8	2.3	1.9	3.9	3.9	2.9	13.8	2.5	3.2
Jun-20	3.3	8.6	8.7	9.1	2.1	2.1	2.3	7.6	7.6	2.3	6.7	2.5	1.8
Sep-20	1.4	8.3	7.7	8.7	20	1.9	2.1	4.6	4.6	3.2	5.5	3	ND
Dec-20	1.5	8.3	4.1	9.8	1.8	1.6	1.4	4.6	1.5	1.8	5.9	1.4	1.3
Mar-21	3.7	4.9	8.6	4.3	2.3	2.2	2.5	3	2.1	2.4	11.8	2	2.2
Jun-21	4.3	12.4	7.8	11.2	3	2.2	2	2.3	2.5	1.8	13.2	2	1.8
Sep-21	1.8	NS	4.6	NS	1.7	NS	NS	6.4	2.2	1.1	3.0	1.6	1.0

ND = Non Detect

NS= Not sampled

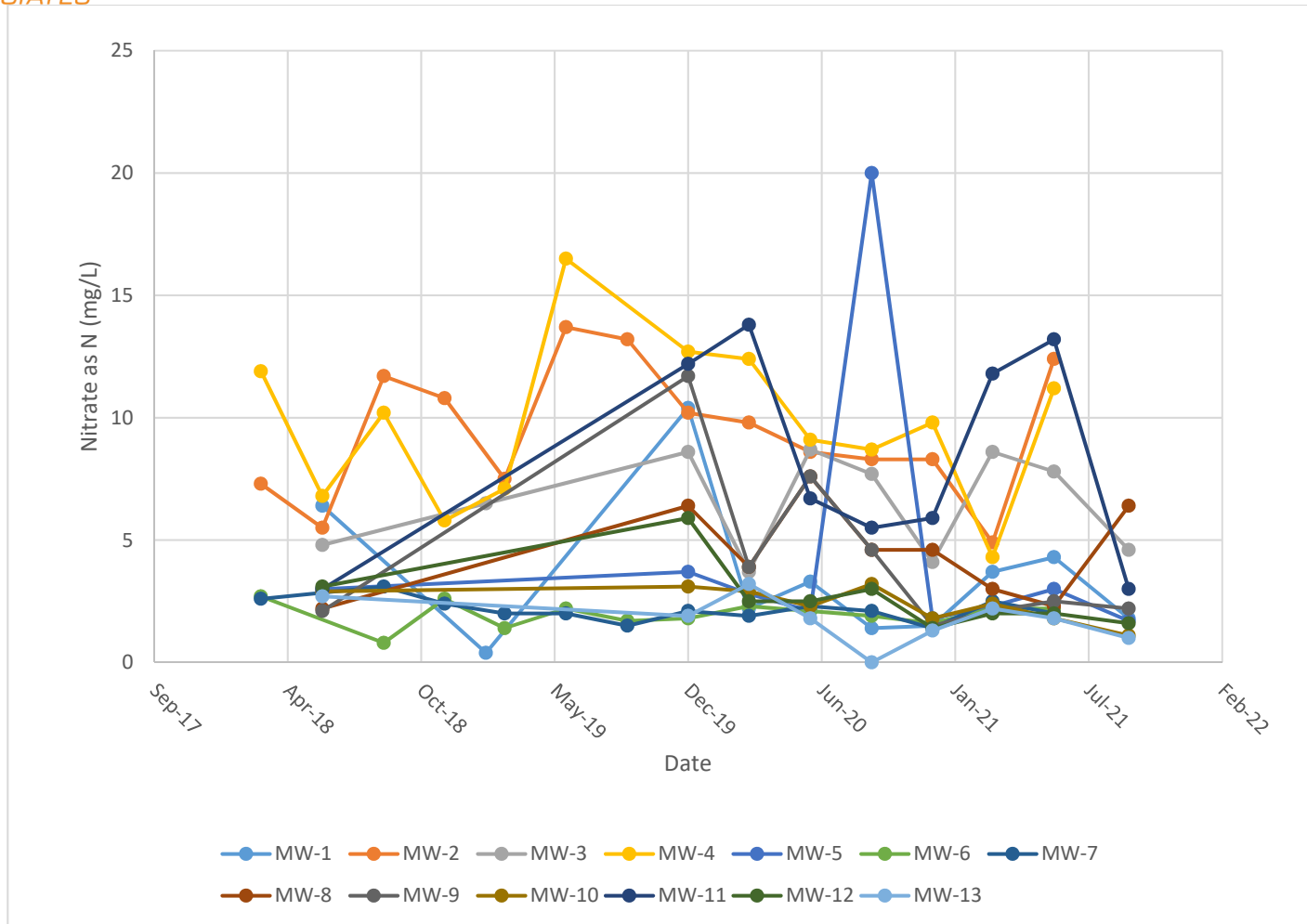


**Table 7: Groundwater Data for Total Dissolved Solids**

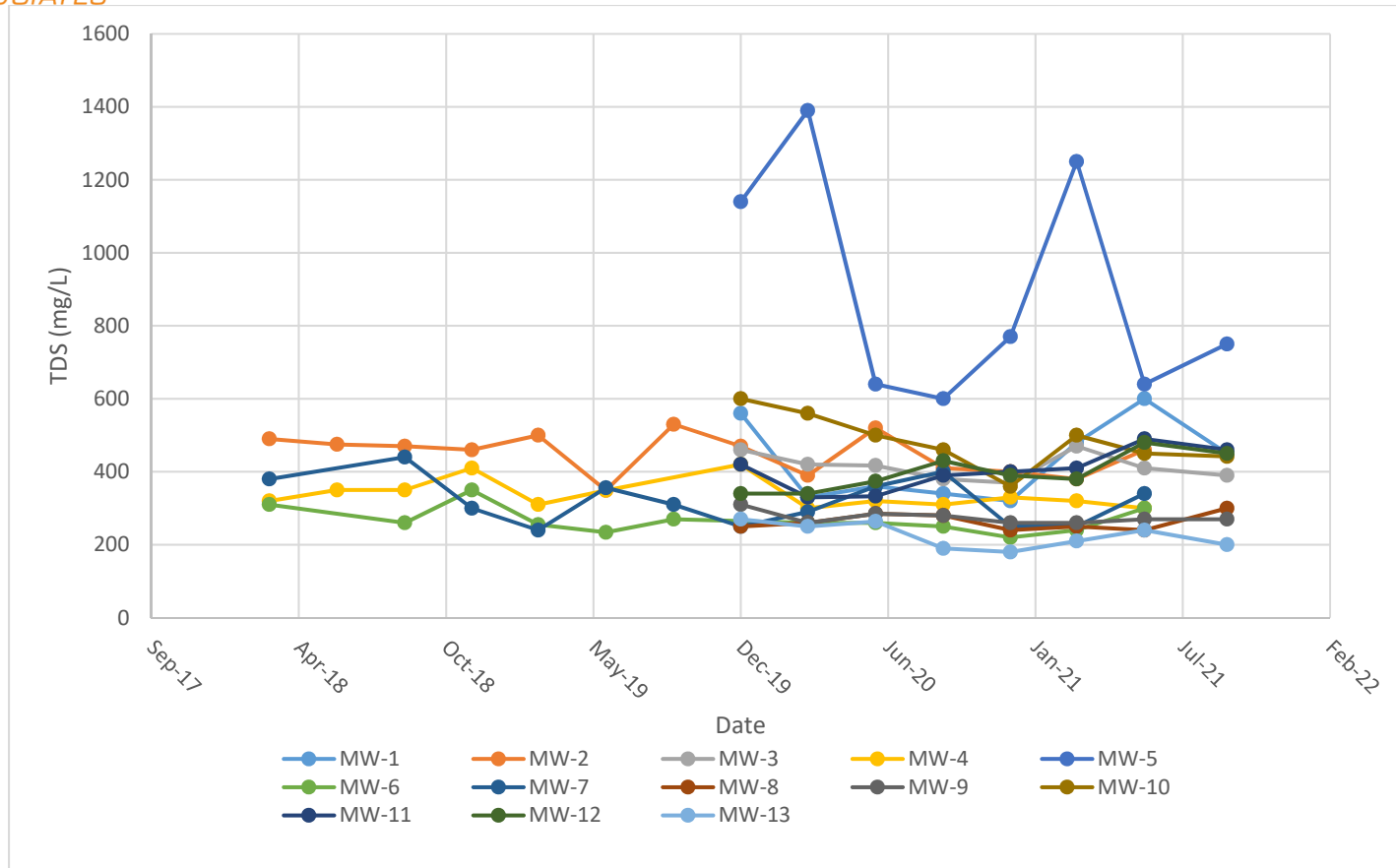
Analysis Date	TDS (mg/L)												
	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MS-13
Mar-18	NS	490	NS	320	NS	310	380	NS	NS	NS	NS	NS	NS
Jun-18	NS	475	NS	350	NS	NS	NS	NS	NS	NS	NS	NS	NS
Sep-18	NS	470	NS	350	NS	260	440	NS	NS	NS	NS	NS	NS
Dec-18	NS	460	NS	410	NS	350	300	NS	NS	NS	NS	NS	NS
Mar-19	NS	500	NS	310	NS	255	240	NS	NS	NS	NS	NS	NS
Jun-19	NS	349	NS	349	NS	234	356	NS	NS	NS	NS	NS	NS
Sep-19	NS	530	NS	NS	NS	270	310	NS	NS	NS	NS	NS	NS
Dec-19	560	470	460	420	1,140	265	250	250	310	600	420	340	270
Mar-20	330	390	420	300	1,390	260	290	260	260	560	330	340	250
Jun-20	360	520	417	320	640	260	360	285	285	500	333	374	264
Sep-20	340	410	380	310	600	250	400	280	280	460	390	430	190
Dec-20	320	400	370	330	770	220	250	240	260	360	400	390	180
Mar-21	480	380	470	320	1,250	240	250	250	260	500	410	380	210
Jun-21	600	460	410	300	640	300	340	240	270	450	490	480	240
Sep-21	450	NS	390	NS	750	NS	NS	300	270	442	460	450	200

NS=Not Sampled





**Figure 1: Nitrate versus analysis date for groundwater monitoring wells**



**Figure 2: Total Dissolved Solids versus analysis date for groundwater monitoring wells**

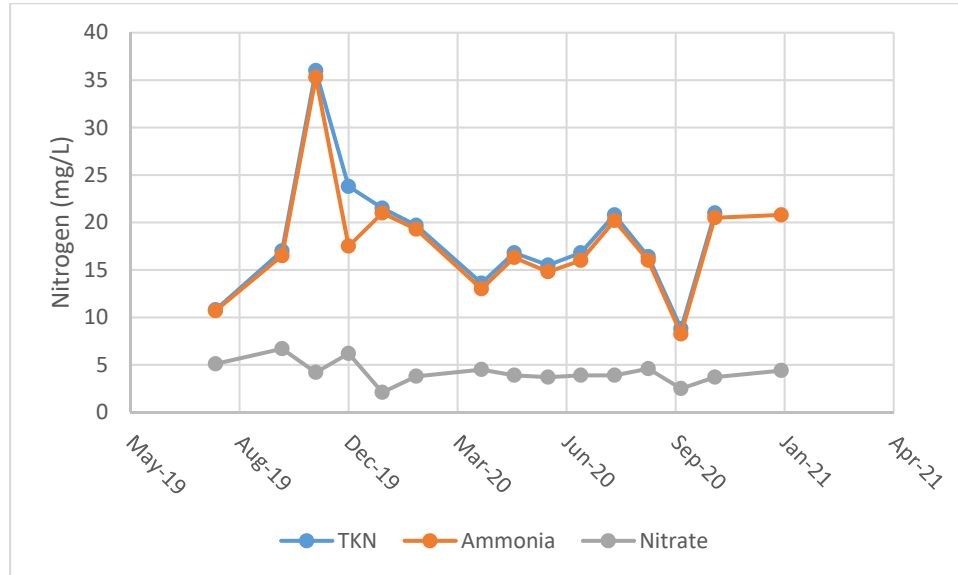


Effluent data for the City of Bishop treatment plant is provided in Table 8 below and shown in Figures 3 and 4. The effluent was not sampled for total dissolved solids, chloride or sulfate.

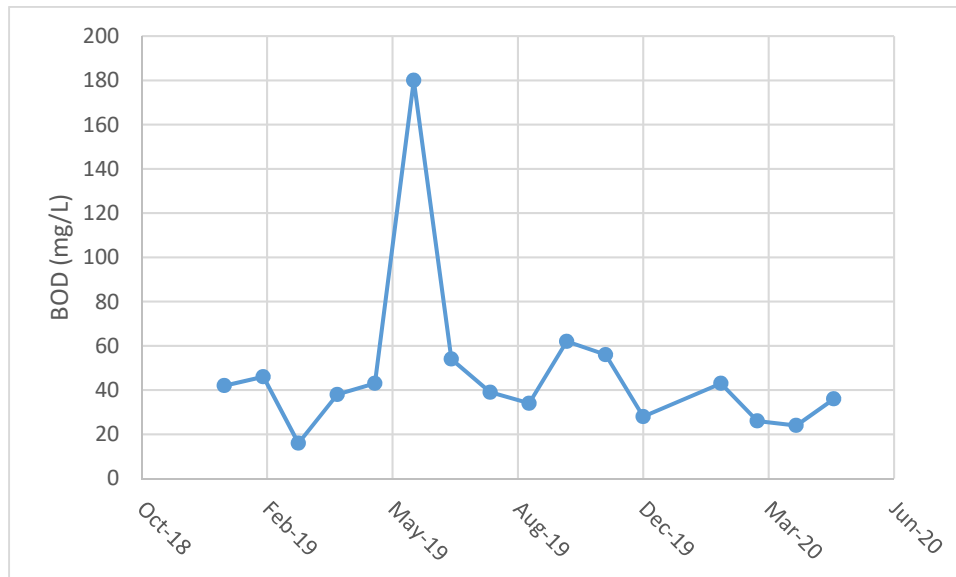
**Table 8: City of Bishop Effluent Water Concentrations for Ammonia, Nitrate and TKN**

Date	BOD (mg/L)	Nitrate as N (mg/L)	TKN (mg/L)	Ammonia as N (mg/L)
Jan-19	42	NS	NS	NS
Feb-19	46	NS	NS	NS
Mar-19	16	NS	NS	NS
Apr-19	38	NS	NS	NS
May-19	43	NS	NS	NS
Jun-19	180	NS	NS	NS
Jul-19	54	NS	NS	NS
Aug-19	39	5.1	10.8	10.7
Sep-19	34	NS	NS	NS
Oct-19	62	6.7	17	16.5
Nov-19	56	4.2	36	35.3
Dec-19	28	6.2	23.8	17.5
Jan-20	NS	2.1	21.5	21
Feb-20	43	3.8	19.7	19.3
Mar-20	26	NS	NS	NS
Apr-20	24	4.5	13.6	13
May-20	36	3.9	16.8	16.3
Jun-20	NS	3.7	15.5	14.8
Jul-20	54	3.9	16.8	16
Aug-20	NS	3.9	20.8	20.2
Sep-20	110	4.6	16.4	16
Oct-20	NS	2.5	8.8	8.25
Nov-20	NS	3.7	21	20.5
Jan-21	49	4.4	21.4	20.8

NS=Not Sampled



**Figure 3: City of Bishop Effluent Water concentrations for ammonia, nitrate and TKN**



**Figure 4: City of Bishop Effluent BOD Concentrations**

Tables 9 and 10 provide the effluent data for the ESCSD treatment plant. The effluent data is plotted against analysis date in Figures 5, 6 and 7. The effluent was not sampled for chloride or sulfate.





**Table 9: ESCSD Effluent Water concentrations for ammonia, nitrate and TKN**

Date	Ammonia as N (mg/L)	Nitrate as N (mg/L)	TKN (mg/L)
1/17/2018	3.5	NS	NS
2/14/2018	NS	4.7	35.5
8/29/2018	6.35	5.2	NS
11/8/2018	17	1.9	17.8
2/6/2019	12	2.3	12.8
4/30/2019	20	5.7	21.3
7/9/2019	25.5	2.1	27.2
8/5/2019	11.8	3.4	11.9
9/11/2019	11.4	2.1	12
10/1/2019	16.5	5.8	17
11/6/2019	43	4.7	44
11/22/2019	21.5	4.1	22.3
12/12/2019	16.5	4.7	23
1/17/2020	16.8	1.9	17.1
2/14/2020	23.2	4.9	25.3
3/3/2020	18	3.5	18.8
4/1/2020	26.8	4.3	27.4
5/14/2020	21.8	5.2	22.3
6/10/2020	22.3	5.1	23.5
7/15/2020	27.5	5.3	28.2
8/14/2020	22.5	5.2	23
9/10/2020	21.8	2.7	22.5
10/8/2020	20.5	2.7	21.3
11/19/2020	21.8	5.2	22.3
12/16/2020	21.3	5.2	22
1/18/2021	24.8	5.2	25.2
2/11/2021	21.5	5.3	22.3
3/25/2021	21.5	5.2	22
4/21/2021	21.8	5.1	22.2
5/26/2021	22.8	4.6	23.1
6/23/2021	22	4.5	22.5
7/15/2021	22.8	4.7	23.5

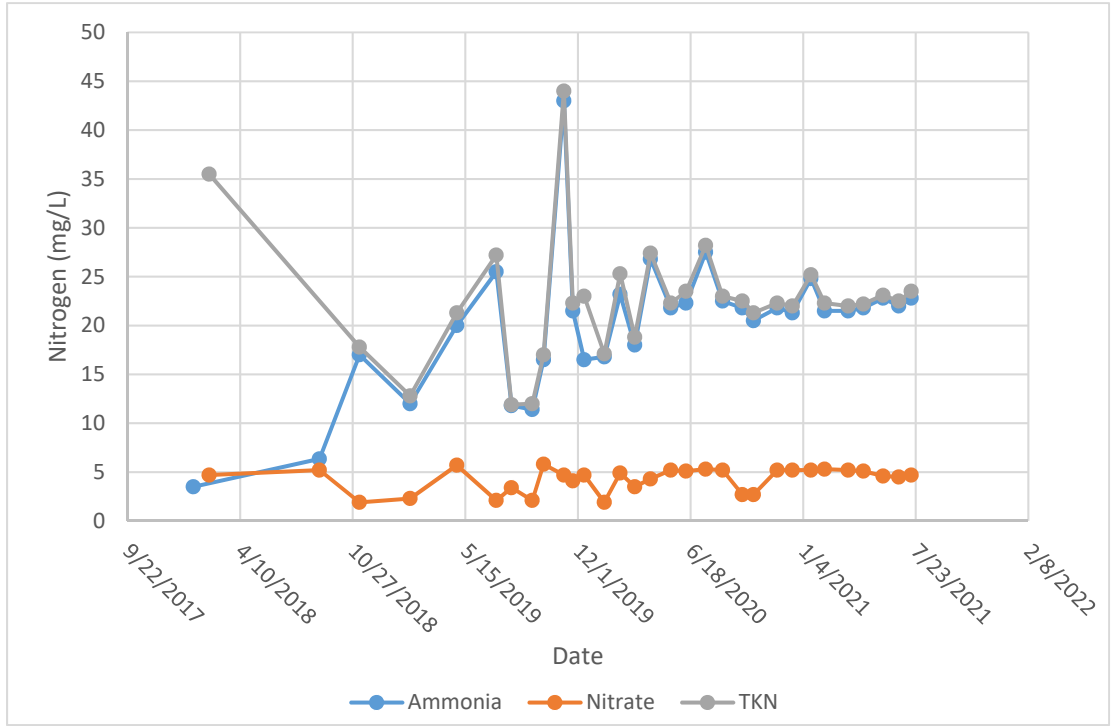
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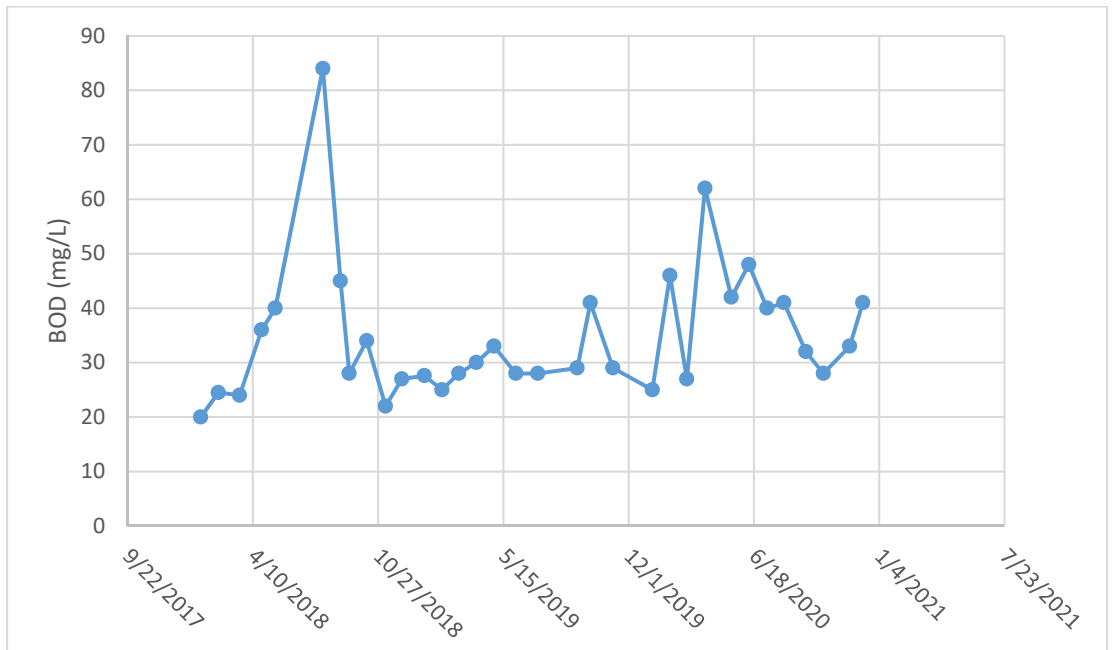
**Table 10: ESCSD Effluent Water concentrations for BOD and Total Dissolved Solids**

Date	BOD (mg/L)	Total Dissolved Solids (mg/L)
1/17/2018	20	NS
2/14/2018	24.5	NS
3/20/2018	24	330
4/24/2018	36	NS
5/16/2018	40	NS
7/31/2018	84	NS
8/28/2018	45	NS
9/11/2018	28	320
10/9/2018	34	NS
11/8/2018	22	NS
12/4/2018	27	350
1/9/2019	27.6	NS
2/6/2019	25	NS
3/5/2019	28	365
4/2/2019	30	NS
4/30/2019	33	NS
6/4/2019	28	299
7/9/2019	28	NS
9/10/2019	29	300
10/1/2019	41	NS
11/6/2019	29	NS
1/8/2020	25	NS
2/5/2020	46	NS
3/3/2020	27	340
4/1/2020	62	NS
5/13/2020	42	NS
6/10/2020	48	370
7/9/2020	40	NS
8/5/2020	41	NS
9/9/2020	32	300
10/7/2020	28	NS
11/18/2020	33	NS
12/9/2020	41	330

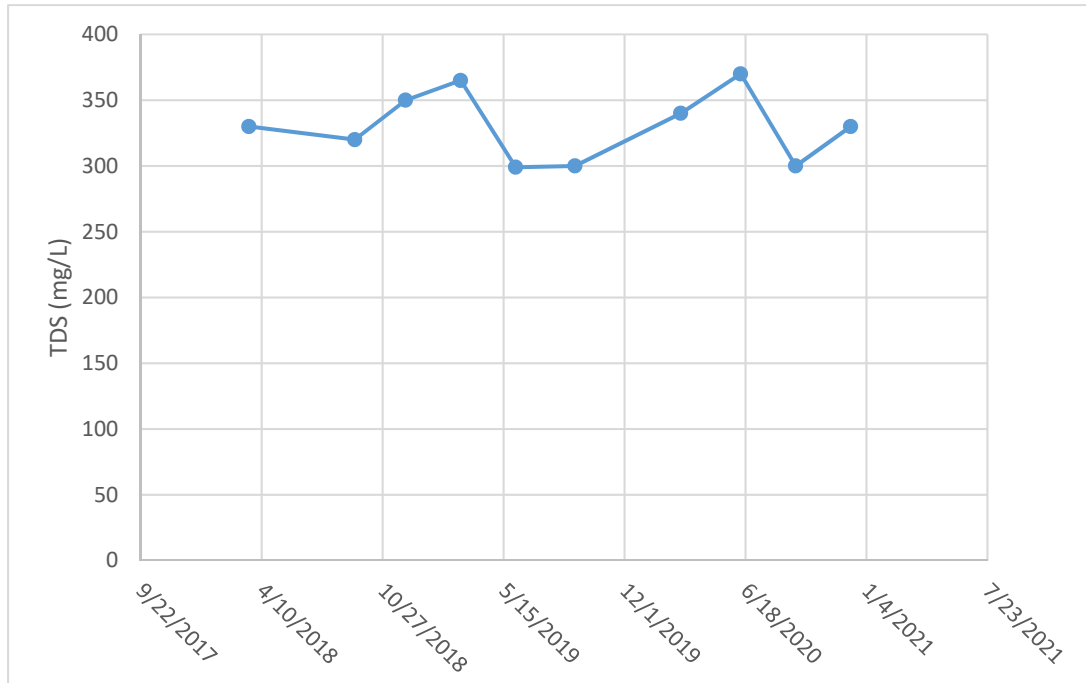
NS=Not Sampled



**Figure 5: ESCSD Effluent Water concentrations for ammonia, nitrate and TKN**



**Figure 6: ESCSD Effluent BOD Concentrations**



**Figure 7: ESCSD Effluent Total Dissolved Solids (TDS) Concentrations**

Monitoring and reporting of influent and effluent water quality as well as groundwater quality are required for both treatment plants by each entity's respective WDR. These monitoring and reporting requirements ensure that each plant is achieving permit level compliance and treatment objectives. In the instance that the receiving water quality measured in the monitoring wells changes, the change can be correlated back to each plant's effluent. The monitoring and reporting schedules for the influent, effluent and groundwater are included below in Tables 11, 12 and 13, respectively [2].

**Table 11: City of Bishop and ESCSD Monitoring and Reporting Schedule for Influent**

Parameter	Units	Type	Frequency
BOD <sub>5</sub>	mg/L	Grab	Monthly
Total Flow	MG	Metered	Daily
Total Flow	MG	-	Monthly
Average Flow	MGD	-	Monthly
Instantaneous Peak Flow	MGD	Metered	Daily
Pond Freeboard	Feet	-	Monthly



**Table 12: City of Bishop and ESCSD Monitoring and Reporting Schedule for Effluent**

Parameter	Units	Type	Frequency
Total Flow	MG	-	Monthly
pH	-	Grab	Monthly
BOD <sub>5</sub>	mg/L	Grab	Monthly
COD	mg/L	Grab	Quarterly
MBAS	mg/L	Grab	Quarterly
Total Filterable Residue	mg/L	Grab	Quarterly

**Table 13: City of Bishop and ESCSD Monitoring and Reporting Schedule for Groundwater Monitoring**

Parameter	Units	Type	Frequency
Nitrate-Nitrogen	mg/L as N	Grab	Quarterly
MBAS	mg/L	Grab	Quarterly
Total Filterable Residue	mg/L	Grab	Quarterly
Depth to Groundwater	Feet	-	Quarterly

- b. Please find a site map showing monitoring well location in Figure 5 in Appendix A. There are presently no domestic water wells in or adjacent to the land application area. Since Los Angeles Department of Water and Power owns the land adjacent to the land application area, no future domestic water facilities are anticipated. The Department of Water Resources Water Data Library database does not show any groundwater monitoring stations within the land application area and the California Natural Resources Agency's Well Completion Report Map Application does not indicate any production or domestic wells within or near the land application area [2]. Please find the drinking quality well reports in Appendix B.

### 3. Effluent Disposal Sites

- a. The bottom and top surface area at 18 inches (in.) of freeboard for the treatment ponds at the City of Bishop and ESCSD treatment plants are provided in Tables 14 and 15, respectively.

**Table 14: City of Bishop Treatment Pond Surface Area**

Pond	Bottom Surface Area (ft <sup>2</sup> )	Surface Area at 18 in. of Freeboard (ft <sup>2</sup> )
Pond 1	240,350	253,550
Pond 2	202,628	219,812
Pond 3	230,360	242,840



**Table 15: ESCSD Treatment Pond Surface Area**

Pond	Bottom Surface Area (ft <sup>2</sup> )	Surface Area at 18 in. of Freeboard (ft <sup>2</sup> )
Pond 1	102,000	125,460

In 2013, a soils report was generated for the land encompassing the evaporation/percolation ponds in the ESCSD wastewater treatment plant and the irrigated areas of both the ESCSD wastewater treatment plant and the City of Bishop wastewater treatment plant. The shallow soils consist of predominantly fan terrace deposits (Lucerne loamy fine sand) with lesser amounts of stream terrace deposits (Shabbell-Shondow-Xerofluvents association). The maximum saturated hydraulic conductivity rating is 21.2 feet per day in the fan terrace deposits and 11.3 feet per day in the stream terrace deposits [4]. The infiltration rate for the ESCSD Ponds is 1.1 inches per day (inch/day) [5].

In 2021, a soils report was generated for the evaporation/percolation ponds in the City of Bishop treatment plant. A majority of the soil in the evaporation/percolation ponds is Lucerne loamy fine sand, with a small amount of Dehy-Dehy calcareous complex [6]. The infiltration rate for the City of Bishop ponds is 0.25 inch/day [5]. The soils report can be found in Appendix C.

- b. The undisinfected secondary treated effluent is disposed of via land application to pasture for non-dairy cattle. Currently, 169 acres of land are permitted for effluent disposal via irrigation. Of those 169 acres, the City of Bishop owns approximately 40 acres, and the Los Angeles Department of Water and Power owns the remaining balance. The monthly flows to irrigation area are provided in the Table below [1].

**Table 16: Monthly Flow to the Irrigation Area**

Month	Applied Irrigation Water (MG/Month)
January	6.62
February	26.45
March	60.84
April	83.07
May	101.11
June	106.82
July	110.47
August	101.89
September	75.12
October	41.91
November	30.08
December	0.00

As mentioned previously, in 2013, a soils report was generated for the land encompassing the southern ESCSD wastewater treatment plant evaporation/percolations ponds and the irrigated areas of both the ESCSD

wastewater treatment plant and the City of Bishop wastewater treatment plant. The shallow soils consist of predominantly fan terrace deposits (Lucerne loamy fine sand) with lesser amounts of stream terrace deposits (Shabbell-Shondow-Xerofluvents association). The maximum saturated hydraulic conductivity rating is 21.2 feet per day in the fan terrace deposits and 11.3 feet per day in the stream terrace deposits [4]. The irrigation rate of the ESCSD and City of Bishop ponds are 1.1 inch/day and 0.25 inch/day, respectively [5]. In 2021, a soils report was generated for the evaporation/percolation ponds in the City of Bishop treatment plant. A majority of the soil in the evaporation/percolation ponds is Lucerne loamy fine sand, with a small amount of Dehy-Dehy calcareous complex [6]. The 2021 soils report can be found in Appendix C.

A best management practice was developed for land application. The best management practices includes:

- Ensuring application rates do not exceed the agronomic rate of the pasture crops, or at a minimum the hydraulic capacity of the land application area;
- Ensuring that no surface flow or other discharge of recycle water leaves the land application area;
- Ensuring that standing water persisting longer than 48 hours does not occur as a result of irrigation practices;
- The land application area should be properly fenced and posted to restrict non-operational staff and other members of the public from accessing the site. Signage shall warn of the presence of recycled water for agricultural use;
- BAWA shall maintain and promptly repair site fencing and signage of the land application area.

Currently, during non-irrigation seasons, the undisinfected secondary treated effluent is disposed of at the evaporation/percolation ponds [2]. Given that irrigation demands vary seasonally, effluent winter storage is necessary. During the winter, the effluent water would be diverted to the storage reservoir. During spring and summer, irrigation seasons, the storage reservoir would be drained for irrigation. In order to ensure that enough winter storage capacity is available, a water balance was developed. Assuming an annual flow at buildout of 2.3 MGD (less than the combined permitted flow of 2.45 MGD), 740 acre-feet of storage is needed. Since the effluent stored in the storage reservoir would contain nutrients, it cannot be allowed to infiltrate and the storage would need to be lined [1].

#### **4. Planned Projects**

- a. Please find the CEQA status developed by BAWA's Environmental Consultant in Appendix D.



- b. A project has been proposed to change the application of recycled water for irrigation from the historic practice of flood irrigation to pressurized spray irrigation (sprinklers). Sprinklers will provide a more efficient and consistent application of recycled water to the pasture crops at a rate that more closely matches the agronomic rate than can be achieved by flood irrigation. Irrigating at a more agronomic rate will help reduce the amount of nitrogen released into the groundwater because it will ensure that the amount of water applied to the land application area will not exceed the amount of water and nitrogen that the plants can uptake.

The proposed project consists of three phases. Under phase 1, the project will provide land application via spray irrigation to the currently irrigated lands, consisting of approximately 105 acres of the 169 total combined acres currently permitted for disposal. Phase 2 of the project will modify the location of and increase the area available for land application via irrigation from the currently permitted 169 acres to a total of 342 acres. Of these 342 acres, Los Angeles Department of Water and Power owns 302 acres and the City of Bishop owns the remaining 40 acres. Under Phase 3, which depends on future population growth and the resulting increase in wastewater flows, an additional 132 acres of land will be added to the area available for land application. The proposed irrigations areas are shown in Figure 3 in Appendix A.

The recycled water project will consist of a new combined effluent outfall facility following secondary treatment of the municipal wastewater produced by the City of Bishop and ESCSD. Following the combined outfall will be a new pump station equipped with a 120 horsepower vertical turbine pump and variable frequency drive with a design flow rate of 1,450 gallons per minute (gpm). The pump station will supply water to a new distribution system consisting of polyvinyl chloride (PVC) piping with diameters ranging from 4 to 12 inches. The PVC piping will be equipped with agricultural gun-style rotating sprinklers [2].

Wastewater storage projects, including lined storage facilities for winter time use, are not currently planned for the BAWA effluent project.

## **5. Degradation Analysis**

- a. The current wastewater rate for the ESCSD plant for a single family dwelling is \$23.00 per dwelling unit. The current wastewater rate for the City of Bishop service area is \$40.00 for a single family residence.
- b. The median household income in the ESCSD service area is \$64,300. The median household income in the City of Bishop Service area is \$37,000.

In 2019, ESCSD completed an administrative draft CEQA-Plus Initial Study. The Study identified Inyo County as a low income/disadvantage community as the median household income in the County (\$51,500) was less than 80 percent the California median household income (\$53,735).



- c. The sewer use fee structure for City of Bishop treatment plant and ESCSD treatment plant are listed in the Tables below.



**Table 17: City of Bishop Sewer Use Fee Structure**

User Category	Basis	Current	Proposed				
		July 2018	July 2019	July 2020	July 2021	July 2022	July 2023
Single Family Residence	Each	\$ 37.00	\$ 31.00	\$ 32.00	\$ 32.00	\$ 33.00	\$ 33.00
Multiple Family Residence (detached)	Unit	\$ 27.75	\$ 23.25	\$ 24.00	\$ 24.00	\$ 24.75	\$ 24.75
Multiple Family Residence (attached)	Unit	\$ 25.90	\$ 21.70	\$ 22.40	\$ 22.40	\$ 23.10	\$ 23.10
Church	Each	\$ 37.00	\$ 31.00	\$ 32.00	\$ 32.00	\$ 33.00	\$ 33.00
Hall	Each	\$ 37.00	\$ 31.00	\$ 32.00	\$ 32.00	\$ 33.00	\$ 33.00
Hospital	Bed	\$ 12.95	\$ 10.85	\$ 11.20	\$ 11.20	\$ 11.55	\$ 11.55
School	Student	\$ 1.48	\$ 1.24	\$ 1.28	\$ 1.28	\$ 1.32	\$ 1.32
Fairgrounds	Each	\$ 185.00	\$ 155.00	\$ 160.00	\$ 160.00	\$ 165.00	\$ 165.00
Gas Station	Island	\$ 14.80	\$ 12.40	\$ 12.80	\$ 12.80	\$ 13.20	\$ 13.20
Car Wash	Stall	\$ 111.00	\$ 93.00	\$ 96.00	\$ 96.00	\$ 99.00	\$ 99.00
Beauty or Barber Shop	Each	\$ 37.00	\$ 31.00	\$ 32.00	\$ 32.00	\$ 33.00	\$ 33.00
Restaurant	Seat	\$ 3.70	\$ 3.10	\$ 3.20	\$ 3.20	\$ 3.30	\$ 3.30
Restaurant Outside	Seat		\$ 1.55	\$ 1.60	\$ 1.60	\$ 1.65	\$ 1.65
Restaurant Banquet Room	Each		\$ 31.00	\$ 32.00	\$ 32.00	\$ 33.00	\$ 33.00
Bar	Seat	\$ 2.96	\$ 2.48	\$ 2.56	\$ 2.56	\$ 2.64	\$ 2.64
Hotel Room	Each	\$ 9.25	\$ 7.75	\$ 8.00	\$ 8.00	\$ 8.25	\$ 8.25
Laundry and Laundromat	Washer	\$ 25.90	\$ 21.70	\$ 22.40	\$ 22.40	\$ 23.10	\$ 23.10
Trailer Dump Facility	Each	\$ 74.00	\$ 62.00	\$ 64.00	\$ 64.00	\$ 66.00	\$ 66.00
General Commercial	Toilet	\$ 35.15	\$ 29.45	\$ 30.40	\$ 30.40	\$ 31.35	\$ 31.35
Brewery (with pretreatment)	1KBbl/yr	\$ 7.40	\$ 6.20	\$ 6.40	\$ 6.40	\$ 6.60	\$ 6.60
Irrigation	Acre	\$ 11.10	\$ 9.30	\$ 9.60	\$ 9.60	\$ 9.90	\$ 9.90
Other	Case by Case	-	-	-	-	-	-



**Table 18: ESCSD Sewer Use Fee Structure**

Use	July 2018 Rate
<b>RESIDENTIAL</b>	
Single Family Dwelling	\$ 23.00
Multi-Family Dwelling	\$ 23.00
Trailers	\$ 23.00
Mobile Home	\$ 23.00
<b>COMMERCIAL</b>	
<i>RV Park</i>	
Manager's Quarters	\$ 23.00
Per Hook-Up Per Space	\$ 1.11
Restroom (per fixture unit)	\$ 5.79
Laundromat (per washer)	\$ 36.19
Laundromat for Non-Public Use (per washer)	\$ 23.00
Laundromat for Public Use (per washer)	\$ 36.19
Service Station	\$ 87.76
<i>Commercial Offices</i>	
Per Water Closet	\$ 23.00
Per fixture unit	\$ 5.79
<i>Professional Offices</i>	
Per Water Closet	\$ 23.00
Per fixture unit	\$ 5.79
Beauty shop (per fixture unit)	\$ 5.79
Retail Store	\$ 23.00
Retail Store w/ Produce	\$ 44.14
Retail Store w/ Bakery	\$ 44.14
Restaurant-Per Unit of Seating Capacity	\$ 3.15
Take-Out, Drive-In Restaurants	\$ 88.31
Brewery	\$ 460.02
<i>Bed and Breakfast Inn</i>	
Managers Quarters	\$ 23.00
Bathrooms	\$ 23.00
Per Bedroom	\$ 7.69
<i>Motels, Hotels, Inns, Rooming Houses</i>	
Mangers Quarters	\$ 23.00
Per Rental Unit with Kitchen	\$ 10.89
Per Rental Unit	\$ 7.69
Veterinary Hospital	\$ 67.05

<i>Recreational Parks</i>	
Per Water Closet	\$ 11.04
Washrack	\$ 63.90
<b>INDUSTRIAL</b>	
Plastic Molding Firm	\$ 88.31
<b>INSTITUTIONAL</b>	
Church	\$ 44.14
<i>School</i>	
Per Water Closet	\$ 23.00
Per fixture unit	\$ 5.79
Pre-School, Day Nursery, Private School	\$ 33.16
Fire Station	\$ 23.00
County Road Department Yard	\$ 23.00

d. Please find the groundwater degradation analysis in Appendix E.

## 6. Groundwater Monitoring Network

a. Monitoring well coordinates, installation date, and location description are provided in the Table below [1]. For monitoring well locations, please see Figure 4 in Appendix A.

**Table 19: Monitoring Well Location and Installation Date**

<b>Monitoring Well ID</b>	<b>Latitude, Longitude</b>	<b>Installation Date</b>	<b>Location Description</b>
MW-1*	37.35360, -118.37250	October 2014	Southeast end of the City of Bishop's wastewater treatment plant
MW-2	37.35233, -118.37160	Prior to 1980	Directly south of ESCSD's wastewater treatment plant on the north edge of the irrigation area
MW-3*	37.34960, -118.37340	October 2014	Western region of the current irrigation area
MW-4	37.35106, -118.36538	October 1985	Just east of the current irrigation area
MW-5	37.34765, -118.36804	October 1985	Southeastern edge of the current irrigation area
MW-6	37.35675, -118.37926	April 2013	West of the ESCSD treatment plant
MW-7	37.35488, -118.37799	April 2013	South of the City of Bishop's wastewater treatment facility but outside the irrigation area



MW-8	37.35780, -118.36805	April 2013	Northeast of the ESCSD pond
MW-9	37.35903, -118.37713	April 2017	Northeast corner of the City of Bishop treatment plant
MW-10	37.35273, -118.37663	April 2017	South of the City of Bishop treatment ponds
MW-11	37.35780, -118.37222	April 2017	Located on the northeast corner of the City of Bishop treatment ponds
MW-12	37.35518, -118.37539	April 2017	Located between the treatment ponds for City of Bishop
MW-13	37.34796, -118.37594	April 2017	Located in the southern end of the current irrigation area

\*Replacement Well

- b. The ESCSD treatment plant, City of Bishop treatment plant, irrigation area and areas surrounding the irrigation areas contains thirteen groundwater monitoring wells total.
- c. Well depth and screened interval for each monitoring well are provided in the Table below [4]. Note that MW-1 and MW-3 are replacement wells [1].

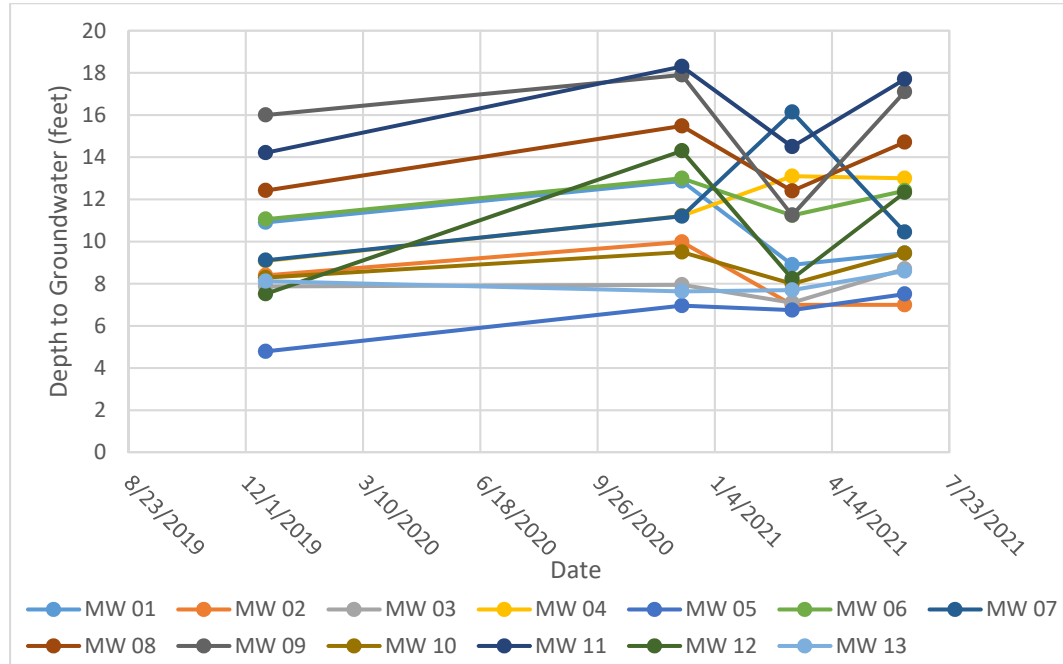
**Table 18: Groundwater Monitoring Well Depth and Screen Interval**

Monitoring Well ID	Well Depth (ft)	Screen Interval (ft below grade surface)
MW-1 <sup>1</sup>	24.5	4.5-24.5
MW-2 <sup>2</sup>	Approximately 20	Not Provided
MW-3 <sup>1</sup>	24.5	4.5-24.5
MW-4	25	12-25
MW-5	25	12-25
MW-6	19.5	4.5-19.5
MW-7	20	5-20
MW-8	24.5	4.5-24.5
MW-9	35	5-35
MW-10	34.5	4.5-34.5
MW-11	35	5-35
MW-12	40	10-40
MW-13	35	5-35

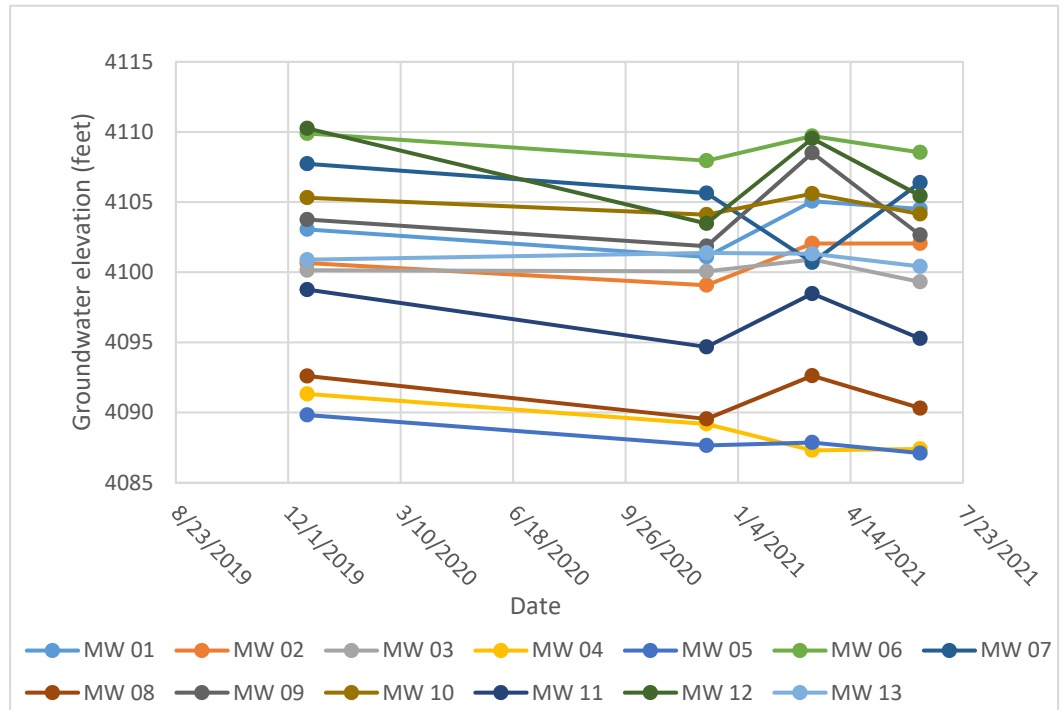
<sup>1</sup>Replacement Well

<sup>2</sup>Boring Log not available

- d. In this area, the groundwater flows from east to southeast, across the wastewater treatment plants and land application areas towards Owens River [7]. Figures showing groundwater contours for 2019, 2020, and 2021 can be found in Appendix F.
- e. Depth to groundwater and groundwater elevation above sea level from 2019 to 2021 in Figures 5 and 6 below, respectively.



**Figure 5: Depth to groundwater versus measurement date**



**Figure 6: Groundwater elevation versus measurement date**



- f. The saturated hydraulic conductivity of the shallow soil is 21.4 feet per day or less based on the soil data of the area. USGS shows the range of hydraulic conductivity values for mixed silts, sands and gravels in the Owens Valley to be 10 to 120 feet per day [4].
- g. The geotracker database does not show any underground storage tanks or contamination within the irrigation fields or treatment plants.

All field sampling occurs at the monitoring wells. The monitoring well locations are provided in Figure 4 in Appendix A. Borehole lithology logs containing well construction details are provided in Appendix G. Note that a borehole lithology log and well construction details are not available for monitoring well 2.

## **7. Geology and Hydrogeology**

- a. The City of Bishop is located along the eastern slopes of the Sierra Nevada at an elevation of 4,150 feet. The ESCSD and City of Bishop treatment plants sit at an elevation of 4,120 feet. The pond system associated with the City of Bishop treatment plant sits at elevations ranging from 4,125 and 4,115 feet. The evaporation/percolation pond for the ESCSD treatment plant range in elevation from 4,115 feet to 4,110 feet. The current irrigation site ranges in elevations from 4,120 feet to 4,105 feet.
- b. The climate in the Owens River Valley is semi-arid to arid with low precipitation, plenty of sunshine, frequent winds, and moderate to low humidity. Winter temperatures typically from 30 to 60 degrees Fahrenheit (°F) while the summers are typically hot and dry with temperatures ranging from 70 to 100 °F. The average annual precipitation ranges from 5 to 6 inches, with a majority of the precipitation falling between November and March. The average frost-free period is 150 to 225 days [5].
- c. A soil survey found the following soil types in and around the City of Bishop's and ESCSD's wastewater treatment plant [5].
  - Dehy-Dehy calcareous complex
  - Inyo-Poleta complex
  - Lucerne loamy fine sand
  - Poleta loamy sand
  - Shabbell-Shondow-Xerofluents association
  - Shabbell-Winnedumah Complex



- Shondow loam

The soil survey indicated that a majority of the soil in the vicinity of the City of Bishop's and ESCSD's wastewater treatment plant is deep, and well drained soils.

The Owens Valley Fault Zone lies just to the west of the City of Bishop and ESCSD treatment plants. The Owens Valley Fault in this area is well constrained and has a slip rate of 1.0-5.0 millimeters per year (mm/yr). Farther to the east of the treatment plants lies the East White Mountains Fault Zone. In this area the East White Mountains Fault Zone is well constrained and has a slip rate of 0.2 to 1.0 mm/yr [8].

- d. In the area of the City of Bishop's and ESCSD's wastewater treatment plant, the groundwater depth ranges from approximately 2 to 10 feet below the ground surface. In this area, groundwater is a part of the Upper Owen Subunit of the Owens Hydrologic Unit. The total filterable residue concentration of the groundwater ranges from 150 to 400 mg/L. The groundwater flows from east to southeast, across the wastewater treatment plants and towards the Owens River.
- e. Bishop Creek and Owens River both lie within proximity to the project site. Bishop Creek, which flows east until the confluence with the Owens River, is approximately 1.2 miles west from the northwest corner of the project site. The Owens River, which flows from the north to the south, is approximately 1.8 miles east from the southeast corner of the project site [2]. Two irrigation ditches, Bishop Creek Canal and A-Drain, also lie near the project site.

#### 8. **Disinfection Byproducts Control Plan**

Currently, the Bishop Area Wastewater Authority does not disinfect the secondary effluent therefore a disinfection byproducts control plan is not applicable. Given that the approved Title 22 Engineering Report states that the secondary effluent is not disinfected, it is assumed that the Lahontan Regional Water Quality Control Board will not require disinfection. If disinfection is required, the disinfection byproducts control plan can be provided under an amended scope of work.

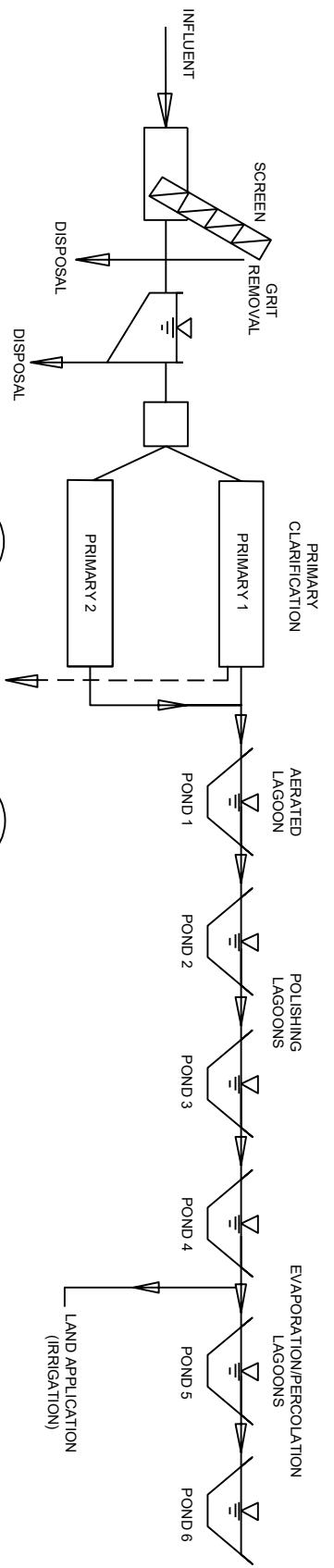


## 9. References

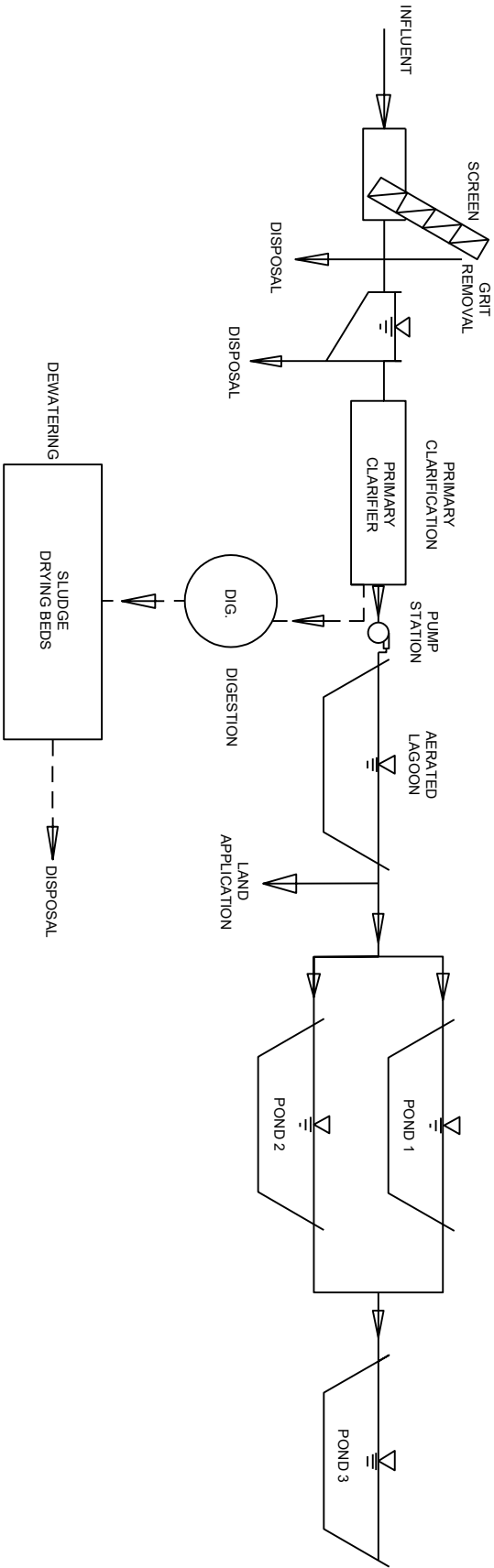
- [1] R.O. Anderson Engineering, Inc., "Feasibility Report for Joint Treatment and Nutrient Removal," October 2016.
- [2] Lumos & Associates, "Bishop Area Wastewater Authority Engineering Report for Production, Distribution, and Use of Recycled Water," March 2021.
- [3] California Water Board, "California Code of Regulations Title 23. Division 3. Chapter 9. Waste Discharge Reports and Requirements Article 1. Fees," 2020. [Online]. Available: [https://www.waterboards.ca.gov/resources/fees/water\\_quality/docs/fy2021\\_fee\\_schedule.pdf](https://www.waterboards.ca.gov/resources/fees/water_quality/docs/fy2021_fee_schedule.pdf).
- [4] Johnson Wright, Inc., "DRAFT Eastern Sierra Community Services District Groundwater Fate and Transport Evaluation, Waste Water Treatment Plant Inyo County, California," June 2013.
- [5] Resource Concepts, Inc., "Land Area Calculations for Irrigation Alternatives, Eastern Sierra Community Services District & City of Bishop Wastewater Treatment Facilities," December 2019.
- [6] NRCS, USDA, "Web Soil Survey," USDA, [Online]. Available: <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>. [Accessed 16 August 2021].
- [7] Partner Engineering and Science, Inc., "Technical Memorandum - ESCSD Facilities Antidegradation Study," 2019.
- [8] USGS, "U.S. Quaternary Faults," USGS, [Online]. Available: <https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=5a6038b3a1684561a9b0aadf88412fcf>. [Accessed 17 August 2021].



## **Appendix A: Site Figures and Facility Schematic**



CITY OF BISHOP EXISTING PROCESS DIAGRAM



E.S.C.S.D. EXISTING PROCESS DIAGRAM

Bishop Area Wastewater Authority

BAWA Report of Waste Discharge  
Plant Schematic

Date: 8/18/2021

Scale: --

Job No: 10474.000

FIGURE 1 of 3



800 E. COLLEGE PARKWAY  
CARSON CITY, NEVADA 89706  
PH. (775) 883-7077 FAX (775) 883-7114

Inyo

CA





Bishop Area Wastewater Authority  
**BAWA Report of Waste Discharge  
Treatment Plant Site Plan**  
CA

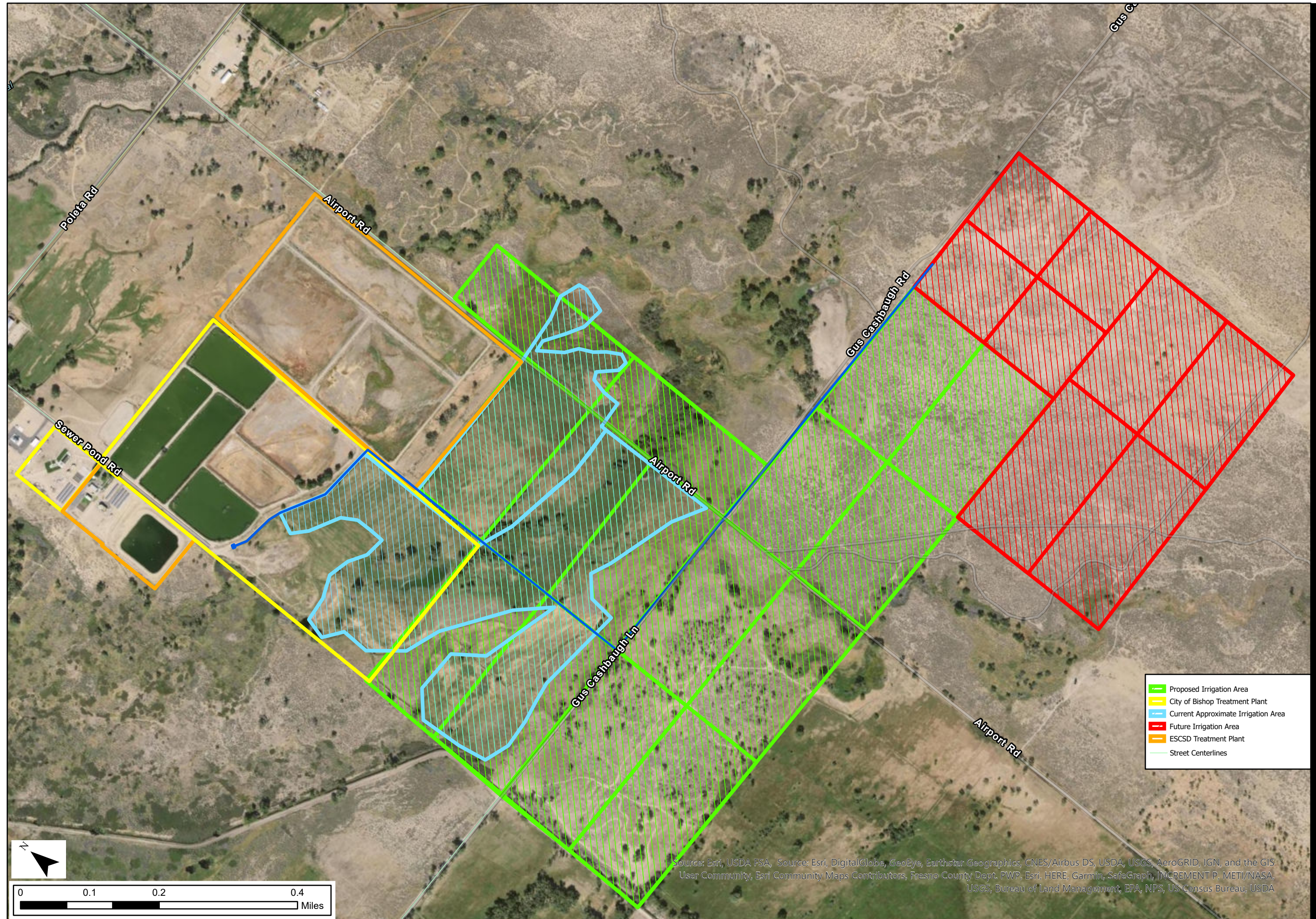
REV DATE	DESCRIPTION	BY

BAR IS 1 INCH ON ORIGINAL DRAWING  
0" 1"  
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

**Fig. 2**  
DRAWN BY: DRB  
DESIGNED BY: LJF  
CHECKED BY: JL  
JOB NO.: 10474.000  
SHEETS: 2 of 3



(LUMOS & ASSOCIATES, INC. THIS DRAWING IS THE PROPERTY OF LUMOS & ASSOCIATES, INC. USE OR REPRODUCTION OF THIS DRAWING, IN WHOLE OR IN PART, WITHOUT THE WRITTEN PERMISSION OF LUMOS & ASSOCIATES, INC. IS STRICTLY PROHIBITED. THIS DRAWING IS NOT TO BE USED FOR ANY PROJECT OTHER THAN THE PROJECT FOR WHICH IT WAS PREPARED.



Bishop Area Wastewater Authority  
**BAWA Report of Waste Discharge  
Land Application Area Site Plan**  
CA  
Inyo  
Bishop

REV	DATE	DESCRIPTION	BY

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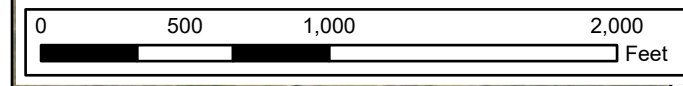
**Fig. 3**  
DRAWN BY: DRB  
DESIGNED BY: LJF  
CHECKED BY: JL  
JOB NO.: 10474.000  
SHEETS: 3 of 3

Source: Esri, USDA FSA, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Esri Community Maps Contributors, Fresno County Dept. PWP, Esri, HERE, Garmin, SafeGraph, INCREMENT P. METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA





CITY OF BISHOP TREATMENT PLANT  
 ESCSD TREATMENT PLANT  
● MONITOR WELLS  
 CURRENT DISPERSION AREA



Bishop Area Wastewater Authority  
**BAWA Report of Waste Discharge**  
**Monitor Well & Site Plan**

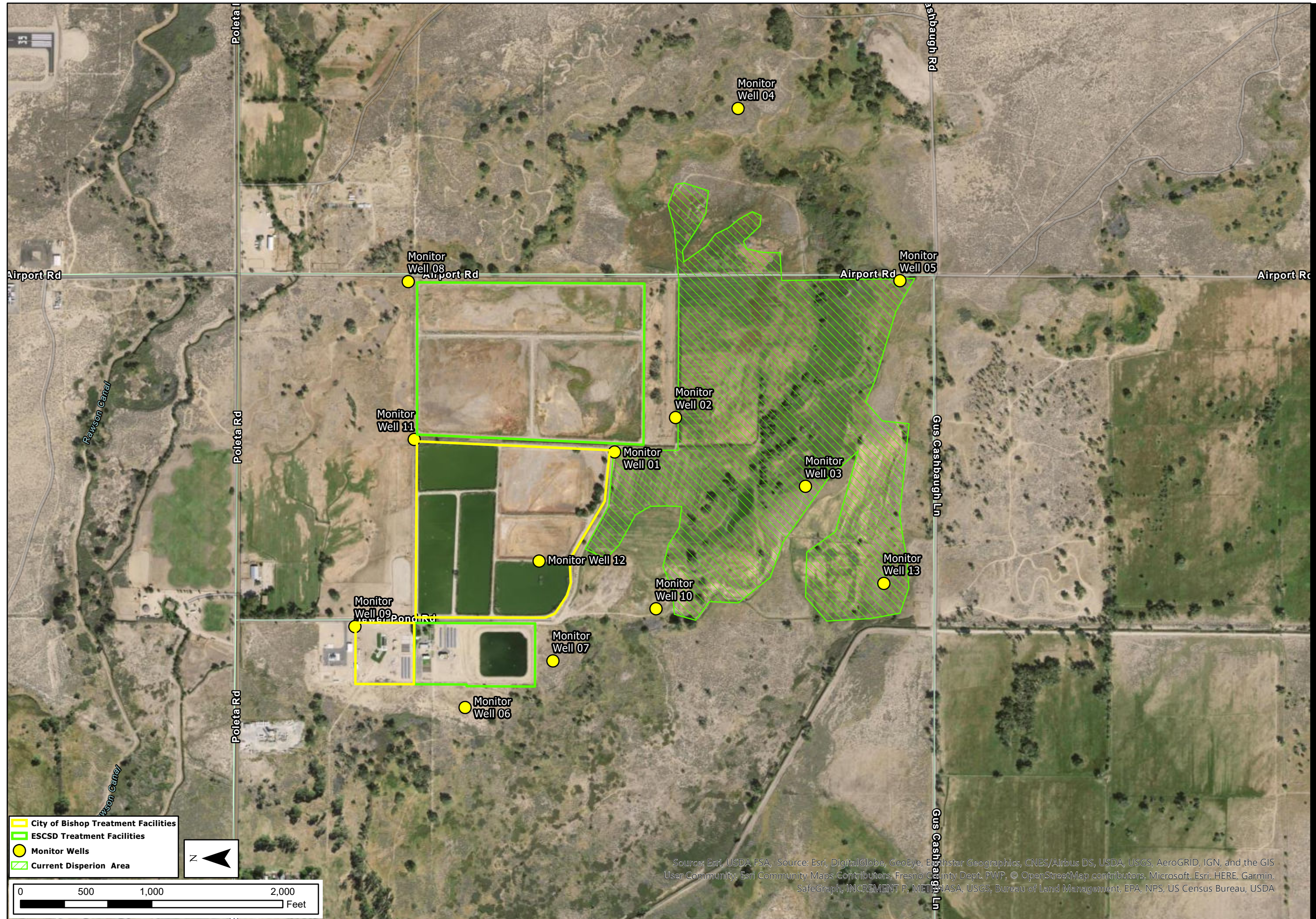
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**Fig. 4**  
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 DESIGNED BY: LJF  
 CHECKED BY: JL  
 JOB NO.: 10474.000  
 SHEETS:

Source: Esri, USDA FSA, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Esri Community Maps Contributors, Fresno County Dept. PWP, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA





Bishop Area Wastewater Authority  
**BAWA Report of Waste Discharge  
Monitor Well, Irrigation & Site Plan**  
CA

REV	DATE	DESCRIPTION	BY

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**Fig. 5**  
DRAWN BY: DRB  
DESIGNED BY: LJF  
CHECKED BY: JL  
JOB NO.: 10474.000  
SHEETS:

Source: Esri, USDA FSA, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Esri Community Maps Contributors, Fresno County Dept. PWP, © OpenStreetMap contributors, Microsoft, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI, NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA





## **Appendix B: Drinking Water Quality Well Reports**



BSK Associates Laboratory Fresno  
 1414 Stanislaus St  
 Fresno, CA 93706  
 559-497-2888 (Main)  
 559-485-6935 (FAX)

**A9D0338**

**4/16/2019**

Invoice: A909838

Deston Dishion  
 City of Bishop  
 377 West Line Street  
 Bishop, CA 93514

**RE: Report for A9D0338 Production Wells-EDT**

Dear Deston Dishion,

Thank you for using BSK Associates for your analytical testing needs. In the following pages, you will find the test results for the samples submitted to our laboratory on 4/3/2019. The results have been approved for release by our Laboratory Director as indicated by the authorizing signature below.

The samples were analyzed for the test(s) indicated on the Chain of Custody (see attached) and the results relate only to the samples analyzed. BSK certifies that the testing was performed in accordance with the quality system requirements specified in the 2009 TNI Standard. Any deviations from this standard or from the method requirements for each test procedure performed will be annotated alongside the analytical result or noted in the Case Narrative. Unless otherwise noted, the sample results are reported on an "as received" basis.

This certificate of analysis shall not be reproduced except in full, without written approval of the laboratory.

If additional clarification of any information is required, please contact your Project Manager, True Lee, at 559-497-2888.

Thank you again for using BSK Associates. We value your business and appreciate your loyalty.

Sincerely,

True Lee, Project Manager



Accredited in Accordance with NELAP  
 ORELAP #4021-009

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

A9D0338 FINAL 04162019 1311

**Case Narrative**

Project and Report Details	Invoice Details
----------------------------	-----------------

**Client:** City of Bishop  
**Report To:** Deston Dishion  
**Project #:** Sys# 1410001  
**Received:** 4/03/2019 - 10:26  
**Report Due:** 4/17/2019

**Invoice To:** City of Bishop  
**Invoice Attn:** Deston Dishion  
**Project PO#:** -

**Sample Receipt Conditions**

**Cooler:** Default Cooler  
**Temperature on Receipt °C:** 1.4

Containers Intact  
 COC/Labels Agree  
 Received On Blue Ice  
 Packing Material - Bubble Wrap  
 Sample(s) were received in temperature range.  
 Initial receipt at BSK-FAL

**Cooler:** New Cooler  
**Temperature on Receipt °C:** 4.2

**Data Qualifiers**

**The following qualifiers have been applied to one or more analytical results:**

CV0.0      CCV recovery was above method acceptance limits; no material impact on reported result as sample is ND for this parameter.

**Report Distribution**

Recipient(s)	Report Format	CC:
Deston Dishion	FINAL.RPT	
Deston Dishion	WRITEON.RPT	
Mike McDermott	FINAL.RPT	
Mike McDermott	WRITEON.RPT	
Sean McCarthy	FINAL.RPT	
Sean McCarthy	WRITEON.RPT	
Michele Thomas	FINAL.RPT	
Michele Thomas	WRITEON.RPT	



**A9D0338**

**Production Wells-EDT**

Sys# 1410001

**Certificate of Analysis**

**Sample ID:** A9D0338-01  
**Sampled By:** Jim Moffeit  
**Sample Description:** Well 1

**Sample Date - Time:** 04/02/19 - 12:25  
**Matrix:** Drinking Water  
**Sample Type:** Grab

**BSK Associates Laboratory Fresno**  
**Radiological**

Analyte	Method	Result	Units	Batch	Prepared	Analyzed	Qual
Gross Alpha	SM 7110C	3.52	pCi/L	A904535	04/04/19	04/05/19	
Gross Alpha 1.65 Sigma Uncertainty	SM 7110C	0.311	pCi/L	A904535	04/04/19	04/05/19	
Gross Alpha MDA95	SM 7110C	1.06	pCi/L	A904535	04/04/19	04/05/19	

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

A9D0338 FINAL 04162019 1311



**A9D0338**

**Production Wells-EDT**

Sys# 1410001

### Certificate of Analysis

**Sample ID:** A9D0338-02  
**Sampled By:** Jim Moffeit  
**Sample Description:** Well 2

**Sample Date - Time:** 04/02/19 - 12:45  
**Matrix:** Drinking Water  
**Sample Type:** Grab

### BSK Associates Laboratory Fresno Radiological

Analyte	Method	Result	Units	Batch	Prepared	Analyzed	Qual
Gross Alpha	SM 7110C	6.04	pCi/L	A904535	04/04/19	04/05/19	
Gross Alpha 1.65 Sigma Uncertainty	SM 7110C	0.397	pCi/L	A904535	04/04/19	04/05/19	
Gross Alpha MDA95	SM 7110C	1.06	pCi/L	A904535	04/04/19	04/05/19	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



**Certificate of Analysis**

**Sample ID:** A9D0338-03  
**Sampled By:** Jim Moffeit  
**Sample Description:** Well 2

**Sample Date - Time:** 04/02/19 - 12:46  
**Matrix:** Drinking Water  
**Sample Type:** Grab

**BSK Associates Laboratory Fresno**  
**General Chemistry**

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Aggressive Index		11				A904807	04/10/19	04/10/19	
Alkalinity as CaCO3	SM 2320B	50	3.0	mg/L	1	A904546	04/04/19	04/04/19	
Bicarbonate as CaCO3	SM 2320B	50	3.0	mg/L	1	A904546	04/04/19	04/04/19	
Carbonate as CaCO3	SM 2320B	ND	3.0	mg/L	1	A904546	04/04/19	04/04/19	
Hydroxide as CaCO3	SM 2320B	ND	3.0	mg/L	1	A904546	04/04/19	04/04/19	
Chloride	EPA 300.0	4.0	1.0	mg/L	1	A904479	04/03/19	04/03/19	
Color, Apparent	SM 2120B	ND	5.0	CU	1	A904234	04/03/19 18:41	04/03/19	
Conductivity @ 25C	SM 2510B	140	1.0	umhos/cm	1	A904546	04/04/19	04/04/19	
Fluoride	EPA 300.0	0.63	0.10	mg/L	1	A904479	04/03/19	04/03/19	
Langelier Index	SM 2330B	-0.74				A904692	04/08/19	04/08/19	
MBAS, Calculated as LAS, mol wt 340	SM 5540C	ND	0.050	mg/L	1	A904464	04/03/19 13:45	04/03/19	
Nitrate + Nitrite as N	EPA 300.0	ND	0.23	mg/L	1	A904479	04/03/19 20:39	04/03/19	
Nitrate as N	EPA 300.0	ND	0.23	mg/L	1	A904479	04/03/19 20:39	04/03/19	
Nitrite as N	EPA 300.0	ND	0.050	mg/L	1	A904479	04/03/19 20:39	04/03/19	
Threshold Odor	SM 2150B	ND	1.0	T.O.N.	1	A904233	04/03/19 11:28	04/03/19	
pH (1)	SM 4500-H+ B	7.9		pH Units	1	A904546	04/04/19	04/04/19	
pH Temperature in °C		21.9							
Sulfate as SO4	EPA 300.0	9.2	1.0	mg/L	1	A904479	04/03/19	04/03/19	
Total Dissolved Solids	SM 2540C	99	5.0	mg/L	1	A904601	04/05/19	04/08/19	
Turbidity	SM 2130B	0.66	0.10	NTU	1	A904234	04/03/19 19:03	04/03/19	

**Metals**

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Aluminum	EPA 200.7	ND	0.050	mg/L	1	A904531	04/04/19	04/05/19	
Antimony	EPA 200.8	ND	2.0	ug/L	1	A904531	04/04/19	04/10/19	
Arsenic	EPA 200.8	9.0	2.0	ug/L	1	A904531	04/04/19	04/10/19	
Barium	EPA 200.7	ND	0.050	mg/L	1	A904531	04/04/19	04/05/19	
Beryllium	EPA 200.8	ND	1.0	ug/L	1	A904531	04/04/19	04/10/19	CV0.0
Cadmium	EPA 200.8	ND	1.0	ug/L	1	A904531	04/04/19	04/10/19	
Calcium	EPA 200.7	14	0.10	mg/L	1	A904531	04/04/19	04/05/19	
Chromium	EPA 200.8	ND	10	ug/L	1	A904531	04/04/19	04/10/19	
Copper	EPA 200.8	ND	5.0	ug/L	1	A904531	04/04/19	04/10/19	
Iron	EPA 200.7	0.064	0.030	mg/L	1	A904531	04/04/19	04/05/19	
Lead	EPA 200.8	ND	1.0	ug/L	1	A904531	04/04/19	04/10/19	
Magnesium	EPA 200.7	1.1	0.10	mg/L	1	A904531	04/04/19	04/05/19	
Manganese	EPA 200.7	ND	0.010	mg/L	1	A904531	04/04/19	04/05/19	
Mercury	EPA 200.8	ND	0.20	ug/L	1	A904531	04/04/19	04/10/19	
Nickel	EPA 200.8	ND	10	ug/L	1	A904531	04/04/19	04/10/19	
Potassium	EPA 200.7	2.4	2.0	mg/L	1	A904531	04/04/19	04/05/19	
Selenium	EPA 200.8	ND	2.0	ug/L	1	A904531	04/04/19	04/10/19	
Silver	EPA 200.8	ND	10	ug/L	1	A904531	04/04/19	04/10/19	
Sodium	EPA 200.7	14	1.0	mg/L	1	A904531	04/04/19	04/05/19	
Thallium	EPA 200.8	ND	1.0	ug/L	1	A904531	04/04/19	04/10/19	

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A9D0338 FINAL 04162019 1311



**A9D0338**

**Production Wells-EDT**

Sys# 1410001

### Certificate of Analysis

**Sample ID:** A9D0338-03  
**Sampled By:** Jim Moffeit  
**Sample Description:** Well 2

**Sample Date - Time:** 04/02/19 - 12:46  
**Matrix:** Drinking Water  
**Sample Type:** Grab

#### Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Hardness as CaCO3	SM 2340B	38	0.41	mg/L					
Zinc	EPA 200.7	ND	0.050	mg/L	1	A904531	04/04/19	04/05/19	

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**A9D0338**

**Production Wells-EDT**

Sys# 1410001

**Certificate of Analysis**

**Sample ID:** A9D0338-04  
**Sampled By:** Jim Moffeit  
**Sample Description:** Well 4

**Sample Date - Time:** 04/02/19 - 13:05  
**Matrix:** Drinking Water  
**Sample Type:** Grab

**BSK Associates Laboratory Fresno  
Radiological**

Analyte	Method	Result	Units	Batch	Prepared	Analyzed	Qual
Gross Alpha	SM 7110C	ND	pCi/L	A904878	04/11/19	04/12/19	
Gross Alpha 1.65 Sigma Uncertainty	SM 7110C	<b>0.156</b>	pCi/L	A904878	04/11/19	04/12/19	
Gross Alpha MDA95	SM 7110C	<b>1.06</b>	pCi/L	A904878	04/11/19	04/12/19	

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**Certificate of Analysis**

**Sample ID:** A9D0338-05  
**Sampled By:** Jim Moffeit  
**Sample Description:** Well 4

**Sample Date - Time:** 04/02/19 - 13:00  
**Matrix:** Drinking Water  
**Sample Type:** Grab

**BSK Associates Laboratory Fresno**  
**General Chemistry**

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Aggressive Index		11				A904807	04/10/19	04/10/19	
Alkalinity as CaCO3	SM 2320B	41	3.0	mg/L	1	A904546	04/04/19	04/04/19	
Bicarbonate as CaCO3	SM 2320B	41	3.0	mg/L	1	A904546	04/04/19	04/04/19	
Carbonate as CaCO3	SM 2320B	ND	3.0	mg/L	1	A904546	04/04/19	04/04/19	
Hydroxide as CaCO3	SM 2320B	ND	3.0	mg/L	1	A904546	04/04/19	04/04/19	
Chloride	EPA 300.0	ND	1.0	mg/L	1	A904479	04/03/19	04/03/19	
Color, Apparent	SM 2120B	ND	5.0	CU	1	A904234	04/03/19 18:42	04/03/19	
Conductivity @ 25C	SM 2510B	96	1.0	umhos/cm	1	A904546	04/04/19	04/04/19	
Fluoride	EPA 300.0	0.11	0.10	mg/L	1	A904479	04/03/19	04/03/19	
Langelier Index	SM 2330B	-1.1				A904692	04/08/19	04/08/19	
MBAS, Calculated as LAS, mol wt 340	SM 5540C	ND	0.050	mg/L	1	A904464	04/03/19 13:45	04/03/19	
Nitrate + Nitrite as N	EPA 300.0	ND	0.23	mg/L	1	A904479	04/03/19 20:52	04/03/19	
Nitrate as N	EPA 300.0	ND	0.23	mg/L	1	A904479	04/03/19 20:52	04/03/19	
Nitrite as N	EPA 300.0	ND	0.050	mg/L	1	A904479	04/03/19 20:52	04/03/19	
Threshold Odor	SM 2150B	ND	1.0	T.O.N.	1	A904233	04/03/19 11:28	04/03/19	
pH (1)	SM 4500-H+ B	7.7		pH Units	1	A904546	04/04/19	04/04/19	
pH Temperature in °C		22.0							
Sulfate as SO4	EPA 300.0	4.1	1.0	mg/L	1	A904479	04/03/19	04/03/19	
Total Dissolved Solids	SM 2540C	73	5.0	mg/L	1	A904601	04/05/19	04/08/19	
Turbidity	SM 2130B	0.11	0.10	NTU	1	A904234	04/03/19 19:04	04/03/19	

**Metals**

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Aluminum	EPA 200.7	ND	0.050	mg/L	1	A904531	04/04/19	04/05/19	
Antimony	EPA 200.8	ND	2.0	ug/L	1	A904531	04/04/19	04/10/19	
Arsenic	EPA 200.8	ND	2.0	ug/L	1	A904531	04/04/19	04/10/19	
Barium	EPA 200.7	ND	0.050	mg/L	1	A904531	04/04/19	04/05/19	
Beryllium	EPA 200.8	ND	1.0	ug/L	1	A904531	04/04/19	04/10/19	CV0.0
Cadmium	EPA 200.8	ND	1.0	ug/L	1	A904531	04/04/19	04/10/19	
Calcium	EPA 200.7	12	0.10	mg/L	1	A904531	04/04/19	04/05/19	
Chromium	EPA 200.8	ND	10	ug/L	1	A904531	04/04/19	04/10/19	
Copper	EPA 200.8	ND	5.0	ug/L	1	A904531	04/04/19	04/10/19	
Iron	EPA 200.7	ND	0.030	mg/L	1	A904531	04/04/19	04/05/19	
Lead	EPA 200.8	ND	1.0	ug/L	1	A904531	04/04/19	04/10/19	
Magnesium	EPA 200.7	2.1	0.10	mg/L	1	A904531	04/04/19	04/05/19	
Manganese	EPA 200.7	ND	0.010	mg/L	1	A904531	04/04/19	04/05/19	
Mercury	EPA 200.8	ND	0.20	ug/L	1	A904531	04/04/19	04/10/19	
Nickel	EPA 200.8	ND	10	ug/L	1	A904531	04/04/19	04/10/19	
Potassium	EPA 200.7	2.0	2.0	mg/L	1	A904531	04/04/19	04/05/19	
Selenium	EPA 200.8	ND	2.0	ug/L	1	A904531	04/04/19	04/10/19	
Silver	EPA 200.8	ND	10	ug/L	1	A904531	04/04/19	04/10/19	
Sodium	EPA 200.7	4.6	1.0	mg/L	1	A904531	04/04/19	04/05/19	
Thallium	EPA 200.8	ND	1.0	ug/L	1	A904531	04/04/19	04/10/19	

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**A9D0338**

**Production Wells-EDT**

Sys# 1410001

### Certificate of Analysis

**Sample ID:** A9D0338-05  
**Sampled By:** Jim Moffeit  
**Sample Description:** Well 4

**Sample Date - Time:** 04/02/19 - 13:00  
**Matrix:** Drinking Water  
**Sample Type:** Grab

#### Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Hardness as CaCO3	SM 2340B	39	0.41	mg/L					
Zinc	EPA 200.7	ND	0.050	mg/L	1	A904531	04/04/19	04/05/19	

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**BSK Associates Laboratory Fresno**  
**General Chemistry Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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**EPA 300.0 - Quality Control**

**Batch: A904479**

Prepared: 4/3/2019

**Prep Method: Method Specific Preparation**

Analyst: BCB

**Blank (A904479-BLK1)**

Chloride	ND	1.0	mg/L							04/03/19	
Fluoride	ND	0.10	mg/L							04/03/19	
Nitrate + Nitrite as N	ND	0.23	mg/L							04/03/19	
Nitrate as N	ND	0.23	mg/L							04/03/19	
Nitrite as N	ND	0.050	mg/L							04/03/19	
Sulfate as SO4	ND	1.0	mg/L							04/03/19	

**Blank Spike (A904479-BS1)**

Chloride	100	1.0	mg/L	100	ND	100	90-110			04/03/19	
Fluoride	1.0	0.10	mg/L	1.0	ND	102	90-110			04/03/19	
Nitrate as N	22	0.23	mg/L	23	ND	99	90-110			04/03/19	
Nitrite as N	1.1	0.050	mg/L	1.0	ND	107	90-110			04/03/19	
Sulfate as SO4	100	1.0	mg/L	100	ND	100	90-110			04/03/19	

**Matrix Spike (A904479-MS1), Source: A9D0135-03**

Chloride	56	1.0	mg/L	50	5.5	100	80-120			04/03/19	
Fluoride	0.65	0.10	mg/L	0.50	0.15	101	80-120			04/03/19	
Nitrate as N	15	0.23	mg/L	11	3.5	100	80-120			04/03/19	
Nitrite as N	0.51	0.050	mg/L	0.50	ND	101	50-110			04/03/19	
Sulfate as SO4	66	1.0	mg/L	50	16	100	80-120			04/03/19	

**Matrix Spike (A904479-MS2), Source: A9D0253-01**

Chloride	51	1.0	mg/L	50	1.3	99	80-120			04/03/19	
Fluoride	0.51	0.10	mg/L	0.50	ND	101	80-120			04/03/19	
Nitrate as N	12	0.23	mg/L	11	0.63	97	80-120			04/03/19	
Nitrite as N	0.51	0.050	mg/L	0.50	ND	101	50-110			04/03/19	
Sulfate as SO4	51	1.0	mg/L	50	2.1	98	80-120			04/03/19	

**Matrix Spike Dup (A904479-MSD1), Source: A9D0135-03**

Chloride	56	1.0	mg/L	50	5.5	101	80-120	1	20	04/03/19	
Fluoride	0.66	0.10	mg/L	0.50	0.15	103	80-120	1	10	04/03/19	
Nitrate as N	15	0.23	mg/L	11	3.5	100	80-120	1	20	04/03/19	
Nitrite as N	0.51	0.050	mg/L	0.50	ND	102	50-110	1	20	04/03/19	
Sulfate as SO4	66	1.0	mg/L	50	16	101	80-120	1	20	04/03/19	

**Matrix Spike Dup (A904479-MSD2), Source: A9D0253-01**

Chloride	52	1.0	mg/L	50	1.3	101	80-120	2	20	04/03/19	
Fluoride	0.52	0.10	mg/L	0.50	ND	103	80-120	2	10	04/03/19	
Nitrate as N	12	0.23	mg/L	11	0.63	99	80-120	2	20	04/03/19	
Nitrite as N	0.52	0.050	mg/L	0.50	ND	103	50-110	2	20	04/03/19	
Sulfate as SO4	52	1.0	mg/L	50	2.1	100	80-120	2	20	04/03/19	

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**BSK Associates Laboratory Fresno  
General Chemistry Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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**SM 2120B - Quality Control**

**Batch: A904234**

Prepared: 4/3/2019

**Prep Method: Method Specific Preparation**

Analyst: SNH

**Blank (A904234-BLK1)**

Color, Apparent	ND	5.0	CU							04/03/19	
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**Duplicate (A904234-DUP1), Source: A9D0315-01**

Color, Apparent	ND	5.0	CU		ND			20		04/03/19	
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**Duplicate (A904234-DUP2), Source: A9D0441-06**

Color, Apparent	ND	5.0	CU		ND			20		04/03/19	
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**SM 2130B - Quality Control**

**Batch: A904234**

Prepared: 4/3/2019

**Prep Method: Method Specific Preparation**

Analyst: SNH

**Blank (A904234-BLK1)**

Turbidity	ND	0.10	NTU							04/03/19	
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**Duplicate (A904234-DUP1), Source: A9D0315-01**

Turbidity	0.22	0.10	NTU		0.20			10	20	04/03/19	
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**SM 2150B - Quality Control**

**Batch: A904233**

Prepared: 4/3/2019

**Prep Method: Method Specific Preparation**

Analyst: SNH

**Blank (A904233-BLK1)**

Threshold Odor	ND	1.0	T.O.N.							04/03/19	
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**Blank (A904233-BLK2)**

Threshold Odor	ND	1.0	T.O.N.							04/03/19	
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**Blank (A904233-BLK3)**

Threshold Odor	ND	1.0	T.O.N.							04/03/19	
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**Blank (A904233-BLK4)**

Threshold Odor	ND	1.0	T.O.N.							04/03/19	
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**SM 2320B - Quality Control**

**Batch: A904546**

Prepared: 4/4/2019

**Prep Method: Method Specific Preparation**

Analyst: CEG

**Blank (A904546-BLK1)**

Alkalinity as CaCO3	ND	3.0	mg/L							04/04/19	
Bicarbonate as CaCO3	ND	3.0	mg/L							04/04/19	
Carbonate as CaCO3	ND	3.0	mg/L							04/04/19	
Hydroxide as CaCO3	ND	3.0	mg/L							04/04/19	

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**BSK Associates Laboratory Fresno  
General Chemistry Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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**SM 2320B - Quality Control**

**Batch: A904546**

Prepared: 4/4/2019

**Prep Method: Method Specific Preparation**

Analyst: CEG

**Blank Spike (A904546-BS1)**

Alkalinity as CaCO3	95	3.0	mg/L	100	ND	95	80-120			04/04/19	
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**Blank Spike Dup (A904546-BSD1)**

Alkalinity as CaCO3	95	3.0	mg/L	100	ND	95	80-120	1	20	04/04/19	
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**Duplicate (A904546-DUP1), Source: A9D0545-01**

Alkalinity as CaCO3	280	3.0	mg/L		280			0	10	04/04/19	
Bicarbonate as CaCO3	280	3.0	mg/L		280			0	10	04/04/19	
Carbonate as CaCO3	ND	3.0	mg/L		ND				10	04/04/19	
Hydroxide as CaCO3	ND	3.0	mg/L		ND				10	04/04/19	

**SM 2510B - Quality Control**

**Batch: A904546**

Prepared: 4/4/2019

**Prep Method: Method Specific Preparation**

Analyst: CEG

**Blank Spike (A904546-BS1)**

Conductivity @ 25C	1400	1.0	umhos/cm	1400	ND	99	90-110			04/04/19	
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**Blank Spike Dup (A904546-BSD1)**

Conductivity @ 25C	1400	1.0	umhos/cm	1400	ND	99	90-110	0	20	04/04/19	
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**Duplicate (A904546-DUP1), Source: A9D0545-01**

Conductivity @ 25C	1500	1.0	umhos/cm		1500			0	20	04/04/19	
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**SM 2540C - Quality Control**

**Batch: A904601**

Prepared: 4/5/2019

**Prep Method: Method Specific Preparation**

Analyst: DEH DEP

**Blank (A904601-BLK1)**

Total Dissolved Solids	ND	5.0	mg/L							04/08/19	
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**Blank Spike (A904601-BS1)**

Total Dissolved Solids	990	5.0	mg/L	1000	ND	99	70-130			04/08/19	
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**Duplicate (A904601-DUP1), Source: A9C3178-01**

Total Dissolved Solids	87	5.0	mg/L		90			3	10	04/08/19	
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**Duplicate (A904601-DUP2), Source: A9D0467-01**

Total Dissolved Solids	310	5.0	mg/L		320			3	10	04/08/19	
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**BSK Associates Laboratory Fresno**  
**General Chemistry Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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**SM 4500-H+ B - Quality Control**

**Batch: A904546**

Prepared: 4/4/2019

**Prep Method: Method Specific Preparation**

Analyst: CEG

**Duplicate (A904546-DUP1), Source: A9D0545-01**

pH (1)	7.89		pH Units	7.88		0				04/04/19	
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**SM 5540C - Quality Control**

**Batch: A904464**

Prepared: 4/3/2019

**Prep Method: Method Specific Preparation**

Analyst: SYY

**Blank (A904464-BLK1)**

MBAS, Calculated as LAS, mol wt 340	ND	0.050	mg/L							04/03/19	
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**Blank Spike (A904464-BS1)**

MBAS, Calculated as LAS, mol wt 340	0.99	0.050	mg/L	1.0	ND	99	82-112			04/03/19	
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**Blank Spike Dup (A904464-BSD1)**

MBAS, Calculated as LAS, mol wt 340	0.99	0.050	mg/L	1.0	ND	99	82-112	0	20	04/03/19	
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**Matrix Spike (A904464-MS1), Source: A9D0316-01**

MBAS, Calculated as LAS, mol wt 340	0.85	0.050	mg/L	1.0	ND	85	80-112			04/03/19	
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**Matrix Spike Dup (A904464-MSD1), Source: A9D0316-01**

MBAS, Calculated as LAS, mol wt 340	0.84	0.050	mg/L	1.0	ND	84	80-112	0	20	04/03/19	
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**BSK Associates Laboratory Fresno  
Metals Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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**EPA 200.7 - Quality Control**

**Batch: A904531**  
**Prep Method: EPA 200.2**

Prepared: 4/4/2019  
Analyst: MDS

**Blank (A904531-BLK2)**

Aluminum	ND	0.050	mg/L							04/05/19	
Barium	ND	0.050	mg/L							04/05/19	
Calcium	ND	0.10	mg/L							04/05/19	
Iron	ND	0.030	mg/L							04/05/19	
Magnesium	ND	0.10	mg/L							04/05/19	
Manganese	ND	0.010	mg/L							04/05/19	
Potassium	ND	2.0	mg/L							04/05/19	
Sodium	ND	1.0	mg/L							04/05/19	
Zinc	ND	0.050	mg/L							04/05/19	

**Blank Spike (A904531-BS2)**

Aluminum	0.19	0.050	mg/L	0.20	ND	97	85-115			04/05/19	
Barium	0.21	0.050	mg/L	0.20	ND	104	85-115			04/05/19	
Calcium	4.1	0.10	mg/L	4.0	ND	104	85-115			04/05/19	
Iron	0.19	0.030	mg/L	0.20	ND	97	85-115			04/05/19	
Magnesium	4.1	0.10	mg/L	4.0	ND	101	85-115			04/05/19	
Manganese	0.21	0.010	mg/L	0.20	ND	107	85-115			04/05/19	
Potassium	4.3	2.0	mg/L	4.0	ND	108	85-115			04/05/19	
Sodium	4.1	1.0	mg/L	4.0	ND	102	85-115			04/05/19	
Zinc	0.20	0.050	mg/L	0.20	ND	101	85-115			04/05/19	

**Blank Spike Dup (A904531-BSD2)**

Aluminum	0.19	0.050	mg/L	0.20	ND	93	85-115	4	20	04/05/19	
Barium	0.21	0.050	mg/L	0.20	ND	105	85-115	0	20	04/05/19	
Calcium	4.1	0.10	mg/L	4.0	ND	104	85-115	0	20	04/05/19	
Iron	0.20	0.030	mg/L	0.20	ND	98	85-115	0	20	04/05/19	
Magnesium	4.1	0.10	mg/L	4.0	ND	102	85-115	0	20	04/05/19	
Manganese	0.21	0.010	mg/L	0.20	ND	107	85-115	0	20	04/05/19	
Potassium	4.3	2.0	mg/L	4.0	ND	107	85-115	1	20	04/05/19	
Sodium	4.1	1.0	mg/L	4.0	ND	102	85-115	0	20	04/05/19	
Zinc	0.20	0.050	mg/L	0.20	ND	101	85-115	0	20	04/05/19	

**Matrix Spike (A904531-MS3), Source: A9D0338-03**

Aluminum	0.24	0.050	mg/L	0.20	ND	119	70-130			04/05/19	
Barium	0.22	0.050	mg/L	0.20	ND	110	70-130			04/05/19	
Calcium	18	0.10	mg/L	4.0	14	104	70-130			04/05/19	
Iron	0.26	0.030	mg/L	0.20	0.064	99	70-130			04/05/19	
Magnesium	5.4	0.10	mg/L	4.0	1.1	107	70-130			04/05/19	
Manganese	0.23	0.010	mg/L	0.20	ND	113	70-130			04/05/19	
Potassium	6.8	2.0	mg/L	4.0	2.4	111	70-130			04/05/19	
Sodium	18	1.0	mg/L	4.0	14	98	70-130			04/05/19	
Zinc	0.22	0.050	mg/L	0.20	ND	108	70-130			04/05/19	

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

A9D0338 FINAL 04162019 1311

**BSK Associates Laboratory Fresno  
Metals Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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**EPA 200.7 - Quality Control**

Batch: A904531

Prepared: 4/4/2019

Prep Method: EPA 200.2

Analyst: MDS

**Matrix Spike (A904531-MS4), Source: A9D0338-05**

Aluminum	0.22	0.050	mg/L	0.20	ND	110	70-130			04/05/19	
Barium	0.22	0.050	mg/L	0.20	ND	108	70-130			04/05/19	
Calcium	16	0.10	mg/L	4.0	12	104	70-130			04/05/19	
Iron	0.20	0.030	mg/L	0.20	ND	100	70-130			04/05/19	
Magnesium	6.2	0.10	mg/L	4.0	2.1	103	70-130			04/05/19	
Manganese	0.22	0.010	mg/L	0.20	ND	109	70-130			04/05/19	
Potassium	6.3	2.0	mg/L	4.0	2.0	107	70-130			04/05/19	
Sodium	8.6	1.0	mg/L	4.0	4.6	99	70-130			04/05/19	
Zinc	0.21	0.050	mg/L	0.20	ND	104	70-130			04/05/19	

**Matrix Spike Dup (A904531-MSD3), Source: A9D0338-03**

Aluminum	0.23	0.050	mg/L	0.20	ND	114	70-130	4	20	04/05/19	
Barium	0.22	0.050	mg/L	0.20	ND	111	70-130	1	20	04/05/19	
Calcium	18	0.10	mg/L	4.0	14	108	70-130	1	20	04/05/19	
Iron	0.27	0.030	mg/L	0.20	0.064	103	70-130	2	20	04/05/19	
Magnesium	5.4	0.10	mg/L	4.0	1.1	108	70-130	1	20	04/05/19	
Manganese	0.23	0.010	mg/L	0.20	ND	114	70-130	1	20	04/05/19	
Potassium	6.8	2.0	mg/L	4.0	2.4	110	70-130	1	20	04/05/19	
Sodium	19	1.0	mg/L	4.0	14	101	70-130	1	20	04/05/19	
Zinc	0.22	0.050	mg/L	0.20	ND	109	70-130	1	20	04/05/19	

**Matrix Spike Dup (A904531-MSD4), Source: A9D0338-05**

Aluminum	0.22	0.050	mg/L	0.20	ND	108	70-130	2	20	04/05/19	
Barium	0.22	0.050	mg/L	0.20	ND	109	70-130	2	20	04/05/19	
Calcium	17	0.10	mg/L	4.0	12	111	70-130	2	20	04/05/19	
Iron	0.21	0.030	mg/L	0.20	ND	103	70-130	3	20	04/05/19	
Magnesium	6.4	0.10	mg/L	4.0	2.1	108	70-130	3	20	04/05/19	
Manganese	0.23	0.010	mg/L	0.20	ND	113	70-130	4	20	04/05/19	
Potassium	6.5	2.0	mg/L	4.0	2.0	111	70-130	3	20	04/05/19	
Sodium	8.8	1.0	mg/L	4.0	4.6	104	70-130	2	20	04/05/19	
Zinc	0.22	0.050	mg/L	0.20	ND	108	70-130	4	20	04/05/19	

**EPA 200.8 - Quality Control**

Batch: A904531

Prepared: 4/4/2019

Prep Method: EPA 200.2

Analyst: MAS

**Blank (A904531-BLK1)**

Antimony	ND	2.0	ug/L							04/10/19	
Arsenic	ND	2.0	ug/L							04/10/19	
Beryllium	ND	1.0	ug/L							04/10/19	
Cadmium	ND	1.0	ug/L							04/10/19	
Chromium	ND	10	ug/L							04/10/19	
Copper	ND	5.0	ug/L							04/10/19	

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A9D0338 FINAL 04162019 1311

**BSK Associates Laboratory Fresno  
Metals Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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**EPA 200.8 - Quality Control**

Batch: A904531

Prepared: 4/4/2019

Prep Method: EPA 200.2

Analyst: MAS

**Blank (A904531-BLK1)**

Lead	ND	1.0	ug/L							04/10/19	
Mercury	ND	0.20	ug/L							04/10/19	
Nickel	ND	10	ug/L							04/10/19	
Selenium	ND	2.0	ug/L							04/10/19	
Silver	ND	10	ug/L							04/10/19	
Thallium	ND	1.0	ug/L							04/10/19	

**Blank Spike (A904531-BS1)**

Antimony	200	2.0	ug/L	200	ND	100	85-115			04/10/19	
Arsenic	190	2.0	ug/L	200	ND	97	85-115			04/10/19	
Beryllium	220	1.0	ug/L	200	ND	109	85-115			04/10/19	
Cadmium	190	1.0	ug/L	200	ND	96	85-115			04/10/19	
Chromium	200	10	ug/L	200	ND	100	85-115			04/10/19	
Copper	190	5.0	ug/L	200	ND	95	85-115			04/10/19	
Lead	190	1.0	ug/L	200	ND	96	85-115			04/10/19	
Mercury	4.9	0.20	ug/L	5.0	ND	98	85-115			04/10/19	
Nickel	200	10	ug/L	200	ND	100	85-115			04/10/19	
Selenium	180	2.0	ug/L	200	ND	91	85-115			04/10/19	
Silver	98	10	ug/L	100	ND	98	75-125			04/10/19	
Thallium	190	1.0	ug/L	200	ND	96	85-115			04/10/19	

**Blank Spike Dup (A904531-BSD1)**

Antimony	200	2.0	ug/L	200	ND	99	85-115	1	20	04/10/19	
Arsenic	200	2.0	ug/L	200	ND	99	85-115	2	20	04/10/19	
Beryllium	220	1.0	ug/L	200	ND	109	85-115	1	20	04/10/19	
Cadmium	190	1.0	ug/L	200	ND	96	85-115	0	20	04/10/19	
Chromium	200	10	ug/L	200	ND	100	85-115	0	20	04/10/19	
Copper	190	5.0	ug/L	200	ND	96	85-115	1	20	04/10/19	
Lead	190	1.0	ug/L	200	ND	96	85-115	1	20	04/10/19	
Mercury	4.8	0.20	ug/L	5.0	ND	95	85-115	3	20	04/10/19	
Nickel	200	10	ug/L	200	ND	101	85-115	1	20	04/10/19	
Selenium	180	2.0	ug/L	200	ND	92	85-115	1	20	04/10/19	
Silver	98	10	ug/L	100	ND	98	75-125	0	20	04/10/19	
Thallium	190	1.0	ug/L	200	ND	96	85-115	0	20	04/10/19	

**Matrix Spike (A904531-MS1), Source: A9D0338-03**

Antimony	200	2.0	ug/L	200	ND	102	70-130			04/10/19	
Arsenic	210	2.0	ug/L	200	9.0	98	70-130			04/10/19	
Beryllium	220	1.0	ug/L	200	ND	109	70-130			04/10/19	
Cadmium	200	1.0	ug/L	200	ND	98	70-130			04/10/19	
Chromium	200	10	ug/L	200	ND	99	70-130			04/10/19	
Copper	190	5.0	ug/L	200	ND	97	70-130			04/10/19	
Lead	190	1.0	ug/L	200	ND	97	70-130			04/10/19	

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A9D0338 FINAL 04162019 1311

**BSK Associates Laboratory Fresno  
Metals Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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**EPA 200.8 - Quality Control**

Batch: A904531

Prepared: 4/4/2019

Prep Method: EPA 200.2

Analyst: MAS

**Matrix Spike (A904531-MS1), Source: A9D0338-03**

Mercury	4.9	0.20	ug/L	5.0	ND	98	70-130			04/10/19	
Nickel	200	10	ug/L	200	ND	101	70-130			04/10/19	
Selenium	180	2.0	ug/L	200	ND	91	70-130			04/10/19	
Silver	99	10	ug/L	100	ND	99	70-130			04/10/19	
Thallium	190	1.0	ug/L	200	ND	97	70-130			04/10/19	

**Matrix Spike (A904531-MS2), Source: A9D0338-05**

Antimony	200	2.0	ug/L	200	ND	102	70-130			04/10/19	
Arsenic	200	2.0	ug/L	200	ND	99	70-130			04/10/19	
Beryllium	220	1.0	ug/L	200	ND	111	70-130			04/10/19	
Cadmium	200	1.0	ug/L	200	ND	98	70-130			04/10/19	
Chromium	200	10	ug/L	200	ND	101	70-130			04/10/19	
Copper	190	5.0	ug/L	200	ND	97	70-130			04/10/19	
Lead	200	1.0	ug/L	200	ND	98	70-130			04/10/19	
Mercury	4.9	0.20	ug/L	5.0	ND	99	70-130			04/10/19	
Nickel	200	10	ug/L	200	ND	101	70-130			04/10/19	
Selenium	180	2.0	ug/L	200	ND	91	70-130			04/10/19	
Silver	99	10	ug/L	100	ND	99	70-130			04/10/19	
Thallium	190	1.0	ug/L	200	ND	97	70-130			04/10/19	

**Matrix Spike Dup (A904531-MSD1), Source: A9D0338-03**

Antimony	200	2.0	ug/L	200	ND	102	70-130	1	20	04/10/19	
Arsenic	210	2.0	ug/L	200	9.0	99	70-130	1	20	04/10/19	
Beryllium	220	1.0	ug/L	200	ND	109	70-130	0	20	04/10/19	
Cadmium	190	1.0	ug/L	200	ND	97	70-130	1	20	04/10/19	
Chromium	200	10	ug/L	200	ND	101	70-130	2	20	04/10/19	
Copper	190	5.0	ug/L	200	ND	97	70-130	1	20	04/10/19	
Lead	190	1.0	ug/L	200	ND	95	70-130	2	20	04/10/19	
Mercury	4.8	0.20	ug/L	5.0	ND	97	70-130	2	20	04/10/19	
Nickel	200	10	ug/L	200	ND	99	70-130	2	20	04/10/19	
Selenium	180	2.0	ug/L	200	ND	91	70-130	0	20	04/10/19	
Silver	98	10	ug/L	100	ND	98	70-130	1	20	04/10/19	
Thallium	190	1.0	ug/L	200	ND	96	70-130	1	20	04/10/19	

**Matrix Spike Dup (A904531-MSD2), Source: A9D0338-05**

Antimony	210	2.0	ug/L	200	ND	104	70-130	2	20	04/10/19	
Arsenic	200	2.0	ug/L	200	ND	100	70-130	2	20	04/10/19	
Beryllium	230	1.0	ug/L	200	ND	115	70-130	3	20	04/10/19	
Cadmium	200	1.0	ug/L	200	ND	100	70-130	2	20	04/10/19	
Chromium	210	10	ug/L	200	ND	103	70-130	2	20	04/10/19	
Copper	200	5.0	ug/L	200	ND	98	70-130	1	20	04/10/19	
Lead	200	1.0	ug/L	200	ND	99	70-130	1	20	04/10/19	
Mercury	5.0	0.20	ug/L	5.0	ND	101	70-130	2	20	04/10/19	

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A9D0338 FINAL 04162019 1311



**BSK Associates Laboratory Fresno  
Metals Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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**EPA 200.8 - Quality Control**

**Batch: A904531**

Prepared: 4/4/2019

**Prep Method: EPA 200.2**

Analyst: MAS

**Matrix Spike Dup (A904531-MSD2), Source: A9D0338-05**

Nickel	200	10	ug/L	200	ND	102	70-130	1	20	04/10/19	
Selenium	180	2.0	ug/L	200	ND	91	70-130	0	20	04/10/19	
Silver	100	10	ug/L	100	ND	100	70-130	2	20	04/10/19	
Thallium	200	1.0	ug/L	200	ND	99	70-130	2	20	04/10/19	

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

**BSK Associates Laboratory Fresno  
Radiological Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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**SM 7110C - Quality Control**

**Batch: A904535**

Prepared: 4/4/2019

**Prep Method: EPA 00-02**

Analyst: TSY

**Blank (A904535-BLK1)**

Gross Alpha	ND	3	pCi/L							04/05/19	
Gross Alpha 1.65 Sigma Uncertainty	ND	0.00	pCi/L							04/05/19	
Gross Alpha MDA95	ND	0.00	pCi/L							04/05/19	

**Blank Spike (A904535-BS1)**

Gross Alpha	31.7	3	pCi/L	30	ND	106	73-127			04/05/19	
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**Blank Spike Dup (A904535-BSD1)**

Gross Alpha	30.2	3	pCi/L	30	ND	101	73-127	5	50	04/05/19	
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**Matrix Spike (A904535-MS1), Source: A9D0283-01**

Gross Alpha	95.7	3	pCi/L	120	3.02	77	70-130			04/05/19	
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**Matrix Spike Dup (A904535-MSD1), Source: A9D0283-01**

Gross Alpha	107	3	pCi/L	120	3.02	86	70-130	11	50	04/05/19	
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**SM 7110C - Quality Control**

**Batch: A904878**

Prepared: 4/11/2019

**Prep Method: EPA 00-02**

Analyst: TSY

**Blank (A904878-BLK1)**

Gross Alpha	ND	3	pCi/L							04/12/19	
Gross Alpha 1.65 Sigma Uncertainty	ND	0.00	pCi/L							04/12/19	
Gross Alpha MDA95	ND	0.00	pCi/L							04/12/19	

**Blank Spike (A904878-BS1)**

Gross Alpha	35.0	3	pCi/L	30	ND	117	73-127			04/12/19	
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**Blank Spike Dup (A904878-BSD1)**

Gross Alpha	31.5	3	pCi/L	30	ND	105	73-127	11	50	04/12/19	
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**Matrix Spike (A904878-MS1), Source: A9D0481-03**

Gross Alpha	135	3	pCi/L	120	ND	112	70-130			04/12/19	
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**Matrix Spike Dup (A904878-MSD1), Source: A9D0481-03**

Gross Alpha	124	3	pCi/L	120	ND	103	70-130	9	50	04/12/19	
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**Certificate of Analysis**

**Notes:**

- The Chain of Custody document and Sample Integrity Sheet are part of the analytical report.
- Any remaining sample(s) for testing will be disposed of according to BSK’s sample retention policy unless other arrangements are made in advance.
- All positive results for EPA Methods 504.1 and 524.2 require the analysis of a Field Reagent Blank (FRB) to confirm that the results are not a contamination error from field sampling steps. If Field Reagent Blanks were not submitted with the samples, this method requirement has not been performed.
- Samples collected by BSK Analytical Laboratories were collected in accordance with the BSK Sampling and Collection Standard Operating Procedures.
- J-value is equivalent to DNQ (Detected, not quantified) which is a trace value. A trace value is an analyte detected between the MDL and the laboratory reporting limit. This result is of an unknown data quality and is only qualitative (estimated). Baseline noise, calibration curve extrapolation below the lowest calibrator, method blank detections, and integration artifacts can all produce apparent DNQ values, which contribute to the un-reliability of these values.
- (1) - Residual chlorine and pH analysis have a 15 minute holding time for both drinking and waste water samples as defined by the EPA and 40 CFR 136. Waste water and ground water (monitoring well) samples must be field filtered to meet the 15 minute holding time for dissolved metals.
- Field tests are outside the scope of laboratory accreditation and there is no certification available for field testing.
- Summations of analytes (i.e. Total Trihalomethanes) may appear to add individual amounts incorrectly, due to rounding of analyte values occurring before or after the total value is calculated, as well as rounding of the total value.
- RL Multiplier is the factor used to adjust the reporting limit (RL) due to variations in sample preparation procedures and dilutions required for matrix interferences.
- Due to the subjective nature of the Threshold Odor Method , all characterizations of the detected odor are the opinion of the panel of analysts. The characterizations can be found in Standard Methods 2170B Figure 2170:1.
- The MCLs provided in this report (if applicable) represent the primary MCLs for that analyte.

**Definitions**

mg/L:	Milligrams/Liter (ppm)	MDL:	Method Detection Limit	MDA95:	Min. Detected Activity
mg/Kg:	Milligrams/Kilogram (ppm)	RL:	Reporting Limit: DL x Dilution	MPN:	Most Probable Number
µg/L:	Micrograms/Liter (ppb)	ND:	None Detected below MRL/MDL	CFU:	Colony Forming Unit
µg/Kg:	Micrograms/Kilogram (ppb)	pCi/L:	PicoCuries per Liter	Absent:	Less than 1 CFU/100mLs
%:	Percent	RL Mult:	RL Multiplier	Present:	1 or more CFU/100mLs
NR:	Non-Reportable	MCL:	Maximum Contaminant Limit	U:	The analyte was not detected at or above the reported sample quantitation limit.

**Please see the individual Subcontract Lab's report for applicable certifications.**

**BSK is not accredited under the NELAP program for the following parameters:**

- Aggressive Index
- Langelier Index
- Threshold Odor

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**Certificate of Analysis**

**Certifications:** Please refer to our website for a copy of our Accredited Fields of Testing under each certification.

**Fresno**

State of California - ELAP	1180	State of Hawaii	4021
Los Angeles CSD	9254479	NELAP certified	4021-011
State of Nevada	CA000792019-1	State of Oregon - NELAP	4021-011
EPA - UCMR4	CA00079	State of Washington	C997-18

**Sacramento**

State of California - ELAP	2435
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**San Bernardino**

State of California - ELAP	2993	Los Angeles CSD	9254478
NELAP certified	4119-003	State of Oregon - NELAP	4119-003

**Vancouver**

NELAP certified	WA100008-011	State of Oregon - NELAP	WA100008-011
State of Washington	C824-18b		



A9D0338



04032019

bisho1417

Turnaround: Standard

Due Date: 4/17/2019



City of Bishop



Printed: 4/3/2019 2:00:36PM

Page 1 of 1

Page 22 of 24



1414 Stanislaus St., Fresno, CA 93706  
 (559) 497-2888 · Fax (559) 497-2893  
 www.bskassociates.com

**Turnaround Time Request**  
 Standard - 10 business days  
 Rush (Surcharge may apply)  
 Date needed:

A9D0338  
 bisho1417

04/03/2019  
 10



Required Fields

Temp: Thermometer ID:

Company/Client Name:

**City of Bishop**

Report Attention:  
 Deston Dishion  
 Additional ccs:

Invoice To:  
 City of Bishop  
 PO#:

Phone:  
 7609371335  
 Fax:  
 Email: [ddishion@cityofbishop.com](mailto:ddishion@cityofbishop.com)

Address:  
 377 W Line St

City:  
 Bishop

State:  
 Ca  
 Zip:  
 93514

Project:  
 Drinking Water Wells

Project #:

Reporting Options:  
 Trace (+Flag)  Swamp  EDD Type: \_\_\_\_\_

Regulatory Carbon Copies  
 SWRCB (Drinking Water)  
 Merced Co  
 Madera Co  
 Tulare Co  
 Other: \_\_\_\_\_

Regulatory Compliance  
 EDT to California SWRCB (Drinking Water)  
 System Number: 1410001  
 Geotracker #: \_\_\_\_\_

Sampler Name (Printed/Signature):  
**Jim Moffett**

Matrix Types: SW=Surface Water BW=Boiled Water GW=Ground Water WW=Waste Water STW=Storm Water DW=Drinking Water SO=Solid

#	Sample Description*	Date	Sampled* Time	Matrix*	Comments / Station Code / WTRAX	Gross Alpha			General Physical			General Mineral/Inorganic				
1	Well 1	4-2-19	12:25	DW		X										
2	Well 2	4-2-19	12:45	DW		X										
3	Well 2	4-2-19	12:46	DW		X										
4	Well 4	4-2-19	13:05	DW			X									
5	Well 4	4-2-19	13:00	DW			X									

Requisitioned by: (Signature and Printed Name)  
**Jim Moffett**

Company: **City of Bishop**

Date: **4/2/19** Time: **13:15**

Received by: (Signature and Printed Name)  
**4319**

Company: **City of Bishop**

Received Date: **4/2/19** Time: **13:15**

Payment Received at Delivery: \_\_\_\_\_

Amount: \_\_\_\_\_

Shipping Method: **CONTRAC** UPS **GSO** WALK-IN **FED EX** Courier: \_\_\_\_\_

Custody Seal: Y/N **Y/N** Chilling Process Begun: Y/N **Y/N**

PIA#: \_\_\_\_\_

Check / Cash

Payment for services rendered as noted in this invoice. If not so paid, account balances are deemed delinquent. Delinquent balances are subject to monthly service charges and interest specified in BSK's current Standard Terms and Conditions. The person signing for the Client/Company acknowledges that they are either the Client or an authorized agent to the Client, that the Client agrees to be responsible for payment for the services on the Chain of Custody, and agrees to BSK's terms and conditions for laboratory services unless contractually bound otherwise. BSK's current terms and conditions can be found at [www.bskassociates.com/SST/ChainofCustodyInstructions.pdf](http://www.bskassociates.com/SST/ChainofCustodyInstructions.pdf)

SR-FH-0012-08

# Sample Integrity



BSK Bottles: Yes No Page 1 of 1

COC Info		Yes	No	NA	Were correct containers and preservatives received for the tests requested?					Yes	No	NA
Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 8^{\circ}\text{C}$		<u>Yes</u>	No	NA						<u>Yes</u>	No	NA
If samples were taken today, is there evidence that chilling has begun?		Yes	No	<u>NA</u>	Bubbles Present VOAs (524.2/TCP/TTHM)?					Yes	No	<u>NA</u>
Did all bottles arrive unbroken and intact?		<u>Yes</u>	No		TB Received? (Check Method Below)					Yes	No	<u>NA</u>
Did all bottle labels agree with COC?		<u>Yes</u>	No		Was a sufficient amount of sample received?					<u>Yes</u>	No	
Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?		Yes	No	<u>NA</u>	Was PM notified of discrepancies?					Yes	No	<u>NA</u>
					PM:	By/Time:						
250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V)		Checks	Passed?		1	2	3	4	5			
Bact. $\text{Na}_2\text{S}_2\text{O}_3$		—	—									
None (P) White Cap		—	—					1C				1C
Cr6 (P) Lt. Green Label/Blue Cap $\text{NH}_4\text{OH}(\text{NH}_4)_2\text{SO}_4$ DW		Cl, pH > 8	P F									
Cr6 (P) Pink Label/Blue Cap $\text{NH}_4\text{OH}(\text{NH}_4)_2\text{SO}_4$ WW		pH 9.3-9.7	P F									
Cr6 (P) Black Label/Blue Cap $\text{NH}_4\text{OH}(\text{NH}_4)_2\text{SO}_4$ 7199 ***24 HOUR HOLD TIME***		pH 9.0-9.5	P F									
HNO <sub>3</sub> (P) Red Cap or HCl (P) Purple Cap/Lt. Blue Label		—	—		2C	2C	1A	2C	1A			
H <sub>2</sub> SO <sub>4</sub> (P) or (AG) Yellow Cap/Label		pH < 2	P F									
NaOH (P) Green Cap		Cl, pH > 10	P F									
NaOH + ZnAc (P)		pH > 9	P F									
Dissolved Oxygen 300ml (g)		—	—									
None (AG) 808/8081/8082, 625, 632/8321, 8151, 8270		—	—					1B				1B
HCl (AG) Lt. Blue Label O&G, Diesel, TCP		—	—									
Ascorbic, EDTA, KH <sub>2</sub> Ct (AG) Pink Label 525		—	—									
Na <sub>2</sub> SO <sub>3</sub> 250mL (AG) Neon Green Label 515		—	—									
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> 1 Liter (Brown P) 549		—	—									
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (AG) Blue Label 548, TTHM, 524		—	—									
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (CG) Blue Label 504, 505, 547		—	—									
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> + MCAA (CG) Orange Label 531		pH < 3	P F									
NH <sub>4</sub> Cl (AG) Purple Label 552		—	—									
EDA (AG) Brown Label DBPs		—	—									
HCL (CG) 524.2, BTEX, Gas, MTBE, 8260/624		—	—									
Buffer pH 4 (CG)		—	—									
H <sub>3</sub> PO <sub>4</sub> (CG) Salmon Label		—	—									
Other:												
Asbestos 1L (P) w/ Foil / LL Metals Bottle		—	—									
Bottled Water		—	—									
Clear Glass 250mL / 500mL / 1 Liter		—	—									
Solids: Brass / Steel / Plastic Bag		—	—									
Split	Container	Preservative	Date/Time/Initials		Container	Preservative	Date/Time/Initials					
	<u>(S) P</u>	<u>2SP P</u>	<u>HNO<sub>3</sub></u>	<u>3/19/11</u>								
Comments								✓ Indicates Blanks Received 504 ___ 524.2 ___ TCP ___ TTHM ___ 537 ___ 8260/624 ___				

Labeled by: [Signature] @ 1129

Labels checked by: [Signature] @ 1125

RUSH Paged by: \_\_\_\_\_ @ \_\_\_\_\_



BSK Associates Laboratory Fresno  
1414 Stanislaus St  
Fresno, CA 93706  
559-497-2888 (Main)  
559-485-6935 (FAX)

**ADD1579**  
**4/27/2020**  
Invoice: AD08192

Deston Dishion  
City of Bishop  
377 West Line Street  
Bishop, CA 93514

**RE: Report for ADD1579 Production Wells-EDT**

Dear Deston Dishion,

Thank you for using BSK Associates for your analytical testing needs. In the following pages, you will find the test results for the samples submitted to our laboratory on 4/15/2020. The results have been approved for release by our Laboratory Director as indicated by the authorizing signature below.

The samples were analyzed for the test(s) indicated on the Chain of Custody (see attached) and the results relate only to the samples analyzed. BSK certifies that the testing was performed in accordance with the quality system requirements specified in the 2009 TNI Standard. Any deviations from this standard or from the method requirements for each test procedure performed will be annotated alongside the analytical result or noted in the Case Narrative. Unless otherwise noted, the sample results are reported on an "as received" basis.

This certificate of analysis shall not be reproduced except in full, without written approval of the laboratory.

If additional clarification of any information is required, please contact your Project Manager, True Lee, at 559-497-2888.

Thank you again for using BSK Associates. We value your business and appreciate your loyalty.

Sincerely,

True Lee, Project Manager



Accredited in Accordance with NELAP  
ORELAP #4021-009

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

ADD1579 FINAL 04272020 1801

**Case Narrative**

Project and Report Details	Invoice Details
----------------------------	-----------------

**Client:** City of Bishop  
**Report To:** Deston Dishion  
**Project #:** Sys# 1410001  
**Received:** 4/15/2020 - 11:11  
**Report Due:** 4/29/2020

**Invoice To:** City of Bishop  
**Invoice Attn:** Deston Dishion  
**Project PO#:** -

**Sample Receipt Conditions**

<p><b>Cooler:</b> Default Cooler  <b>Temperature on Receipt °C:</b> 3.9</p>	<p>Containers Intact  COC/Labels Agree  Received On Blue Ice  Packing Material - Other  Sample(s) were received in temperature range.  Initial receipt at BSK-FAL</p>
---	---

**Data Qualifiers**

The following qualifiers have been applied to one or more analytical results:

\*\*\*None applied\*\*\*

**Report Distribution**

Recipient(s)	Report Format	CC:
Deston Dishion	FINAL.RPT	
Deston Dishion	WRITEON.RPT	
Mike McDermott	FINAL.RPT	
Mike McDermott	WRITEON.RPT	
Sean McCarthy	FINAL.RPT	
Sean McCarthy	WRITEON.RPT	
Michele Thomas	FINAL.RPT	
Michele Thomas	WRITEON.RPT	



**ADD1579**

**Production Wells-EDT**

Sys# 1410001

**Certificate of Analysis**

**Sample ID:** ADD1579-01  
**Sampled By:** Jim Moffeit  
**Sample Description:** Well 2

**Sample Date - Time:** 04/14/2020 - 12:20  
**Matrix:** Drinking Water  
**Sample Type:** Grab

**BSK Associates Laboratory Fresno**  
**General Chemistry**

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Nitrate as N	EPA 300.0	ND	0.23	mg/L	1	ADD0725	04/15/20 20:40	04/15/20	

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*





**ADD1579**

*Production Wells-EDT*

Sys# 1410001

**Certificate of Analysis**

**Sample ID:** ADD1579-02  
**Sampled By:** Jim Moffeit  
**Sample Description:** Well 4

**Sample Date - Time:** 04/14/2020 - 12:35  
**Matrix:** Drinking Water  
**Sample Type:** Grab

**BSK Associates Laboratory Fresno**  
**General Chemistry**

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Nitrate as N	EPA 300.0	ND	0.23	mg/L	1	ADD0725	04/15/20 20:59	04/15/20	

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

**BSK Associates Laboratory Fresno**  
**General Chemistry Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
---------	--------	----	-------	-------------	---------------	------	-------------	-----	-----------	---------------	------

**EPA 300.0 - Quality Control**

**Batch: ADD0725**

Prepared: 4/15/2020

**Prep Method: Method Specific Preparation**

Analyst: BCB

**Blank (ADD0725-BLK1)**

Nitrate as N	ND	0.23	mg/L							04/15/20	
--------------	----	------	------	--	--	--	--	--	--	----------	--

**Blank Spike (ADD0725-BS1)**

Nitrate as N	21	0.23	mg/L	23	ND	95	90-110			04/15/20	
--------------	----	------	------	----	----	----	--------	--	--	----------	--

**Matrix Spike (ADD0725-MS1), Source: ADD1550-01**

Nitrate as N	13	0.23	mg/L	11	0.74	106	80-120			04/15/20	
--------------	----	------	------	----	------	-----	--------	--	--	----------	--

**Matrix Spike (ADD0725-MS2), Source: ADD1554-05**

Nitrate as N	15	0.23	mg/L	11	3.2	108	80-120			04/15/20	
--------------	----	------	------	----	-----	-----	--------	--	--	----------	--

**Matrix Spike Dup (ADD0725-MSD1), Source: ADD1550-01**

Nitrate as N	13	0.23	mg/L	11	0.74	110	80-120	4	20	04/15/20	
--------------	----	------	------	----	------	-----	--------	---	----	----------	--

**Matrix Spike Dup (ADD0725-MSD2), Source: ADD1554-05**

Nitrate as N	16	0.23	mg/L	11	3.2	112	80-120	3	20	04/15/20	
--------------	----	------	------	----	-----	-----	--------	---	----	----------	--

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

**Certificate of Analysis**

**Notes:**

- The Chain of Custody document and Sample Integrity Sheet are part of the analytical report.
- Any remaining sample(s) for testing will be disposed of according to BSK's sample retention policy unless other arrangements are made in advance.
- All positive results for EPA Methods 504.1 and 524.2 require the analysis of a Field Reagent Blank (FRB) to confirm that the results are not a contamination error from field sampling steps. If Field Reagent Blanks were not submitted with the samples, this method requirement has not been performed.
- Samples collected by BSK Analytical Laboratories were collected in accordance with the BSK Sampling and Collection Standard Operating Procedures.
- J-value is equivalent to DNQ (Detected, not quantified) which is a trace value. A trace value is an analyte detected between the MDL and the laboratory reporting limit. This result is of an unknown data quality and is only qualitative (estimated). Baseline noise, calibration curve extrapolation below the lowest calibrator, method blank detections, and integration artifacts can all produce apparent DNQ values, which contribute to the un-reliability of these values.
- (1) - Residual chlorine and pH analysis have a 15 minute holding time for both drinking and waste water samples as defined by the EPA and 40 CFR 136. Waste water and ground water (monitoring well) samples must be field filtered to meet the 15 minute holding time for dissolved metals.
- Field tests are outside the scope of laboratory accreditation and there is no certification available for field testing.
- Summations of analytes (i.e. Total Trihalomethanes) may appear to add individual amounts incorrectly, due to rounding of analyte values occurring before or after the total value is calculated, as well as rounding of the total value.
- RL Multiplier is the factor used to adjust the reporting limit (RL) due to variations in sample preparation procedures and dilutions required for matrix interferences.
- Due to the subjective nature of the Threshold Odor Method, all characterizations of the detected odor are the opinion of the panel of analysts. The characterizations can be found in Standard Methods 2170B Figure 2170:1.
- The MCLs provided in this report (if applicable) represent the primary MCLs for that analyte.
- (2) - Formerly known as Bis(2-Chloroisopropyl) ether.

**Definitions**

mg/L:	Milligrams/Liter (ppm)	MDL:	Method Detection Limit	MDA95:	Min. Detected Activity
mg/Kg:	Milligrams/Kilogram (ppm)	RL:	Reporting Limit: DL x Dilution	MPN:	Most Probable Number
µg/L:	Micrograms/Liter (ppb)	ND:	None Detected below MRL/MDL	CFU:	Colony Forming Unit
µg/Kg:	Micrograms/Kilogram (ppb)	pCi/L:	PicoCuries per Liter	Absent:	Less than 1 CFU/100mLs
%:	Percent	RL Mult:	RL Multiplier	Present:	1 or more CFU/100mLs
NR:	Non-Reportable	MCL:	Maximum Contaminant Limit	U:	The analyte was not detected at or above the reported sample quantitation limit.

**Please see the individual Subcontract Lab's report for applicable certifications.**

**BSK is not accredited under the NELAP program for the following parameters:**

**\*\*NA\*\***

**Certificate of Analysis**

**Certifications:** Please refer to our website for a copy of our Accredited Fields of Testing under each certification.

2435

**Fresno**

State of California - ELAP	1180	State of Hawaii	4021
Los Angeles CSD	9254479	NELAP certified	4021-013
State of Nevada	CA000792020-2	State of Oregon - NELAP	4021-013
EPA - UCMR4	CA00079	State of Washington	C997-20

**San Bernardino**

State of California - ELAP	2993	Los Angeles CSD	9254478
NELAP certified	4119-004	State of Oregon - NELAP	4119-004

**Vancouver**

NELAP certified	WA100008-012	State of Oregon - NELAP	WA100008-013
State of Washington	C824-19		



# Sample Integrity

BSK Bottles: Yes No Page 1 of 1

COC Info	Is temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 8^{\circ}\text{C}$	<u>Yes</u> No NA	Are correct containers and preservatives received for the tests requested?	<u>Yes</u> No NA		
	If samples were taken today, is there evidence that chilling has begun?	Yes No <u>NA</u>	Bubbles Present in VOA (524.2/TCP/TTHM)? TB Received? (Check Method Below)	Yes No <u>NA</u> Yes No <u>NA</u>		
	Did all bottles arrive unbroken and intact?	<u>Yes</u> No	Is sufficient amount of sample received?	<u>Yes</u> No		
	Do all bottle labels agree with COC?	<u>Yes</u> No	Do samples have a hold time <72 hours?	<u>Yes</u> No		
Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?	Yes No <u>NA</u>	Has PM been notified of discrepancies? PM: _____ By/Time: _____	Yes No <u>NA</u>			
Bottles Received "_" means preservation/chlorine checks are either N/A or are performed in the lab	250ml(A) 500ml(B) 1Liter(C) 40mlVOA(V) 125ml(D)	Checks	Passed?	1-2		
	Bacti Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	—	—			
	None (P) White Cap	—	—	1A		
	Cr6 (P) Lt. Green Label/Blue Cap NH <sub>4</sub> OH(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> DW	Cl, pH > 8	P F			
	Cr6 (P) Pink Label/Blue Cap NH <sub>4</sub> OH(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> WW	pH 9.3-9.7	P F			
	Cr6 (P) Black Label/Blue Cap NH <sub>4</sub> OH(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> 7199 ***24 HOUR HOLD TIME***	pH 9.0-9.5	P F	4/15/2020		
	HNO <sub>3</sub> (P) Red Cap or HCl (P) Purple Cap/Lt. Blue Label	—	—			
	H <sub>2</sub> SO <sub>4</sub> (P) or (AG) Yellow Cap/Label	pH < 2	P F			
	NaOH (P) Green Cap	Cl, pH >10	P F			
	NaOH + ZnAc (P)	pH > 9	P F			
	Dissolved Oxygen 300ml (g)	—	—			
	None (AG) 608/8081/8082, 625, 632/8321, 8151, 8270	—	—			
	HCl (AG) Lt. Blue Label O&G, Diesel, TCP	—	—			
	Ascorbic, EDTA, KH <sub>2</sub> Ct (AG) Pink Label 525	—	—			
	Na <sub>2</sub> SO <sub>3</sub> 250mL (AG) Neon Green Label 515	—	—			
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> 1 Liter (Brown P) 549	—	—			
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (AG) Blue Label 548, THM, 524	—	—			
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (CG) Blue Label 504, 505, 547	—	—			
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> + MCAA (CG) Orange Label 531	pH < 3	P F			
	NH <sub>4</sub> Cl (AG) Purple Label 552	—	—			
	EDA (AG) Brown Label DBPs	—	—			
	HCL (CG) 524.2, BTEX, Gas, MTBE, 8260/624	—	—			
	Buffer pH 4 (CG)	—	—			
	H <sub>3</sub> PO <sub>4</sub> (CG) Salmon Label	—	—			
	Trizma – EPA 537.1	—	—			
	Other:					
	Asbestos 1L (P) w/ Foil / LL Metals Bottle	—	—			
Bottled Water	—	—				
Clear Glass 125mL / 250mL / 500mL / 1 Liter	—	—				
Solids: Brass / Steel / Plastic Bag	—	—				
Split	Container	Preservative	Date/Time/Initials	Container	Preservative	Date/Time/Initials
	S P			S P		
	S P			S P		
Comments	✓ Indicates Blanks Received 504 ___ 524.2 ___ TCP ___ TTHM ___ 537 ___ 8260/624 ___					

Scanned: *[Signature]*



1414 Stanislaus St., Fresno, CA 93706  
 (559) 497-2888 · Fax (559) 497-2893  
 www.bskassociates.com

59  
#164

Turnaround Time Request  
 Standard - 10 business days  
 Rush (Surcharge may apply)  
 Date needed:

ADD1579 bisho1417 04/15/2020  
 10

Company/Client Name: **City of Bishop**

Address: **377 W. Line St.**

Report Attention: **Bishop**

City: **Bishop** State: **CA** Zip: **93514**

Phone: **760.873.5458** Fax: **760.873.5458**

E-mail: **ddishon@cityofbishop.com**

Project: **Nitrate**

Project #:

Reporting Options:

Trace (U-Flag)  Swamp  EDD Type: \_\_\_\_\_

Sampler Name (Printed/Signature): **Jim Moffett / Jim**

Regulatory Carbon Copies  
 SWRCB (Drinking Water)  
 Merced Co  
 Madera Co  
 Fresno Co  
 Tulare Co  
 Other \_\_\_\_\_

Regulatory Compliance  
 EDT to California SWRCB (Drinking Water)  
 System Number: **1410001**  
 Geotracker # \_\_\_\_\_

Matrix Types: SW=Surface Water BW=Bottled Water GW=Ground Water WW=Waste Water STW=Storm Water DW=Drinking Water SO=Solid

Sample Description\* **Nitrate**

#	Sample Description*	Sampled*		Matrix*	Comments / Station Code / WTRAX
		Date	Time		
Well 2		4/14/20	1220	DW	
Well 4		4/14/20	1235	DW	

419020

*[Handwritten signature]*

Relinquished by: (Signature and Printed Name) **Jim Moffett**

Company: **C.O.B.**

Date: **4/14/20** Time: **1245**

Received by: (Signature and Printed Name) **419020**

Company: **419020**

Received at Lab by: (Signature and Printed Name)

Shipping Method: **Wet** **Blue** **None**

UPS **GSO**

WALK-IN

**FED EX**

Counter: **4190201111**

Chilling Process Begun: **Y/N**

Amount: **Y/N**

Check **Y/N**

Init. **Y/N**

Cash **Y/N**

Payment for services rendered as noted herein are due and not within 30 days from the date rendered. If not so paid, account balances are deemed delinquent. Delinquent balances are subject to monthly service charges and interest specified in BSK's current Standard Terms and Conditions (Laboratory Services). The person signing for the Client/Company acknowledges that they are either the Client or an authorized agent to the Client, that the Client agrees to be responsible for payment for the services on the Chain of Custody, and agrees to BSK's terms and conditions for laboratory services unless contractually bound otherwise. BSK's current terms and conditions can be found at www.bskassociates.com/BSKLabFormChainOfCustody.pdf

*[Handwritten initials]*

# BSK Associates

EDT

Date of Report: 19|01|07|1547

Sample ID No.: A8L2828-01

Laboratory Name: BSK Analytical Laboratories

Signature Lab Director:



Name of Sampler: Jim Moffett

Date/Time Sample

Date/Time Sample

Date Analyses

Collected: 18|12|20|1300

Received @ Lab : 18|12|21|1205

Completed: 18|12|24

System Name: BISHOP, CITY OF

System Number: 1410001

Name or Number of Sample Source: WELL 01 - STANDBY

User ID: TAN

Station Number: 1410001-001

Date/Time of Sample: 18|12|20|1300

Laboratory Code: 5810

Submitted by: BSK Associates Laboratory Fresno

Date Analyses Completed: 18|12|24

Phone #: 559-497-2888

MCL	REPORTING UNITS	CHEMICAL	ENTRY #	ANALYSES RESULTS	DLR
2	mg/L	Fluoride (F) (Natural-Source)	00951	2.5	0.1
Total Anions Meq/L Value:		0.13			

# BSK Associates

EDT

Date of Report: 19|01|07|1547

Sample ID No.: A8L2828-02

Laboratory Name: BSK Analytical Laboratories

Signature Lab Director:



Name of Sampler: Jim Moffett

Date/Time Sample

Date/Time Sample

Date Analyses

Collected: 18|12|20|1316

Received @ Lab : 18|12|21|1205

Completed: 18|12|21

System Name: BISHOP, CITY OF

System Number: 1410001

Name or Number of Sample Source: WELL 02

User ID: TAN

Station Number: 1410001-002

Date/Time of Sample: 18|12|20|1316

Laboratory Code: 5810

Submitted by: BSK Associates Laboratory Fresno

Date Analyses Completed: 18|12|21

Phone #: 559-497-2888

MCL	REPORTING UNITS	CHEMICAL	ENTRY #	ANALYSES RESULTS	DLR
10	mg/L	Nitrate as Nitrogen(N)	00618	ND	0.4

Total Anions Meq/L Value:



# BSK Associates

EDT

Date of Report: 19|01|07|1547

Sample ID No.: A8L2828-03

Laboratory Name: BSK Analytical Laboratories

Signature Lab Director:



Name of Sampler: Jim Moffett

Date/Time Sample

Date/Time Sample

Date Analyses

Collected: 18|12|20|1340

Received @ Lab : 18|12|21|1205

Completed: 18|12|21

System Name: BISHOP, CITY OF

System Number: 1410001

Name or Number of Sample Source: WELL 04

User ID: TAN

Station Number: 1410001-003

Date/Time of Sample: 18|12|20|1340

Laboratory Code: 5810

Submitted by: BSK Associates Laboratory Fresno

Date Analyses Completed: 18|12|21

Phone #: 559-497-2888

MCL	REPORTING UNITS	CHEMICAL	ENTRY #	ANALYSES RESULTS	DLR
10	mg/L	Nitrate as Nitrogen(N)	00618	ND	0.4

Total Anions Meq/L Value:



BSK Associates Laboratory Fresno  
 1414 Stanislaus St  
 Fresno, CA 93706  
 559-497-2888 (Main)  
 559-485-6935 (FAX)

**AED1765**

**4/27/2021**

Invoice: AE08962

Deston Dishion  
 City of Bishop  
 377 West Line Street  
 Bishop, CA 93514

**RE: Report for AED1765 General Chemistry**

Dear Deston Dishion,

Thank you for using BSK Associates for your analytical testing needs. In the following pages, you will find the test results for the samples submitted to our laboratory on 4/16/2021. The results have been approved for release by our Laboratory Director as indicated by the authorizing signature below.

The samples were analyzed for the test(s) indicated on the Chain of Custody (see attached) and the results relate only to the samples analyzed. BSK certifies that the testing was performed in accordance with the quality system requirements specified in the 2016 TNI Standard. Any deviations from this standard or from the method requirements for each test procedure performed will be annotated alongside the analytical result or noted in the Case Narrative. Unless otherwise noted, the sample results are reported on an "as received" basis.

This certificate of analysis shall not be reproduced except in full, without written approval of the laboratory.

If additional clarification of any information is required, please contact your Project Manager, Christian Montiel, at 559-497-2888.

Thank you again for using BSK Associates. We value your business and appreciate your loyalty.

Sincerely,




---

Christian Montiel, Project Coordinator II



Accredited in Accordance with NELAP  
 ORELAP #4021-009

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

AED1765 FINAL 04272021 1106

**Case Narrative**

Project and Report Details	Invoice Details
----------------------------	-----------------

**Client:** City of Bishop  
**Report To:** Deston Dishion  
**Project #:** -  
**Received:** 4/16/2021 - 09:34  
**Report Due:** 4/30/2021

**Invoice To:** City of Bishop  
**Invoice Attn:** Deston Dishion  
**Project PO#:** -

**Sample Receipt Conditions**

**Cooler:** Default Cooler  
**Temperature on Receipt °C:** 2.9

Containers Intact  
 COC/Labels Agree  
 Received On Blue Ice  
 Sample(s) arrived at lab on same day sampled.  
 Packing Material - Other  
 Sample(s) were received in temperature range.  
 Initial receipt at BSK-FAL

**Data Qualifiers**

The following qualifiers have been applied to one or more analytical results:

\*\*\*None applied\*\*\*

**Report Distribution**

Recipient(s)	Report Format	CC:
Deston Dishion	FINAL.RPT	
Michele Thomas	FINAL.RPT	
Jim Moffett	FINAL.RPT	



**Certificate of Analysis**

**Sample ID:** AED1765-01  
**Sampled By:** Jim Moffeit  
**Sample Description:** Well 4

**Sample Date - Time:** 04/15/2021 - 08:45  
**Matrix:** Drinking Water  
**Sample Type:** Grab

**BSK Associates Laboratory Fresno**  
**General Chemistry**

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Nitrate as N	EPA 300.0	ND	0.23	mg/L	1	AED0985	04/16/21 18:37	04/16/21	

**Certificate of Analysis**

**Sample ID:** AED1765-02  
**Sampled By:** Jim Moffeit  
**Sample Description:** Well 2

**Sample Date - Time:** 04/15/2021 - 09:15  
**Matrix:** Drinking Water  
**Sample Type:** Grab

**BSK Associates Laboratory Fresno**  
**General Chemistry**

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Nitrate as N	EPA 300.0	0.26	0.23	mg/L	1	AED0985	04/16/21 19:22	04/16/21	

**Metals**

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Arsenic	EPA 200.8	2.2	2.0	ug/L	1	AED1077	04/19/21	04/23/21	



**BSK Associates Laboratory Fresno**  
**General Chemistry Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
---------	--------	----	-------	-------------	---------------	------	-------------	-----	-----------	---------------	------

**EPA 300.0 - Quality Control**

Batch: AED0985

Prepared: 4/16/2021

Prep Method: Method Specific Preparation

Analyst: DXR

**Blank (AED0985-BLK1)**

Nitrate as N	ND	0.23	mg/L							04/16/21	
--------------	----	------	------	--	--	--	--	--	--	----------	--

**Blank Spike (AED0985-BS1)**

Nitrate as N	23	0.23	mg/L	23	ND	100	90-110			04/16/21	
--------------	----	------	------	----	----	-----	--------	--	--	----------	--

**Matrix Spike (AED0985-MS1), Source: AED1650-07**

Nitrate as N	13	0.23	mg/L	11	1.8	99	80-120			04/16/21	
--------------	----	------	------	----	-----	----	--------	--	--	----------	--

**Matrix Spike (AED0985-MS2), Source: AED1765-01**

Nitrate as N	11	0.23	mg/L	11	ND	96	80-120			04/16/21	
--------------	----	------	------	----	----	----	--------	--	--	----------	--

**Matrix Spike Dup (AED0985-MSD1), Source: AED1650-07**

Nitrate as N	13	0.23	mg/L	11	1.8	103	80-120	3	20	04/16/21	
--------------	----	------	------	----	-----	-----	--------	---	----	----------	--

**Matrix Spike Dup (AED0985-MSD2), Source: AED1765-01**

Nitrate as N	11	0.23	mg/L	11	ND	99	80-120	3	20	04/16/21	
--------------	----	------	------	----	----	----	--------	---	----	----------	--

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

**BSK Associates Laboratory Fresno**  
**Metals Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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**EPA 200.8 - Quality Control**

Batch: AED1077

Prepared: 4/19/2021

Prep Method: EPA 200.2

Analyst: VVW

**Blank (AED1077-BLK1)**

Arsenic	ND	2.0	ug/L							04/23/21	
---------	----	-----	------	--	--	--	--	--	--	----------	--

**Blank Spike (AED1077-BS1)**

Arsenic	200	2.0	ug/L	200	ND	98	85-115			04/23/21	
---------	-----	-----	------	-----	----	----	--------	--	--	----------	--

**Blank Spike Dup (AED1077-BSD1)**

Arsenic	200	2.0	ug/L	200	ND	98	85-115	1	20	04/23/21	
---------	-----	-----	------	-----	----	----	--------	---	----	----------	--

**Matrix Spike (AED1077-MS1), Source: AED1788-01**

Arsenic	200	2.0	ug/L	200	ND	102	70-130			04/23/21	
---------	-----	-----	------	-----	----	-----	--------	--	--	----------	--

**Matrix Spike (AED1077-MS2), Source: AED1792-01**

Arsenic	200	2.0	ug/L	200	ND	101	70-130			04/23/21	
---------	-----	-----	------	-----	----	-----	--------	--	--	----------	--

**Matrix Spike Dup (AED1077-MSD1), Source: AED1788-01**

Arsenic	200	2.0	ug/L	200	ND	101	70-130	1	20	04/23/21	
---------	-----	-----	------	-----	----	-----	--------	---	----	----------	--

**Matrix Spike Dup (AED1077-MSD2), Source: AED1792-01**

Arsenic	200	2.0	ug/L	200	ND	100	70-130	1	20	04/23/21	
---------	-----	-----	------	-----	----	-----	--------	---	----	----------	--

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

**Certificate of Analysis**

**Notes:**

- The Chain of Custody document and Sample Integrity Sheet are part of the analytical report.
- Any remaining sample(s) for testing will be disposed of according to BSK's sample retention policy unless other arrangements are made in advance.
- All positive results for EPA Methods 504.1 and 524.2 require the analysis of a Field Reagent Blank (FRB) to confirm that the results are not a contamination error from field sampling steps. If Field Reagent Blanks were not submitted with the samples, this method requirement has not been performed.
- Samples collected by BSK Analytical Laboratories were collected in accordance with the BSK Sampling and Collection Standard Operating Procedures.
- J-value is equivalent to DNQ (Detected, not quantified) which is a trace value. A trace value is an analyte detected between the MDL and the laboratory reporting limit. This result is of an unknown data quality and is only qualitative (estimated). Baseline noise, calibration curve extrapolation below the lowest calibrator, method blank detections, and integration artifacts can all produce apparent DNQ values, which contribute to the un-reliability of these values.
- (1) - Residual chlorine and pH analysis have a 15 minute holding time for both drinking and waste water samples as defined by the EPA and 40 CFR 136. Waste water and ground water (monitoring well) samples must be field filtered to meet the 15 minute holding time for dissolved metals.
- Field tests are outside the scope of laboratory accreditation and there is no certification available for field testing.
- Summations of analytes (i.e. Total Trihalomethanes) may appear to add individual amounts incorrectly, due to rounding of analyte values occurring before or after the total value is calculated, as well as rounding of the total value.
- RL Multiplier is the factor used to adjust the reporting limit (RL) due to variations in sample preparation procedures and dilutions required for matrix interferences.
- Due to the subjective nature of the Threshold Odor Method, all characterizations of the detected odor are the opinion of the panel of analysts. The characterizations can be found in Standard Methods 2170B Figure 2170:1.
- The MCLs provided in this report (if applicable) represent the primary MCLs for that analyte.
- (2) - Formerly known as Bis(2-Chloroisopropyl) ether.

**Definitions**

mg/L:	Milligrams/Liter (ppm)	MDL:	Method Detection Limit	MDA95:	Min. Detected Activity
mg/Kg:	Milligrams/Kilogram (ppm)	RL:	Reporting Limit: DL x Dilution	MPN:	Most Probable Number
µg/L:	Micrograms/Liter (ppb)	ND:	None Detected below MRL/MDL	CFU:	Colony Forming Unit
µg/Kg:	Micrograms/Kilogram (ppb)	pCi/L:	PicoCuries per Liter	Absent:	Less than 1 CFU/100mLs
%:	Percent	RL Mult:	RL Multiplier	Present:	1 or more CFU/100mLs
NR:	Non-Reportable	MCL:	Maximum Contaminant Limit	U:	The analyte was not detected at or above the reported sample quantitation limit.

**Please see the individual Subcontract Lab's report for applicable certifications.**

**BSK is not accredited under the NELAP program for the following parameters:**

**\*\*NA\*\***

**Certificate of Analysis**

**Certifications:** Please refer to our website for a copy of our Accredited Fields of Testing under each certification.

**Fresno**

State of California - ELAP	1180	State of Hawaii	4021
Los Angeles CSD	9254479	NELAP certified	4021-017
State of Nevada	CA000792020-2	State of Oregon - NELAP	4021-017
EPA - UCMR4	CA00079	State of Washington	C997-21

**Sacramento**

State of California - ELAP	2435
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**San Bernardino**

State of California - ELAP	2993	Los Angeles CSD	9254478
NELAP certified	4119-005	State of Oregon - NELAP	4119-005

**Vancouver**

NELAP certified	WA100008-013	State of Oregon - NELAP	WA100008-013
State of Washington	C824-20		



# Sample Integrity

BSK Bottles: Yes No Page 1 of 1

COC Info		Yes	No	NA	Were correct containers and preservatives received for the tests requested?		Yes	No	NA
Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 8^{\circ}\text{C}$		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If samples were taken today, is there evidence that chilling has begun?		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Bubbles Present VOAs (524.2/TTHM/TCP)?		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Did all bottles arrive unbroken and intact?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	TB Received? (Check Method Below)		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Did all bottle labels agree with COC?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Was a sufficient amount of sample received?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Do samples have a hold time <72 hours?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Yes		<input checked="" type="checkbox"/>	Was PM notified of discrepancies? PM: _____ By/Time: _____		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
250ml(A) 500ml(B) 1Liter(C) 40mlVOA(V) 125ml(D)		Checks*	Passed?		1	2			
Bacti Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>		—	—						
None (P) <sup>White Cap</sup>		—	—		1A	1A			
Cr6 (P) Lt. Green Label/Blue Cap NH <sub>4</sub> OH(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> DW		Cl, pH > 8	P F						
Cr6 (P) Pink Label/Blue Cap NH <sub>4</sub> OH(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> WW		pH 9.3-9.7	P F						
Cr6 (P) Black Label/Blue Cap NH <sub>4</sub> OH(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> 7199 ***24 HOUR HOLD TIME***		pH 9.0-9.5	P F						
HNO <sub>3</sub> (P) <sup>Red Cap</sup> or HCl (P) <sup>Purple Cap/Lt. Blue Label</sup>		—	—			1A			
H <sub>2</sub> SO <sub>4</sub> (P) or (AG) <sup>Yellow Cap/Label</sup>		pH < 2	P F						
NaOH (P) <sup>Green Cap</sup>		Cl, pH > 10	P F						
NaOH + ZnAc (P)		pH > 9	P F						
Dissolved Oxygen 300ml (g)		—	—						
None (AG) 608/8081/8082, 625, 632/8321, 8151, 8270		—	—						
HCl (AG) <sup>Lt. Blue Label</sup> O&G, Diesel, TCP		—	—						
Ascorbic, EDTA, KH <sub>2</sub> Ct (AG) <sup>Pink Label</sup> 525		—	—						
Na <sub>2</sub> SO <sub>3</sub> 250mL (AG) <sup>Neon Green Label</sup> 515		—	—						
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> 1 Liter (Brown P) 549		—	—						
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (AG) <sup>Blue Label</sup> 548, THM, 524		—	—						
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (CG) <sup>Blue Label</sup> 504, 505, 547		—	—						
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> + MCAA (CG) <sup>Orange Label</sup> 531		pH < 3	P F						
NH <sub>4</sub> Cl (AG) <sup>Purple Label</sup> 552		—	—						
EDA (P) or (AG) <sup>Brown Label</sup> DBPs		—	—						
HCL (CG) 524.2, BTEX, Gas, MTBE, 8260/624		—	—						
Buffer pH 4 (CG)		—	—						
H <sub>3</sub> PO <sub>4</sub> (CG) <sup>Salmon Label</sup>		—	—						
Trizma – EPA 537.1 - Field Blank Required		—	—						
Other:									
Asbestos 1L (P) w/ Foil / LL Metals Bottle		—	—						
Bottled Water		—	—						
Clear Glass 125mL / 250mL / 500mL / 1 Liter		—	—						
Solids: Brass / Steel / Plastic Bag		—	—						
Split	Container	Preservative	Date/Time/Initials		Container	Preservative	Date/Time/Initials		
	S P				S P				
	S P				S P				
Comments	*Preservation check completed by lab performing analysis.				✓ Indicates Blanks Received				
					504 ___ 524.2 ___ TTHM ___ 537.1 ___ TCP ___				
					✓ MS/MSD Received Method: _____				





1414 Stanislaus St., Fresno, CA 93706  
 (559) 497-2888 · Fax (559) 497-2893  
 www.bskassociates.com

**Turnaround Time Request**  
 Standard - 10 business days  
 Rush (Surcharge may apply)  
 Date needed:



AED1765 bisho1417 04/16/2021

**Required Fields**

Company/Client Name: **City of Bishop** Report Attention: **Deston Dishion** Invoice To: **City of Bishop** Phone: **760-937-1335** Fax: **760-937-1335**  
 Address: **377 W Line Street** City: **Bishop** State: **CA** Zip: **93514** E-mail: **ddishion@cityofbishop.com**  
 Project: \_\_\_\_\_ Project #: \_\_\_\_\_ Thermometer ID: **157**

Reporting Options:  Trace (J-Flag)  Swamp  EDD Type: \_\_\_\_\_  
 Regulatory Carbon Copies:  SWRCB (Drinking Water)  Merced Co  Madera Co  Other: \_\_\_\_\_  
 Regulatory Compliance:  EDT to California SWRCB (Drinking Water)  Fresno Co  Tulare Co  Geotracker #: \_\_\_\_\_  
 Sampler Name (Printed/Signature): **Jim Moffett** *Jim*

#	Sample Description*	Sampled*		Matrix*	Comments / Station Code / WTRAX	Nitrate as N	Arsenic				
		Date	Time								
Well 4		4-15-21	0845	DW		X	X				
Well 2		4-15-21	0915	DW		X	X				

Relinquished By: (Signature and Printed Name) **Jim Moffett** *Jim* Company: **City of Bishop**  
 Received by: (Signature and Printed Name) \_\_\_\_\_  
 Date: **4-15-21** Time: **0930**

Relinquished by: (Signature and Printed Name) \_\_\_\_\_ Company: \_\_\_\_\_  
 Received by: (Signature and Printed Name) \_\_\_\_\_  
 Date: \_\_\_\_\_ Time: \_\_\_\_\_

Shipping Method: **WEL** **Blue** **UPS** **GSO** **WALK-IN** **FED EX** **Courier** \_\_\_\_\_  
 Amount: \_\_\_\_\_ P/A#: \_\_\_\_\_ Check: \_\_\_\_\_ Cash: \_\_\_\_\_

Payment for services rendered as noted hereon is due within 30 days from the date rendered. If not so paid, account balances are deemed delinquent. Delinquent balances are subject to monthly service charges and interest specified in BSK's current Standard Terms and Conditions for Laboratory Services. The person signing for the Client/Company acknowledges that they are either the Client or authorized agent to the Client, that the Client agrees to be responsible for payment for the services on this Chain of Custody and agrees to BSK's terms and conditions for laboratory services unless contractually bound otherwise. BSK's current terms and conditions can be found at www.bskassociates.com/BSK\_Lab\_Terms\_Conditions.pdf



## **Appendix C: 2021 Soils Report**



United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for Benton-Owens Valley Area Parts of Inyo and Mono Counties, California



# Preface

---

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# How Soil Surveys Are Made

---

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

## Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

## Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

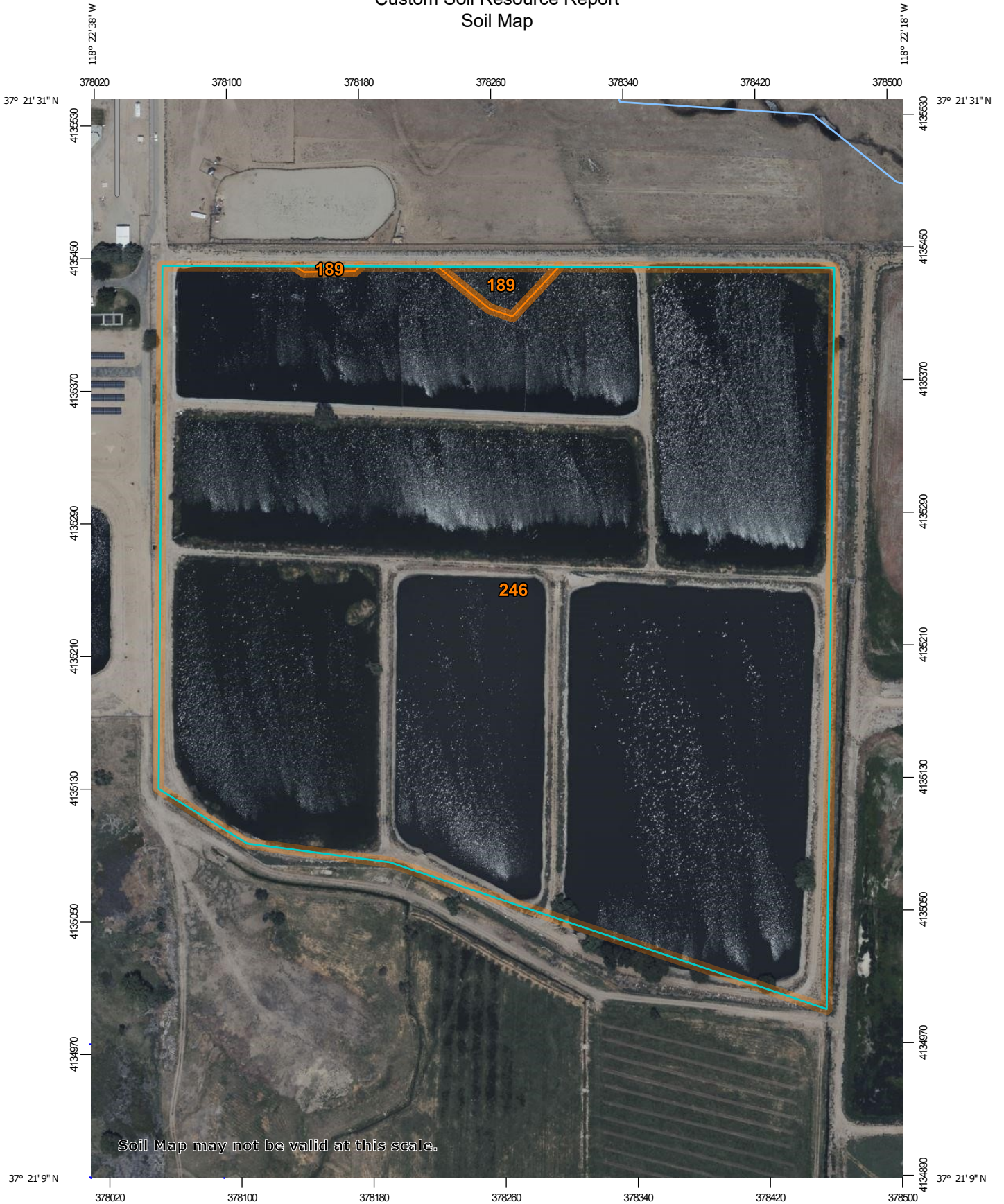
# Soil Map

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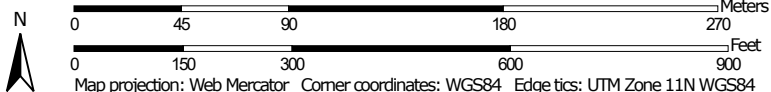
The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



# Custom Soil Resource Report Soil Map




Map Scale: 1:3,170 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

### MAP LEGEND

**Area of Interest (AOI)**

 Area of Interest (AOI)

**Soils**

 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

**Special Point Features**

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

**Water Features**

 Streams and Canals

**Transportation**

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

**Background**

 Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Benton-Owens Valley Area Parts of Inyo and Mono Counties, California  
 Survey Area Data: Version 18, May 27, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 12, 2019—Jul 15, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

**MAP LEGEND**

**MAP INFORMATION**

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
189	Dehy-Dehy calcareous complex, 0 to 2 percent slopes	0.3	0.8%
246	Lucerne loamy fine sand, 0 to 2 percent slopes	38.3	99.2%
<b>Totals for Area of Interest</b>		<b>38.6</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the

## Custom Soil Resource Report

development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.



## Benton-Owens Valley Area Parts of Inyo and Mono Counties, California

### 189—Dehy-Dehy calcareous complex, 0 to 2 percent slopes

#### Map Unit Setting

*National map unit symbol:* jcw1  
*Elevation:* 3,600 to 4,700 feet  
*Mean annual precipitation:* 4 to 6 inches  
*Mean annual air temperature:* 57 to 64 degrees F  
*Frost-free period:* 140 to 220 days  
*Farmland classification:* Prime farmland if irrigated and drained

#### Map Unit Composition

*Dehy and similar soils:* 45 percent  
*Dehy and similar soils:* 40 percent  
*Minor components:* 6 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Dehy

##### Setting

*Landform:* Stream terraces, alluvial fans  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Alluvium derived from mixed sources

##### Typical profile

*H1 - 0 to 18 inches:* loamy sand  
*H2 - 18 to 36 inches:* sandy loam, sandy clay loam  
*H2 - 18 to 36 inches:* sandy loam  
*H3 - 36 to 60 inches:*

##### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Somewhat poorly drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.60 in/hr)  
*Depth to water table:* About 24 to 36 inches  
*Frequency of flooding:* Rare  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* High (about 9.1 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 3w  
*Land capability classification (nonirrigated):* 7w  
*Hydrologic Soil Group:* C  
*Ecological site:* R029XG002CA - Saline Meadow  
*Hydric soil rating:* No

## Description of Dehy

### Setting

*Landform:* Alluvial fans, stream terraces  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Alluvium derived from mixed sources

### Typical profile

*H1 - 0 to 13 inches:* fine sandy loam  
*H2 - 13 to 26 inches:* loam  
*H3 - 26 to 55 inches:* fine sandy loam, sandy loam  
*H3 - 26 to 55 inches:* loamy sand  
*H4 - 55 to 60 inches:*

### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Somewhat poorly drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)  
*Depth to water table:* About 36 to 60 inches  
*Frequency of flooding:* Rare  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 10 percent  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 5.0  
*Available water supply, 0 to 60 inches:* High (about 11.8 inches)

### Interpretive groups

*Land capability classification (irrigated):* 3w  
*Land capability classification (nonirrigated):* 7w  
*Hydrologic Soil Group:* B  
*Ecological site:* R029XG002CA - Saline Meadow  
*Hydric soil rating:* No

## Minor Components

### Unnamed, wet

*Percent of map unit:* 3 percent  
*Landform:* Channels  
*Hydric soil rating:* Yes

### Unnamed, histosols

*Percent of map unit:* 3 percent  
*Landform:* Alluvial fans  
*Hydric soil rating:* Yes

## 246—Lucerne loamy fine sand, 0 to 2 percent slopes

### Map Unit Setting

*National map unit symbol:* jczp  
*Elevation:* 4,000 to 4,100 feet  
*Mean annual precipitation:* 4 to 6 inches  
*Mean annual air temperature:* 57 to 61 degrees F  
*Frost-free period:* 140 to 180 days  
*Farmland classification:* Prime farmland if irrigated

### Map Unit Composition

*Lucerne and similar soils:* 85 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Lucerne

#### Setting

*Landform:* Fan terraces  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Alluvium derived from granite

#### Typical profile

*H1 - 0 to 1 inches:* loamy fine sand  
*H2 - 1 to 22 inches:* fine sandy loam, sandy loam  
*H2 - 1 to 22 inches:* gravelly sandy loam  
*H3 - 22 to 36 inches:* very cobbly sand  
*H4 - 36 to 60 inches:*

#### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* Very low  
*Capacity of the most limiting layer to transmit water (Ksat):* High (2.00 to 6.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* Rare  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Moderate (about 7.6 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 2s  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* A  
*Ecological site:* R029XG019CA - Loamy Bottom 5-8" P.Z.  
*Hydric soil rating:* No

## Custom Soil Resource Report

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## **Appendix D: CEQA Status Report**



As of June 2022, the CEQA analysis was still under scoping and no formal survey has been completed.



## **Appendix E: Groundwater Degradation Analysis**



June 3, 2022

Via Email: [jlesperance@Lumosinc.com](mailto:jlesperance@Lumosinc.com)  
Ph #: 775.883.7077

Jonathan Lesperance, P.E.  
Lumos & Associates  
308 N. Curry Street, Suite 200  
Carson City, NV 89703

Subject: Bishop Area Wastewater Authority, Anti-Degradation Analysis

Dear Mr. Lesperance:

Thank you for contacting Resource Concepts, Inc. (RCI) to assist in preparing an antidegradation analysis to support permitting of the Bishop Area Wastewater Authority Recycled Water Project (BAWA Project).

## Purpose

Resource Concepts, Inc., in coordination with Lumos & Associates, has prepared the following letter report to support permitting of the BAWA Project by the Lahontan Regional Water Quality Control Board (LRWQCB). This evaluation demonstrates that the proposed project complies with the Water Quality Control Policy for Recycled Water (eff. April 8, 2019), Section 7.2.2, that requires an antidegradation analysis for site-specific permitting of non-potable recycled water projects. Project consistency with Findings 27 through 32, Antidegradation Analysis, of the "Water Reclamation Requirements for Recycled Water Use, Order WQ 2016-0068-DDW (General Order)", is used by RCI as a basis to demonstrate compliance with State Water Board Resolution 68-16, the Antidegradation Policy.

## Existing Conditions

The City of Bishop (City) and the Eastern Sierra Community Service District (District) operate adjacent wastewater treatment facilities that, combined, provide 1.5 MGD of undisinfected secondary treated recycled water under average day conditions. The systems operate under Waste Discharge Requirements (WDRs), WDID 6B140108001 for the District and WDID 6B140101001 for the City, which both allow irrigation of pastureland with undisinfected secondary treated effluent. For over 30 years, the two facilities have distributed treated effluent through overlapping flood irrigation systems.

Figure 1 shows the separate facilities and the flood-irrigated areas (approximately 105 acres) within the 169-acre area permitted for irrigation. For reference, these irrigation systems are not connected to the Los Angeles Department of Water and Power (LADWP) network of freshwater irrigation ditches visible in Figure 1 on adjacent properties. When treated effluent is not being used for irrigation, the water is routed to evaporation/percolation ponds at the facilities. A detailed description of existing wastewater treatment operations is included in the "Bishop Area Wastewater Authority, Engineering Report For Production, Distribution, And Use Of Recycled Water" Lumos and Associates, March 2021 (Title 22 Report). Treated

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effluent quality is described in Appendix A of the Title 22 Report. Flow weighted average of 24 mg/L total Nitrogen and 330 mg/L Total Dissolved Solids for the combined effluent from the City and District are estimated from Attachment A.

The existing irrigation system has served its purpose well over the last 30 years as an alternative disposal method to percolation/evaporation ponds, putting treated effluent to beneficial use by creating over 100 acres of pasture for grazing. However, the existing method of flood irrigation has inherent inefficiencies for both distribution and control of water. The facilities consist of a series of head gates and gravity fed ditches that can utilize only about 60% of the permitted area. The topography of the permitted area is not suitable for leveling that would allow more uniform flood irrigation water use (such as border/strip or row/furrow irrigation methods). Flood irrigation is labor intensive with headgates that must be manually operated and monitored, requiring time consuming management of effluent releases to satisfy seasonally changing irrigation water demand. Tailwater can be minimized by attentive and labor-intensive management, however there is no tailwater return system, so tailwater creation is intrinsic to this type of flood irrigation.

## Proposed Project

The BAWA Project will substantially improve the control and distribution of effluent by transitioning to spray irrigation as well as increasing the available acreage that can be irrigated. The existing gravity flood irrigation system will be replaced with a pump station and sprinkler irrigation (Figure 2), as well as a phased expansion of the acreage under irrigation. The sprinkler system will improve consistency and uniformity of water distribution, use water more effectively, eliminate tailwater control concerns, and increase utilization of nutrients through agricultural practices.

BAWA has been working closely with the NRCS regarding design and funding for construction of the project. Detailed description of the proposed action is included in the Title 22 Report. Key features include:

- Expanded pasture for grazing from 105 acres to: 169 acres in Phase 1, 342 acres in Phase 2 and 474 acres in Phase 3 (Figure 1)
- A combined outfall facility with new irrigation pump station (design flowrate of 1450 gpm)
- Piped distribution system (4 to 12-inch dia. PVC) to sprinklers
- Valving to vent, flush, and isolate irrigation zones
- Irrigation master-control assembly with timer operated solenoid valves
- Rotating gun sprinklers mounted on pedestals
- Fenced and signed acreage under irrigation

This action would increase the quantity of effluent that is used as recycled water and applied at an agronomic rate, increase the area and quality of pasture for grazing (a socioeconomic benefit), and reduce the nutrient load to groundwater from effluent disposal in infiltration/evaporation ponds.

## Antidegradation Policy and Guidance

There are several key policies and regulations pertaining to use of treated effluent as recycled water for agriculture irrigation. The following outlines key considerations in preparing the antidegradation analysis for the project.

Water Quality Control Policy for Recycled Water, Effective Date April 8, 2019, (Recycled Water Policy)

Section 7 of the Recycled Water Policy describes options and anti-degradation analysis requirements for permitting non-potable recycled water projects. The BAWA Project seems to fall under Section 7.2.2, site specific permitting for non-potable recycled water projects, requiring proponents to submit an antidegradation analysis to the regional water board with the report of waste discharge application to demonstrate compliance with the Antidegradation Policy. It is RCI's understanding the project is not being considered for enrollment under the state-wide water reclamation requirements (Section 7.1) nor is there a salt and nutrient management plan for the Owens Valley Groundwater Basin that needs to be addressed (Section 7.3).

Water Reclamation Requirements for Recycled Water Use Water, General Order WQ 2016-0086-DDW (General Order)

This General Order authorizes the use of recycled water and discharges to groundwater basins for uses consistent with the Uniform Statewide Recycling Criteria. Under the General Order, Findings 27 through 32 describe the findings necessary for an Antidegradation Analysis. The BAWA Project will be permitted under site specific waste discharge requirements rather than the General Order; however, Findings 27 through 32 are referenced collectively as a basis for the project's antidegradation analysis.

## Evaluation of Required Findings

### Finding 27

Finding 27 describes the Antidegradation Policy requirement that disposal of waste into waters of the State be regulated to achieve the highest water quality consistent with the maximum benefit to people of the State of California. The Antidegradation Policy, Resolution No. 68-16 states:

*"1. Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies.*

*2. Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained."*

The following describes the water quality parameters and beneficial uses that will potentially be affected by the proposed action and the extent of the impact. Consistent with the existing Waste Discharge Requirements for the treatment facilities (WDID 6B140101001 and WDID 6B140108001) receiving waters are the groundwaters of the Upper Owens Subunit of the Owens Hydrologic Unit (HA 603.20). Existing surface water/drainage from upgradient of the wastewater treatment facilities has been intercepted and diverted through the system of LADWP irrigation ditches: Rawson Canal/Creek to the north and Bishop Creek/Canal to the west (Figure 3, [2018 Integrated Report Map](#)). The nearest downstream surface water



is the Rawson Canal/Creek roughly 1.8 miles to the southeast and tributary to the Owens River (Upper Segment). Bishop Creek/Canal are listed as impaired for “indicator bacteria” both west and south of treatment plant, and the upper Owens River segment is listed as impaired for “indicator bacteria” and sodium ([California 2020-2022 Integrated Report \(303\(d\) List/305\(b\) Report](#), Final Revised Appendix A: Recommended Final 2020-2022 303(d) List of Impaired Waters). Recycled water used for irrigation at the facilities is not connected to the freshwater irrigation system, nor does it discharge directly to a downstream watercourse. No other impairments of beneficial uses are listed for these surface waters.

Depth to groundwater on-site typically ranges from 8- to 19-feet bgs but has on infrequent occasions been as shallow as 1-foot bgs in certain monitoring wells at the facilities. Between the City and the District, groundwater quality and depth is monitored at 13 shallow on-site monitoring wells. General direction of groundwater flow is to the southeast (Evaluation of the Hydrologic System and Selected Water-Management Alternatives in the Owens Valley, California USGS Water Supply Paper 2370-H, Figure 14, 1998).

For this analysis, the BAWA Project represents a discharge to groundwater of the Owens Valley basin (6-12) consistent with the existing WDRs for the City and District facilities. Applicable Beneficial Use Standards for groundwater in this basin (Lahontan Basin Plan, Chapter 2, Table 2.2) include:

- MUN – Municipal
- AGR – Agricultural Supply
- IND – Industrial Service Supply
- FRSH – Freshwater Replenishment
- WILD – Wildlife Habitat

Water Quality Objectives for groundwater in the Owens Valley basin (Chapter 3, Lahontan Basin Plan), include:

- Bacteria Coliform less than 1.1/100 ml (7-day average)
- Chemical Constituents (not in excess of MCL or SMCL)
- Radioactivity
- Taste and Odor

Background water quality in the Owens River basin is generally high; valued for export of both surface water and groundwater from the hydrologic basin as managed basin-wide by the LADWP. A comparison of the treated effluent water quality, nearby groundwater quality, on-site shallow monitoring wells, and groundwater quality objectives is shown in Table 1 for nitrogen and salinity estimates. Nitrogen and salinity (Total Dissolved Solids or TDS) data shown in Table 1 under “Groundwater Quality” were obtained from the California State Water Board’s, [Groundwater Ambient Monitoring and Assessment \(GAMA\) Program](#) databases and on-line GIS tools for the four (4) water supply wells located closest to the project area in each direction (1 to 1.6 miles) as shown on Figure 4.

Table 1. Water Quality Data

Parameters	Groundwater Quality <sup>1/</sup>	Treated Effluent Water Quality	Project Area Monitoring Wells <sup>2/</sup>	Water Quality Objectives
Estimated Average Nitrogen (mg/L as N)	<5 (0.4 to 1.9) Nitrate as N	24 Total Nitrogen as N <sup>2/</sup> 18 to 20 (6 to 43) Ammonia as N	5 to 6 (0.1 to 20) Nitrate as N	<10 Nitrate as N
Average TDS (mg/L)	<500 (140 to 256)	330 (290 to 370)	396 (190 to 1390)	<500

1/ Data downloads for wells 141001-001, 1400055-001, 14000518-003 and 14000456-002: [USGS CA GAMA-PBP Public-Supply Well \(PSW\) Results: Inorganic Data and Trends, 1974 – 2019](#)

2/ Based on average TKN + av. Nitrate + av. Nitrite , Title 22 Report, Attachment A

## Finding 28

Finding 28 indicates that when recycled water may result in a discharge to a groundwater basin that contains high quality water, then limited degradation is authorized consistent with the findings in the General Order. Analysis for consistency with Findings 29 through 32 provides details showing how the BAWA Project is consistent with the Antidegradation Policy cited in in Finding 28. Water quality data suggests the following:

- Groundwater quality in the immediate vicinity of the wastewater treatment and disposal facilities has likely been affected by over 30 years of operations. Water quality objectives for nitrate and TDS have periodically been exceeded (Table 1). The BAWA Project is being implemented to help address groundwater quality issues.
- The BAWA Project objective is to reduce the risk to groundwater quality through construction of the new irrigation system. Converting from flood to sprinkler irrigation and expanding the irrigated acreage is intended to increase water and nutrient use by plants (grazed pasture).
- Groundwater quality exceeding the nitrate objective appears to be limited in extent to the area near the treatment and disposal facilities. The BAWA Project is consistent with the Antidegradation Policy because its purpose is to help the alleviate the local water quality issues and maintain benefits to people of the State; collection, treatment, and reuse of wastewater for the Bishop area, as well as agricultural use (grazed pasture).
- Regional groundwater supply, as represented by municipal supply wells in the Bishop area, continues to supply water that meets and exceeds the water quality objectives for nitrate and salinity. The groundwater data suggest public water supply wells closest to the facilities have not been affected (Table 1). Though irrigation with recycled water is a discharge to groundwater of higher water quality, limited localized degradation can be allowed for the BAWA Project that will not cause “unreasonable” degradation or impair beneficial uses.

Finding 28 also provides direction for evaluation of inputs and basin assimilative capacity under adopted Salt and Nutrient Management Plans. At this time, the Owens River basin does not have an adopted Salt and Nutrient Management Plan. However, it is noted that the discharge from these treatment facilities has been occurring for over 30 years. The irrigation improvements will cause no

increase in the salt load and a quantifiable decrease in the nutrient load through expansion of area available for recycled water irrigation. The BAWA Project will have no negative effect on the assimilative capacity of the basin.

### Finding 29

Finding 29 outlines the control measures needed for use of recycled water to demonstrate Best Practical Treatment or Control (BPTC) consistent with the Antidegradation Policy. The policy requires BPTC to permit discharges to existing high quality water, thus assuring pollution or nuisance will not occur and maintaining water quality that benefits people of the State. Measures implemented by the project are consistent with Finding 29 requirements.

The BAWA Project does not include any changes in wastewater treatment. As described in the Title 22, Report (Section 2), the current level of treatment, undisinfected secondary effluent, meets the requirements for irrigation of non-food pasture crops for non-dairy cattle production.

The proposed project does not include any change to the existing permitted ponds at the facility that are used for wastewater treatment and disposal (evaporation and infiltration). Recycled water storage in unlined ponds is allowed at the discretion of the Regional Board. A key benefit of the BAWA Project is to reduce the volume of wastewater disposed of through the infiltration ponds and increase the volume of treated effluent that can be used as recycled water for irrigation.

Increased use of recycled water for irrigation will be accomplished by expanding the area available for irrigation from 105 acres to over 400 acres of pasture for grazing in three phases. This benefits local agricultural and provides a use of treated wastewater that would not otherwise occur. The proposed sprinkler system improves the ability of BAWA to irrigate at “agronomic rates.” The Order defines agronomic rates as: *“The rate of application of recycled water to plants necessary to satisfy the plants’ evapotranspiration requirements, considering allowances for supplemental water (e.g. effective precipitation), irrigation distribution uniformity, and leaching requirement, thus minimizing the movement of nutrients below the plants’ root zone.* The agronomic rate in Bishop for irrigated pasture is typically estimated between 4 to 5 feet per year (for example, see “Land Area Calculations for Irrigation Alternatives, RCI 2019). Table 2 shows how the project would put recycled water to use at agronomic rates (percent of wastewater inflow used at agronomic rate of 4.5 ac-ft/ac/year for irrigated pasture).

Table 2. Phased Wastewater Use at Agronomic Rates

Phase	Irrigated Area (acres)	Wastewater Inflow (MGD)	Irrigation Demand “Agronomic Rate” (ac-ft/acre/year)	Percent Wastewater Inflow Used to Irrigate at Agronomic Rates
Existing	105	1.5	4 to 5	25% to 30%
1	169	1.5	4 to 5	40% to 50%
2	342	1.5	4 to 5	80% to 100%
3	474	2.1	4 to 5	80% to 100%

The amount of wastewater flow put to beneficial use for irrigation is 25 to 30 percent under existing conditions and would potentially reach 80 to 100 percent as phases of the BAWA Project are implemented. Expansion of the irrigated pasture and implementation of managed livestock grazing will also promote nitrogen removal from the site.

As described in the Title 22 Report, the BAWA Project will accomplish a transition from the existing manually operated flood irrigation system to a pressurized automated sprinkler system. This change will significantly improve the ability of BAWA to control irrigation distribution and prevent or reduce tailwater and reduce potential for runoff. Tailwater runoff can be managed with a return system but is intrinsic to the type of flood irrigation system at the facility.

The current irrigation practices at the facility have not been reported as creating nuisance odors, though occasional ponding occurs when irrigating. The treatment systems operated by the City and District will continue to achieve the secondary treatment standards required for limited beneficial use of recycled water via irrigation of non-food crops. With better distribution and control, the new sprinkler system is not anticipated to create any odor problems.

The sprinkler system will increase the possibility of generating airborne spray. Fortunately, all phases of the BAWA Project will include control of public access to irrigated areas with signage and fencing. In addition, there is minimal residential, recreation, or commercial development near the project area (Figure 1). Surrounding lands are predominantly irrigated or unirrigated fields owned by LADWP and future development is not anticipated. In Bishop, average prevailing wind direction is from the north most months of the year, but veers to the south southeast during July and August ([Prevailing Wind Direction Table 1992-2002, Western Regional Climate Center](#)). South of the proposed use area there is open land, and the wastewater treatment plants lies to the north northwest. The closest residential area is a small subdivision 2000 feet northeast of the use area adjacent to the East Line Cemetery. The project location will typically prevent airborne spray from entering dwelling areas, eating areas, or food handling areas. In addition, the sprinkler control system can be used to reduce irrigation and manage airborne spray in the event of high wind conditions.

The sprinkler system will give BAWA added flexibility to prevent irrigation of saturated soils as prohibited under Finding 29. Typical of the existing flooding irrigation system, ponding of water has been a recurring challenge. The sprinkler system has automated controls that BAWA can use to irrigate in zones with variable application rates tuned to the characteristics, infiltration rates, and saturation of different soil types. The ability to avoid irrigation on saturated soils is one of the key advantages of the proposed irrigation system compared to the existing flood system.

In order to assure that the recycled water project is consistent with the Uniform Statewide Recycling Criteria, Lumos & Associates has prepared a Title 22 Engineering Report approved by the Regional Water Board. The Title 22 Report describes the level of intended treatment, undisinfected secondary effluent, which is suitable for irrigation of non-food crops for the production of non-dairy cattle as occurs under existing conditions. The Title 22 Report also confirms that the BAWA Project meets all the requirements for backflow prevention, restricted access, and setbacks.

As demonstrated above, the proposed project meets the BPCT requirements for recycled water use by satisfying the conditions and implementing the control technologies prescribed under Finding 29.

### Finding 30

Finding 30 explains how use of recycled water contributes to the maximum benefit to people of the State by encouraging beneficial reuse to improve local water supply availability. The proposed project satisfies the criteria of providing maximum benefit to people of the State by improving economic opportunities, protecting public health, and putting recycled water to beneficial use that would otherwise not occur, while not unreasonably degrading water quality.

By expanding the size and improving flexibility of the irrigation systems, the project supports and improves economic opportunities in two ways. Under Phases 1 and 2, the acreage and quality of irrigated pasture would provide a modest increase in forage production and stocking rates that will benefit local agriculture. Phase 3 is needed to accommodate the small but critical future growth predicted for the Bishop community, which could potentially generate a 10% to 15% increase over the current 1.5 MGD average inflow to the predicted 2.1 MGD average inflow (RCI 2019). Economic considerations, including median household income, current and future annual user charge, and sewer use fee structure have been included in the ROWD Form 200 Section VI Specific Instructions, prepared by Lumos & Associates.

The recycled water is generated locally and will be reused locally for beneficial use. There is no transfer of water nutrients or salt into or out of the hydrologic basin created by this recycled water project. The BAWA Project increases the volume of water put to beneficial use for agricultural in comparison to the existing system (Table 2), and decreases the volume wastewater disposed of through infiltration.

As demonstrated by the Title 22 Report, the BAWA Project will promote safe use of recycled water because the design of the transmission and distribution systems will continue to comply with the Uniform Statewide Recycling Criteria.

- Undisinfected secondary treated effluent will continue to be used for irrigation of non-food pasture crops, and non-dairy cattle production.
- Use areas will comply with requirements for setbacks, cross connection controls, public exclusion, and protection from localized ponding and runoff.

Agronomic rates, as defined by the General Order, are based on plant evapotranspiration requirements: *“The application of water to plants’ necessary to satisfy the plants’ evapotranspiration requirements, considering allowances for supplemental water (e.g. effective precipitation), irrigation distribution uniformity, and leaching requirements, thus minimizing the movement of nutrients below the plant’s root zone.”* (General Order, Attachment D: Definition of Terms). Use of recycled water will allow waste constituents entering the environment, however as phases are implemented, the BAWA Project will improve the ability to use recycled water at agronomic rates (Table 2) and at minimum not exceed the hydraulic capacity of the use area soils. The proposed project puts treated wastewater to use for irrigation water supply that would otherwise not occur.

### Finding 31

Finding 31 describes the characteristics associated with recycled water constituents, the potential to degrade water quality, and findings to show recycled water use will not unreasonably affect beneficial uses consistent with the Anti-Degradation Policy. Groundwater quality is presented under the discussion for Findings 27 and 28.

At present, monitoring well data indicates shallow groundwater quality has been affected (Table 1) by the treatment and disposal facilities (treatment ponds, evaporation/infiltration ponds, and irrigated area). Given that these permitted facilities have been in use continuously for 30-years and rely primarily on infiltration/evaporation for wastewater disposal, localized levels of nitrate and salinity are elevated compared to background water quality. However, broader extent of groundwater monitoring identified through tools accessed through the [GAMA monitoring network](#) (Figure 4) does not indicate a nitrogen or salinity issue with respect groundwater in the Bishop area. Increasing trends in nitrate and salinity are mapped ([USGS CA GAMA-PBP Public-Supply Well \(PSW\) Results: Inorganic Data and Trends, 1974 - 2019](#)) for a small number of wells to the west of Bishop, but these are upgradient of the existing facilities and the BAWA Project.

Benefits of the BAWA Project include increases to the opportunity for nitrogen uptake by pasture grasses and conversion to animal protein through grazing, which removes nitrogen from the use area and reduces nutrient load on shallow groundwater in comparison with existing conditions, reducing the potential for groundwater degradation.

#### Salinity

Salinity as reflected in the effluent data for Total Dissolved Solids or TDS (assumed equivalent to values reported as Total Filterable Residue or TFR) is elevated for groundwater in the immediate vicinity of the wastewater treatment and disposal facilities. Facility monitoring well data provided by the City and ESCSD (Table 1 and Attachment A ), shows a combined average TDS of 396 mg/L and results have periodically exceeded the 500 mg/L the groundwater quality objective (secondary maximum contaminant level). However, TDS of the recycled water is consistently between 290 and 370 mg/L (Table 1 and Attachment A) This salinity level is low for treated wastewater (Metcalf & Eddy, Wastewater Engineering Treatment, and Reuse 4<sup>th</sup> Ed., 2003) and is less than the 500 mg/L water quality objective. It is also important that TDS levels in nearby public water supply wells, which range from 140 to 256 mg/L (Table 1), have remained well below the 500 mg/L objective. The effects of the existing facilities having been in use for over 30 years may be related to the localized increase in salinity, but the regional beneficial uses of groundwater do not appear to be affected. Increasing irrigation of pasture with recycled water would not change the salinity load from wastewater compared to existing conditions. As such, the BAWA Project would not unreasonably degrade groundwater quality or affect beneficial uses.

#### Nitrogen

Nitrogen, as reflected in monitoring well data available for the facility, shows that groundwater quality in the immediate vicinity of the wastewater treatment and disposal facilities has nitrate levels ranging from 1 to 20 mg/L as N and averaging between 5 to 6 mg/L as N (Attachment A). The existing facility operations over the past 30 years are likely to be the source of nitrogen in groundwater (treated effluent averages 24 mg/L as N mostly as ammonia). Though the water quality objective for nitrate (10 mg/L as N, maximum contaminant level) has been exceeded in the local monitoring wells, regional levels average <5 mg/L as N



(Figure 5, [GAMA Needs Analysis Tool](#)). Additional information from GAMA (Figure 6, [USGS CCA GAMA Trend Analysis Tool](#)) shows the nearest water supply wells to have nitrate values of <2 mg/L as N, with a designation of “No Recent Trends” (neither increasing or decreasing) or, in the case of wells northeast of the BAWA Project, “Decreasing” recent trends for nitrate concentrations. GAMA’s 2022 Aquifer Risk Map shows the area as “low risk” (Figure 7, [Aquifer Risk Map for Domestic Wells and State Small Water Systems](#)) with respect to nitrate. These indicators show that the extent of elevated nitrate concentrations in groundwater is localized, and water quality of the public water supply has not been affected. The BAWA project will promote nitrogen uptake by plants and animals, thereby reducing the nitrogen load to groundwater. Estimates of nitrogen removal through the three project phases (Table 3) show nitrogen removal can double in Phase 1 and could increase by 10 to 20 tons per year in Phases 2 and 3.

Table 3. Phased Nitrogen Removal

Phase	Irrigated Area (acres)	Treated Effluent Outflow <sup>1/</sup> (MGD)	Nitrogen Not Removed by Volatilization <sup>2/</sup> (tons/year)	Nitrogen Removal by Plant Uptake and Grazing <sup>3/</sup> (tons/year)
Existing	105	1.29	4.7	3
1	169	1.29	4.7	4 to 9
2	342	1.29	4.7	9 to 19
3	474	1.81	6.6	13 to 27

1/ Assumed 14% loss of wastewater volume due in treatment ponds (RCI 2019)

2/ Estimated nitrogen of 24 mg/L mostly as ammonia for average effluent quality and 10% of effluent nitrogen removed by volatilization during irrigation.

3/ Estimated range of nitrogen uptake for Saltgrass/Western Wheatgrass pasture from yield 3 tons/acre at 25.4 lb. N/ton to yield 5 tons/acre at 29.6 lb./ton. Nitrogen retained from cattle manure calculated using forage utilization 65%, stocking rate from 3.9 to 6.5 AUM/acre, 0.31 lb. N/day/AU, and 60% of manure nitrogen retained on-site.

The BAWA Project will provide the opportunity to optimize the future nitrogen load reduction that can be achieved through well-managed irrigation and grazing operations. The range of estimates shown in Table 3 reflect variable:

- irrigation rates based on soil types, water availability, and climatic conditions,
- species that may be selected to enhance forage production and nutrient uptake
- grazing practices to maintain healthy pasture and maximize utilization at appropriate stocking rates.

Given the low nitrate risk assessed for groundwater under existing conditions (Figure 7) and the opportunity to increase nitrogen removal through the BAWA Project, permitting this project would not pose an unreasonable risk to water quality or beneficial uses.

### Pathogens

Finding 31 acknowledges that pathogens and other microorganisms present in recycled water are “generally limited in their mobility when applied to land.” The BAWA Project will reduce the risk to ground or surface water quality because the potential for tailwater, ponded water, and saturated soil conditions will be significantly reduced when transitioning from the existing flood irrigation to the proposed sprinkler

system. Beneficial uses and groundwater quality will not be unreasonably affected by pathogens as a result of the BAWA Project.

#### Disinfection By-Products (DPBs)

The proposed irrigation project will provide consistent distribution of recycled water over a larger land area, increasing from 105 acres to 474 acres (Figure 1). Consistent with Finding 31.d, the larger distribution area will increase the opportunity for *“biodegradation, adsorption, volatilization, and other attenuative processes that naturally in soil will reduce concentrations and retard migration of DBPs.”* In addition, because disinfection is not used in the wastewater treatment process, DPBs are less likely to be present in the recycled water. As such, the BAWA Project will not pose an unreasonable risk for subsurface contamination or groundwater degradation by DBPs.

#### Chemicals of Emerging Concern (CECs)

CECs are primarily a concern when recycled water use is primarily for groundwater recharge. The irrigation phase of the BAWA Project will continue to increase the volume of wastewater used to grow pasture and reduce the volume infiltrated. Under the site-specific order to be issued, BAWA will comply any monitoring requirements for CECs. Consistent with Finding 31, the BAWA Project will not unreasonably affect beneficial uses or water quality with respect to CECs.

#### Endocrine Disrupting Chemicals (EDCs)

Finding 31(f) focuses on the presence of perchlorate as an EDCCC that may be present in recycled water. Sources of perchlorate known to affect recycled water are not present to our knowledge in the Bishop area (for example, surface water from the Colorado River and groundwater near industrial or military application sites). BAWA’s recycled water is not disinfected with hypochlorite, also listed as a source of perchlorate in wastewater. Mapping from the [GAMA Needs Analysis Tool](#) (Figure 5) shows Perchlorate detection <5 mg/L and zero (0) exceedances in the Bishop Area for Perchlorate. Given the lack of common perchlorate sources in the area, EDC’s do not pose an unreasonable risk to water quality or beneficial uses from the BAWA Project.

### Finding 32

Finding 32 outlines the need to show that recycled water use will not adversely affect downstream water availability by removing a discharge from a watercourse. The BAWA Project proposes a phased expansion of the use area with a corresponding volume increase in treated effluent used for irrigation (Table 2). Consistent with the current system, treated effluent will continue to be a groundwater discharge and will not discharge to surface waters. Implementation of the BAWA Project will not decrease water availability in any downstream watercourse. In addition, the new irrigation system could readily be managed to maintain and enhance plant communities through the BAWA Project phases. To our knowledge, neither the existing irrigation system or the proposed system would diminish discharge to an existing watercourse or affect downstream beneficial uses.

### Finding 33

Finding 33(a) reiterates that Findings 27 through 32 “collectively provide for compliance with antidegradation findings for recycled water projects covered by the General Order”. While it is our understanding that the Regional Board anticipates issuing a site-specific order for the recycled water

Jonathan Lesperance, P.E.

June 3, 2022

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expansion project, demonstration of consistency with Findings 27 through 32 provides direct, pertinent, and appropriate criteria for this antidegradation analysis of the BAWA Project.

## Conclusion

As described above for each of the Findings, this antidegradation analysis demonstrates that through consistency with Findings 27 through 32 of the General Order, the proposed BAWA Project complies with the Antidegradation Policy.

Please do not hesitate to contact me with questions or comments regarding this evaluation.

Best Regards,

A handwritten signature in blue ink that reads "Jill L. Sutherland". The signature is written in a cursive style with a large, sweeping initial "J".

Jill L. Sutherland

Senior Environmental Specialist

Attachment A: Treated Effluent Quality (Title 22 Report)

Attachment B: Figures

# Attachment A

Treated Effluent Quality  
(Title 22 Report)

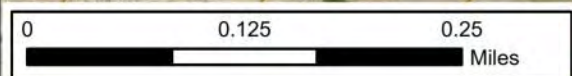
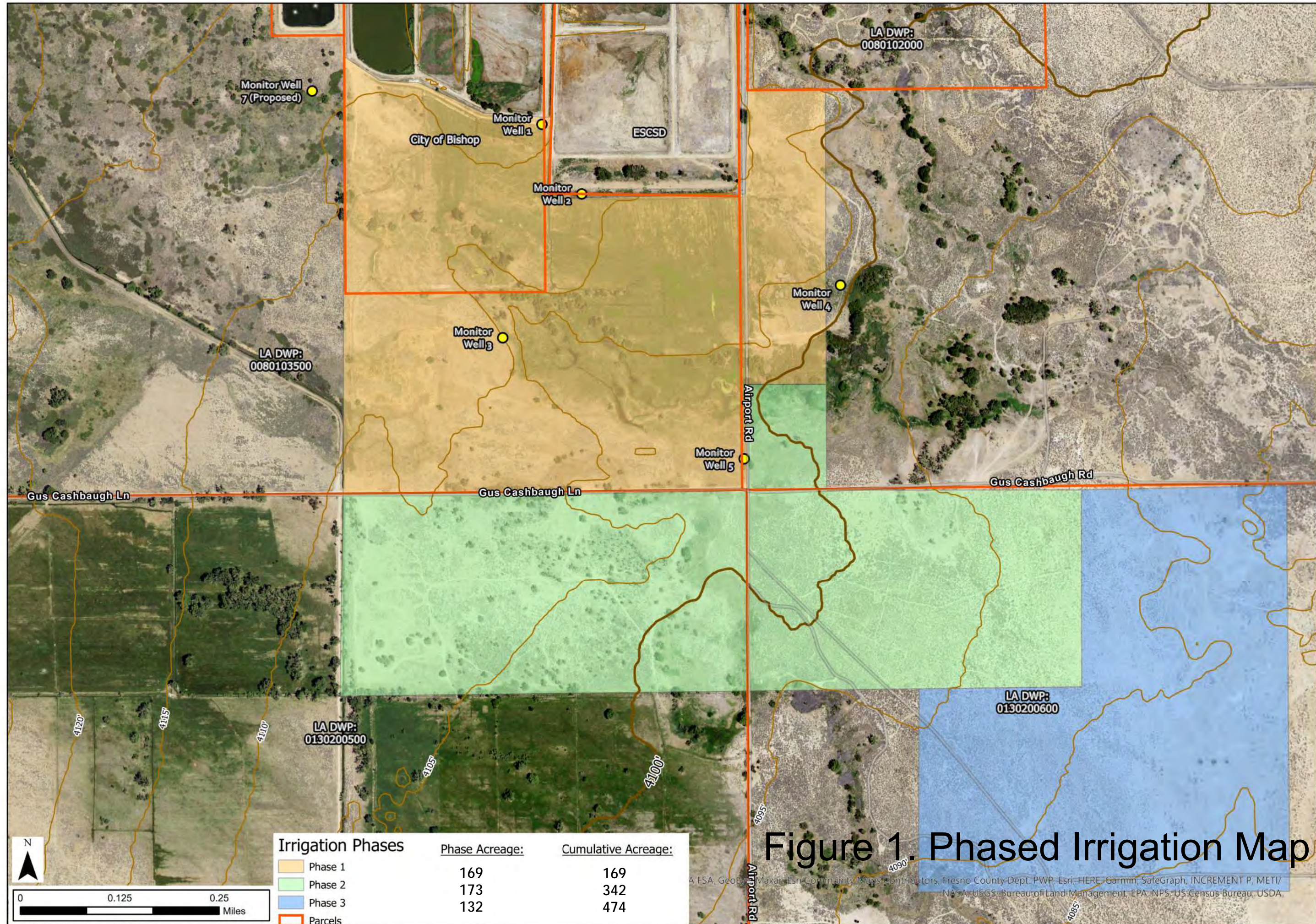
City of Bishop						
Source	Constituent	Average (mg/L)	Max (mg/L)	Min (mg/L)	Confidence Level 95%	Samples
Influent	BOD	213	550	83	470	21
	Ammonia as N	21.11	25	17	24.25	11
	Nitrite as N	0.028	0.31	0.023	0.19	10
	Nitrate as N	3.48	5.2	1.8	5.05	11
	Total Kjeldahl Nitrogen	21.79	26.4	17.5	25.20	11
Effluent	BOD	44.1	110	16	64.40	20
	BOD Dissolved	3.885	7.2	0.7	5.50	21
	pH	7.75	8.3	7.4	8.20	21
	COD	126.7	210	74	198.00	7
	Methylene Blue Active Substance	0.19	0.23	0.13	0.23	3
	Ammonia as N	17.76	35.3	8.25	26.01	14
	Nitrite as N	0.033	0.079	0.0124	0.06	3
	Nitrate as N	4.07	6.7	2.1	5.66	14
	Total Kjeldahl Nitrogen	18.3	36	8.8	26.58	14
	Total Dissolve Solids	315	340	290	337.50	2
Wells	Nitrate as N	5.09	20	0.39	12.40	28
	Total Dissolved Solids	417	1390	190	636.00	23
	Ammonia as N	0.665	0.68	0.65	0.68	2
	Total Kjeldahl Nitrogen	0.67	-	-	-	1
	Total Nitrogen	4.6	-	-	-	1
Not-Detected Concentrations						
Wells	Methylene Blue Active Substance	-	-	-	-	26
	Nitrite as N	-	-	-	-	1
	Organic Nitrogen	-	-	-	-	2

Eastern Siterra Community Services District						
Source	Constituent	Average (mg/L)	Max (mg/L)	Min (mg/L)	Confidence Level 95%	Samples
Influent	BOD	165.9	290	48	273	33
	Ammonia as N	31.84	37	21	36.4	13
Effluent	BOD	34.88	84	20	64.4	19
	COD	144.1	174	97	172.2	10
	Soluble BOD	35.12	216.5	15	93.975	14
	pH	7.29	7.8	6.93	7.5	30
	Ammonia as N	19.96	43	6.35	27.43	23
	Nitrite as N	0.035	0.14	0.022	0.053	22
	Nitrate as N	3.97	5.8	1.8	5.7	26
	Total Dissolved Solids	330.4	370	299	367.75	10
	Organic Nitrogen	2.095	7.13	0.15	6.195	4
	Total Kjeldahl Nitrogen	21.88	44	9	35.5	21
	Methylene Blue Active Substance	0.133	0.18	0.11	0.18	8
	Total Nitrogen	14.8	-	-	-	1
Wells	Nitrate as N	6.01	16.5	0.8	13.25	39
	Total Dissolved Solids	382.5	530	220	505	36
	Total Suspended Solids	77.7	248	4.8	215.72	4
Sludge	Total Alkalinity	2540	-	-	-	1
	Total Solids	1.79	-	-	-	1
	Volatile Acids	80.4	-	-	-	1
Not-Detected Concentrations						
Wells	Methylene Blue Active Substance	-	-	-	-	40

# Attachment B

Figures





Irrigation Phases	Phase Acreage:	Cumulative Acreage:
<span style="color: orange;">■</span> Phase 1	169	169
<span style="color: green;">■</span> Phase 2	173	342
<span style="color: blue;">■</span> Phase 3	132	474
<span style="color: orange;">■</span> Parcels		

**Figure 1. Phased Irrigation Map**

Bishop Area Wastewater Authority  
**BAWA Title 22 Investigation  
Irrigation Phasing Map**

CA  
Inyo  
Bishop

REV DATE	DESCRIPTION	BY

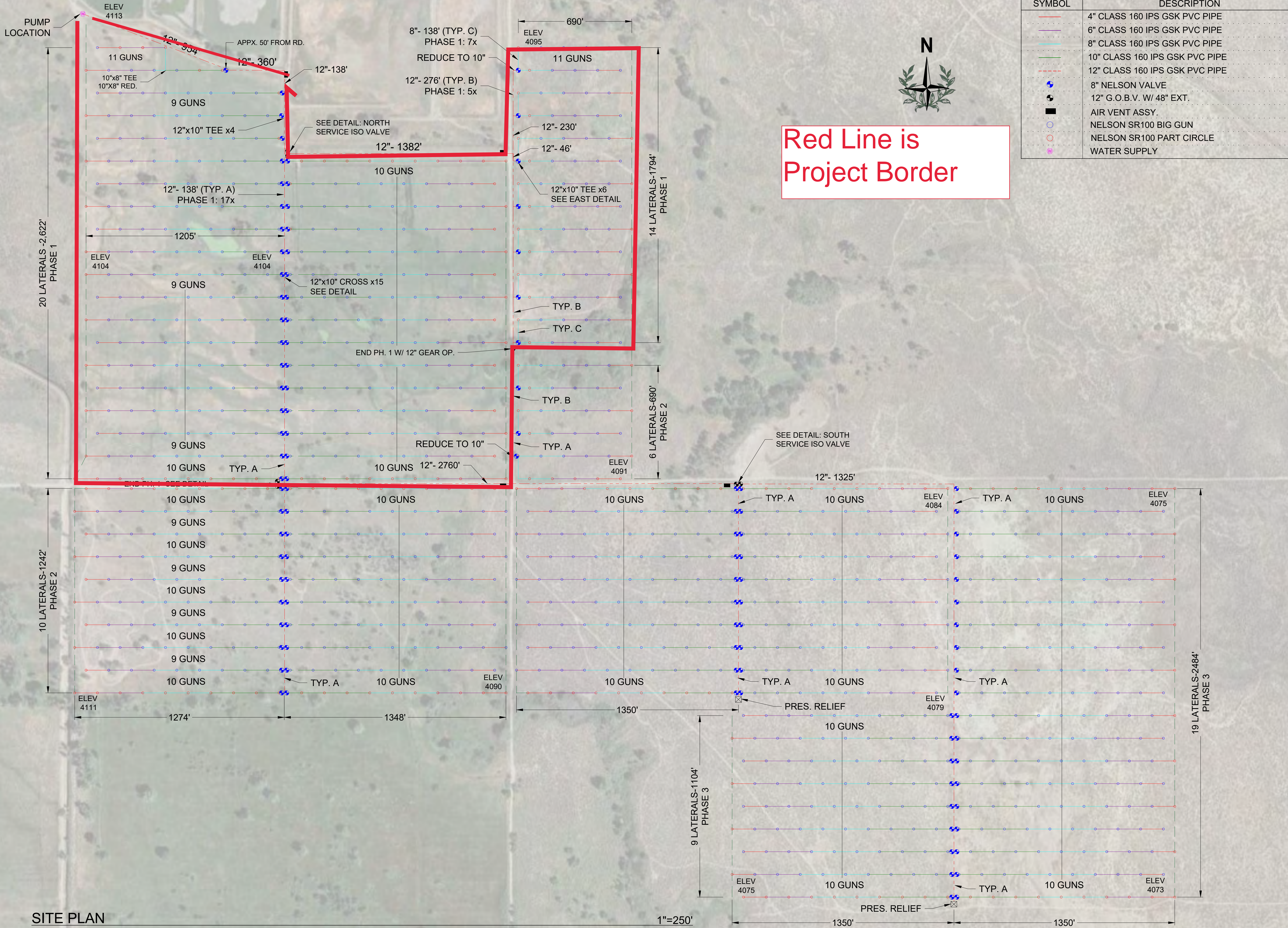
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0" 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

**FIG. 10**

DRAWN BY: DRB  
DESIGNED BY: NTC  
CHECKED BY: JL  
JOB NO.: 10248.000  
SHEETS: 10 of 10





SYMBOL	DESCRIPTION
	4" CLASS 160 IPS GSK PVC PIPE
	6" CLASS 160 IPS GSK PVC PIPE
	8" CLASS 160 IPS GSK PVC PIPE
	10" CLASS 160 IPS GSK PVC PIPE
	12" CLASS 160 IPS GSK PVC PIPE
	8" NELSON VALVE
	12" G.O.B.V. W/ 48" EXT.
	AIR VENT ASSY.
	NELSON SR100 BIG GUN
	NELSON SR100 PART CIRCLE
	WATER SUPPLY

**Red Line is Project Border**



SITE PLAN

1"=250'

Figure 2. Preliminary Irrigation Plan

**LAUREL**  
A G & WATER

**CITY OF BISHOP  
WASTEWATER-PASTURE  
OPUSI-000276**  
POLETA RD & AIRPORT RD  
BISHOP, CA

PREPARED FOR:

REVISIONS	DATE
#	

DESIGN:	N. MURRAY
DRAWING:	N. MURRAY
APPROVAL:	LAUREL DESIGN

**PROJECT  
IRRIGATION PLAN**

DATE: 02/05/2021

SHEET:

**CI-101**



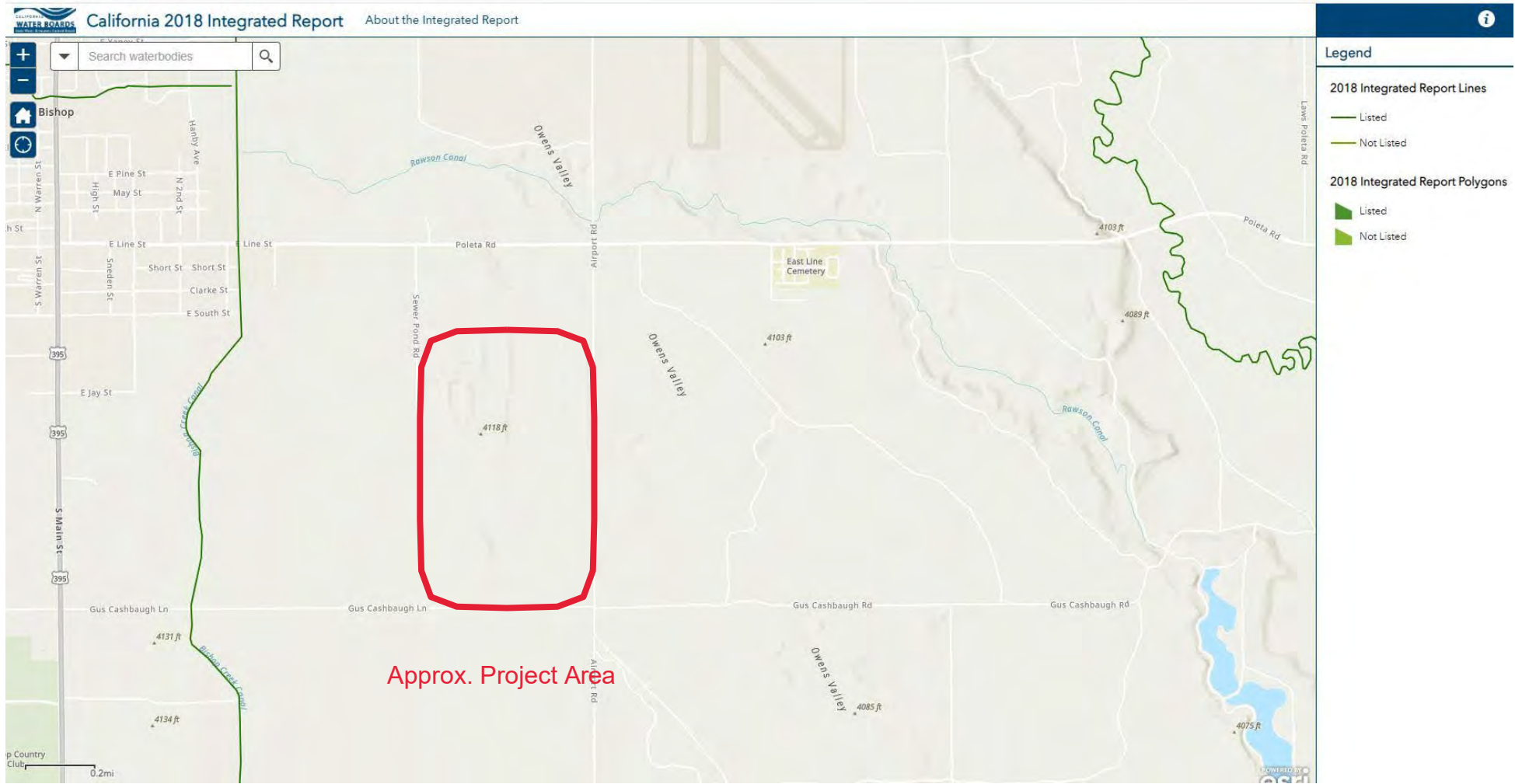


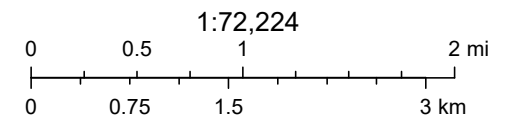
Figure 3. 2018 Integrated Report Map

# GAMA Tool - Wells Used for WQ Estimation



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 NAWells\_New

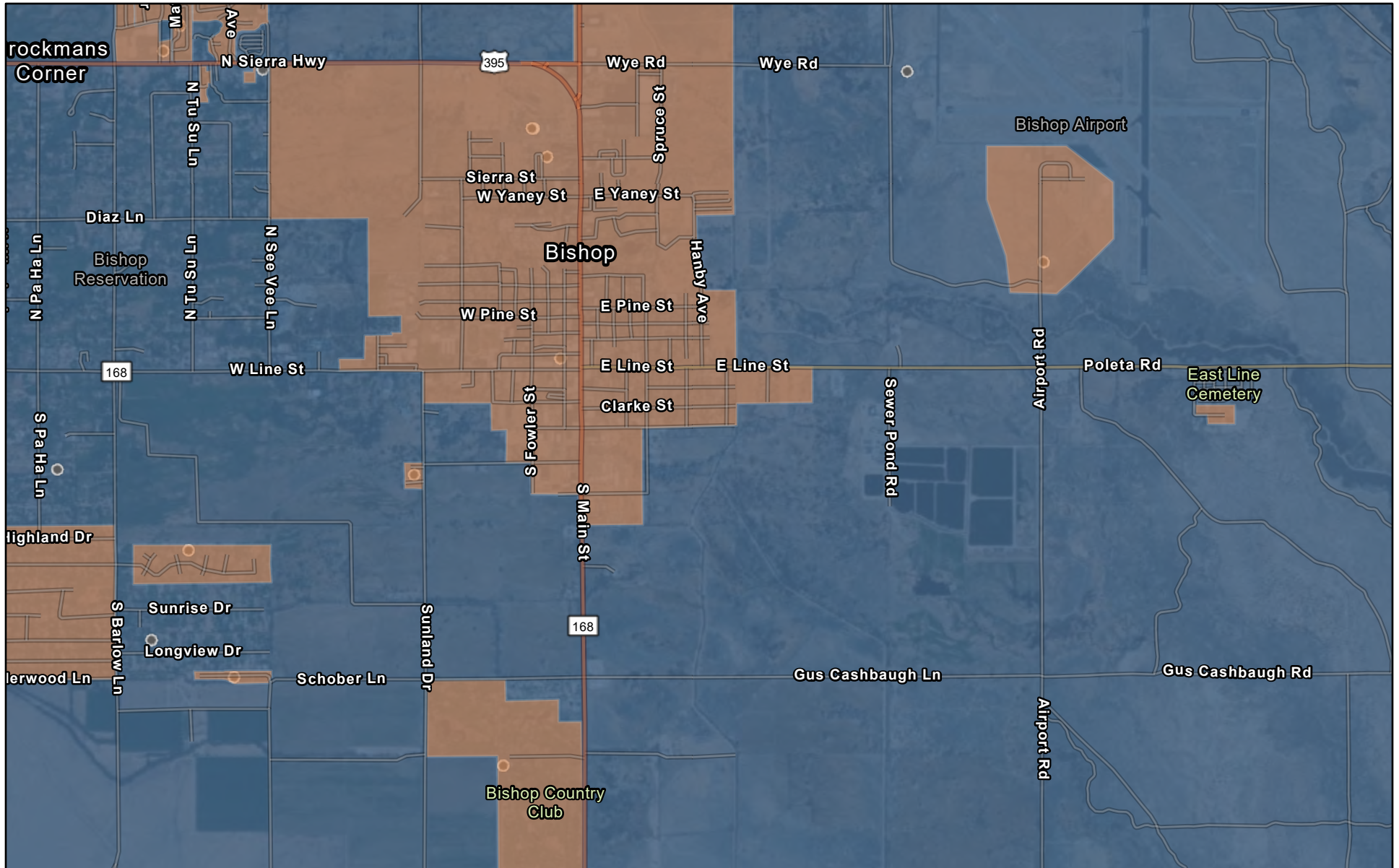


Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Data queried

ArcGIS Web AppBuilder

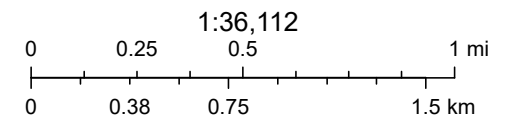
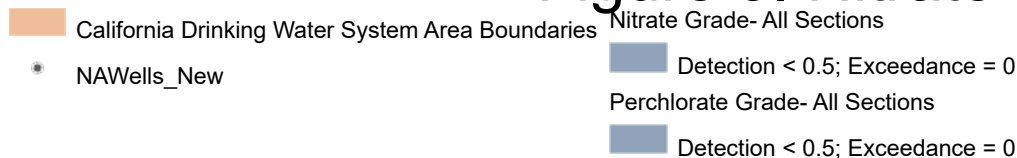


# GAMA Tool - Perchlorate & Nitrate



5/3/2022, 4:48:57 PM

## Figure 5. Nitrate & Perchlorate



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Data queried

ArcGIS Web AppBuilder

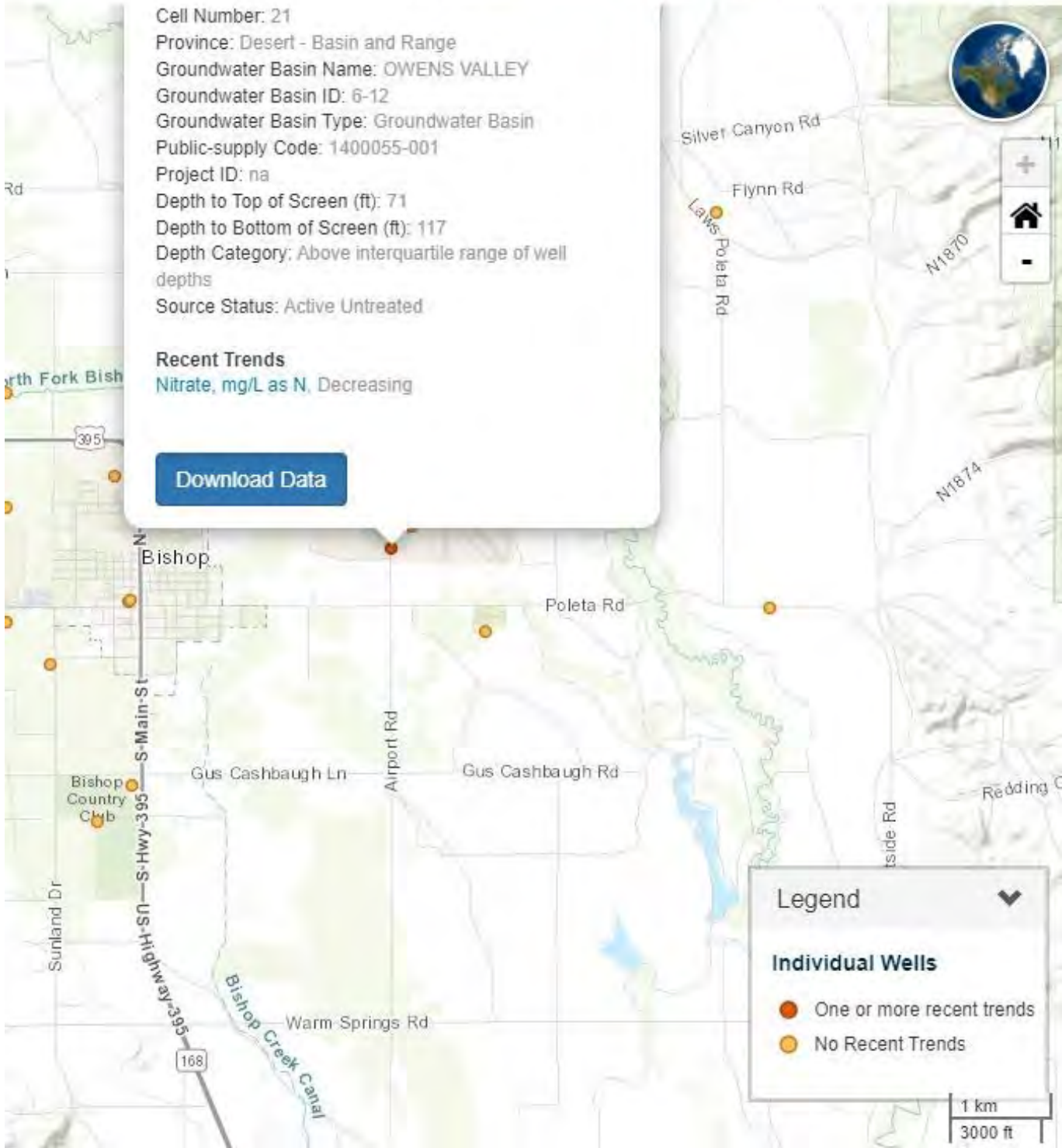


Figure 6. Individual Well Trends



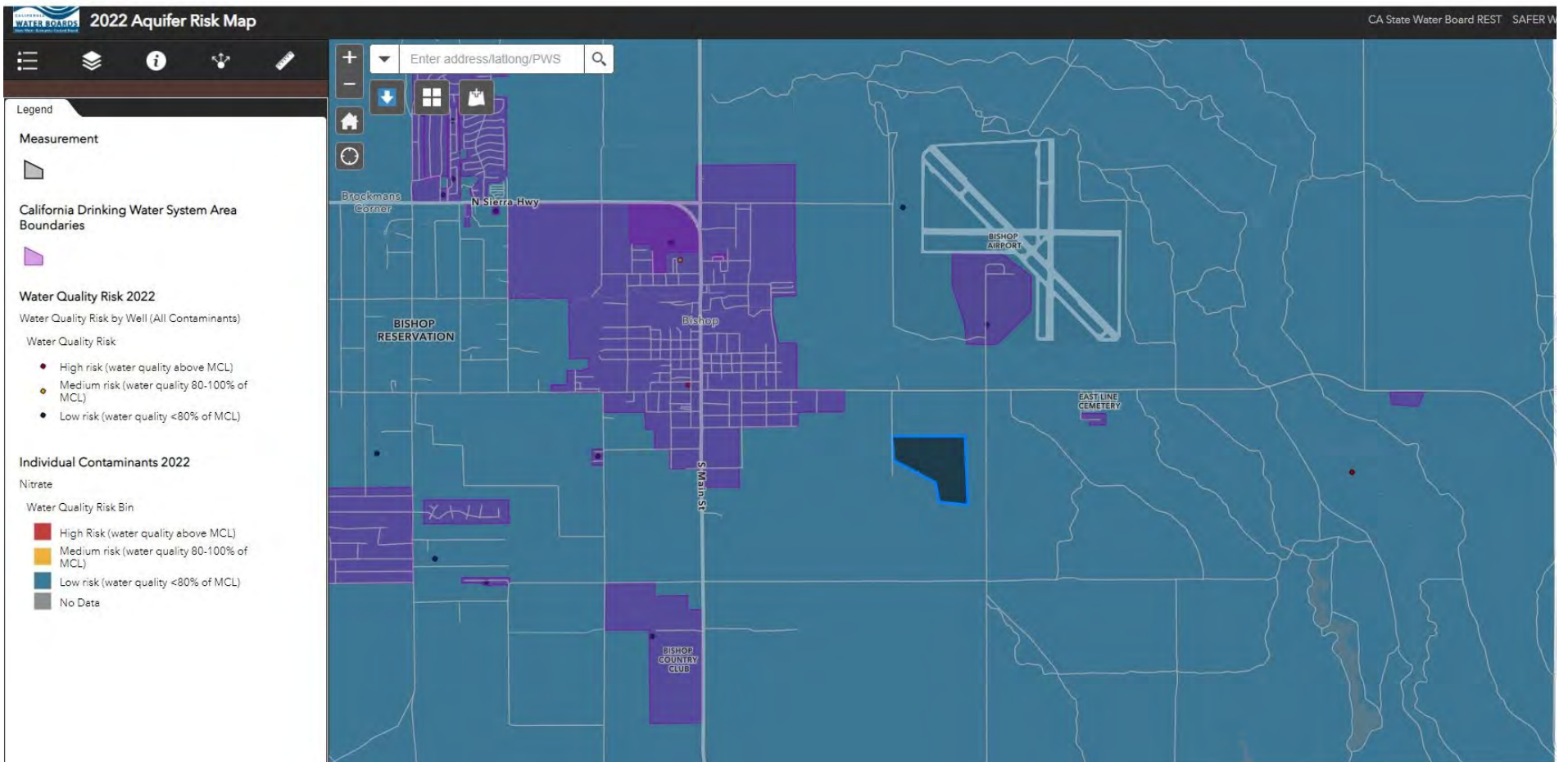


Figure 7. Aquifer Risk Map - Nitrate



## **Appendix F: Groundwater Contour Figures**



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○ MONITOR WELLS  
— GROUNDWATER CONTOURS 2019 (2 FT.)  
SCALE: 1" : 500'



Gus Cashbaugh Ln

Gus Cashbaugh Ln

Source: Esri, USDA FSA, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Esri Community Maps Contributors, Fresno County Dept. PWP, © OpenStreetMap contributors, Microsoft, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA

Bishop Area Wastewater Authority  
**BAWA Report of Waste Discharge**  
**Monitor Wells and Groundwater Contours**

REV DATE	DESCRIPTION	BY

BAR IS 1 INCH ON ORIGINAL DRAWING  
0' 1'

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

Fig. \_\_\_\_\_  
DRAWN BY: DRB  
DESIGNED BY: LJF  
CHECKED BY: JL  
JOB NO.: 10474.000  
SHEETS:

Bishop Inyo CA

Gus Cash



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○ MONITOR WELLS  
— GROUNDWATER CONTOURS 2020 (2 FT.)  
SCALE: 1" : 500'



Gus Cashbaugh Ln

Maxar, Microsoft, Esri Community Maps Contributors, Fresno County Dept. PWP, © OpenStreetMap contributors, Microsoft, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA

Bishop Area Wastewater Authority  
**BAWA Report of Waste Discharge**  
**Monitor Wells and Groundwater Contours**

REV DATE	DESCRIPTION	BY

BAR IS 1 INCH ON ORIGINAL DRAWING  
0" 1"  
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

Fig. \_\_\_\_\_  
DRAWN BY: DRB  
DESIGNED BY: LJF  
CHECKED BY: JL  
JOB NO.: 10474.000  
SHEETS:

Bishop Inyo CA



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○ MONITOR WELLS  
— GROUNDWATER CONTOURS 2021 (2 FT.)  
SCALE: 1" : 500'



Bishop Area Wastewater Authority  
**BAWA Report of Waste Discharge  
Monitor Wells and Groundwater Contours**  
CA

REV	DATE	DESCRIPTION	BY

BAR IS 1 INCH ON ORIGINAL DRAWING  
0" 1"  
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

Fig. \_\_\_\_\_  
DRAWN BY: DRB  
DESIGNED BY: LJF  
CHECKED BY: JL  
JOB NO.: 10474.000  
SHEETS:





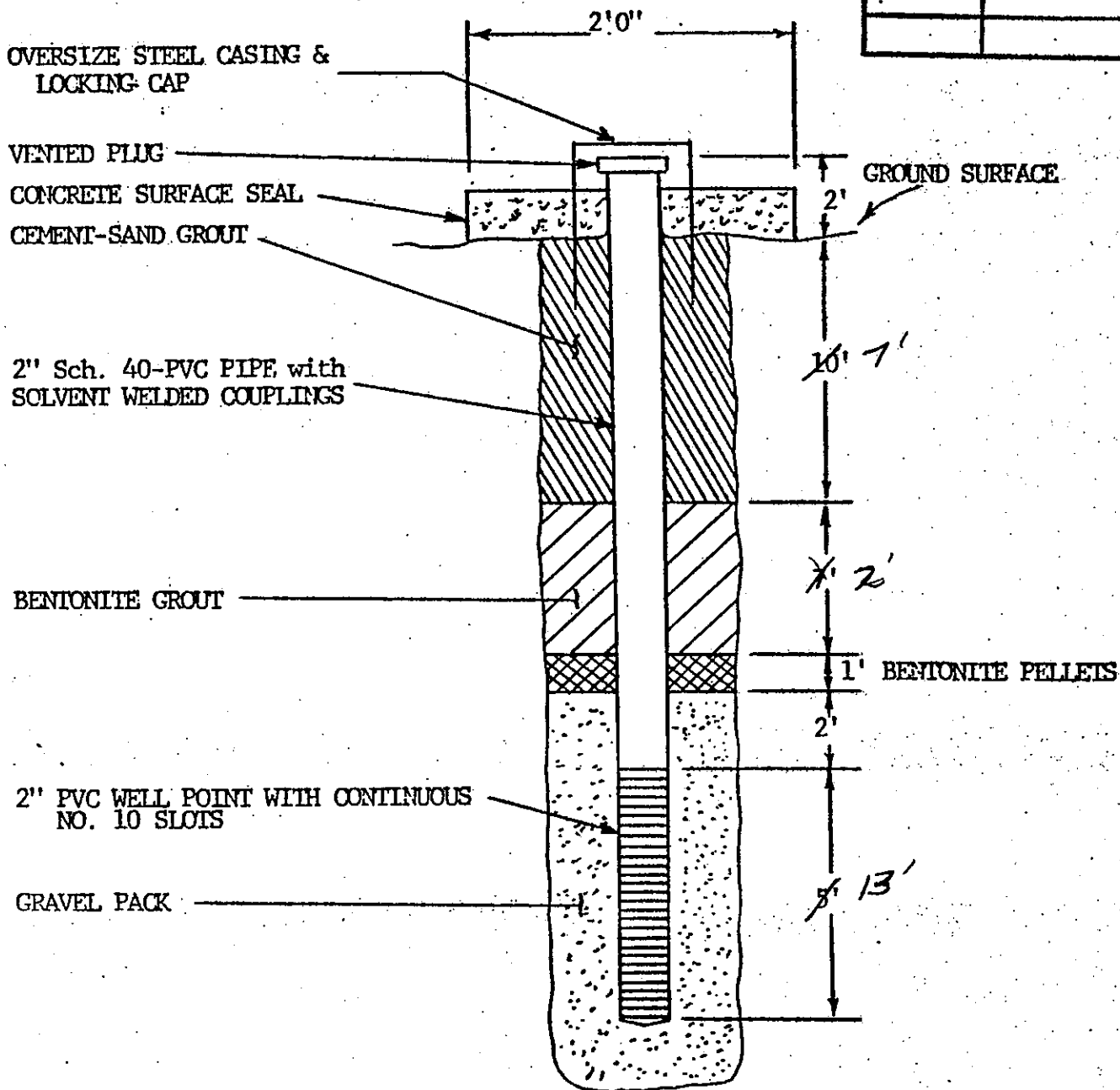
## **Appendix G: Borehole Lithology Logs**



DESIGN OF CITY OF BISHOP AND  
EASTERN SIERRA COMMUNITY SERVICE DISTRICT  
MONITORING WELLS #4 & #5  
FOR EXPANDED IRRIGATION AREA

10-8

Rec'd.	[007] 2 1985
RSJ	10/2
GJT	10/4



Dan:

We agree w/ this design, with the noted changes as discussed w/ you by telephone 10/4/85

*MJ Guillevault* (Lahontan engineer)

No. **231894**

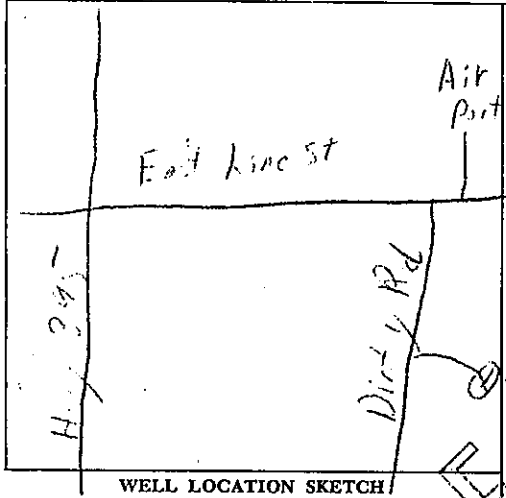
Notice of Intent No. 228918  
Local Permit No. or Date 10-8-85

State Well No. \_\_\_\_\_  
Other Well No. \_\_\_\_\_

**Well #4**

(1) OWNER: Name Eastern Sierra Community Service District  
Address \_\_\_\_\_  
City Bishop Co. \_\_\_\_\_ Zip 93514

(2) LOCATION OF WELL (See instructions):  
County INYO Owner's Well Number 4  
Well address if different from above \_\_\_\_\_  
Township 7S Range 33E Section 9  
Distance from cities, roads, railroads, fences, etc. 3 Mile East  
1 Mile South  
East Line St Dirt Rd



(3) TYPE OF WORK:  
New Well  Deepening   
Reconstruction   
Reconditioning   
Horizontal Well   
Destruction  (Describe destruction materials and procedures in Item 12)  
(4) PROPOSED USE:  
Domestic   
Irrigation   
Industrial   
Test Well   
Stock   
Municipal   
Other Monitoring

(5) EQUIPMENT:  
Rotary  Reverse   
Cable  Air   
Other  Bucket

(6) GRAVEL PACK:  
Yes  No  Size \_\_\_\_\_  
Diameter of bore \_\_\_\_\_  
Packed from 18 to 25 ft.

(7) CASING INSTALLED:

From ft.	To ft.	Dia. in.	Gage or Wall
<u>0</u>	<u>25</u>	<u>2</u>	<u>14</u>

(8) PERFORATIONS:

From ft.	To ft.	Slot size

(9) WELL SEAL:  
Was surface sanitary seal provided? Yes  No  If yes, to depth 13 ft.  
Were strata sealed against pollution? Yes  No  Interval \_\_\_\_\_ ft.  
Method of sealing \_\_\_\_\_

(10) WATER LEVELS:  
Depth of first water, if known \_\_\_\_\_ ft.  
Standing level after well completion \_\_\_\_\_ ft.

(11) WELL TESTS:  
Was well test made? Yes  No  If yes, by whom? \_\_\_\_\_  
Type of test Pump  Bailor  Air lift   
Depth to water at start of test \_\_\_\_\_ ft. At end of test \_\_\_\_\_ ft.  
Discharge \_\_\_\_\_ gal/min after \_\_\_\_\_ hours Water temperature \_\_\_\_\_  
Chemical analysis made? Yes  No  If yes, by whom? \_\_\_\_\_  
Was electric log made? Yes  No  If yes, attach copy to this report

(12) WELL LOG: Total depth \_\_\_\_\_ ft. Depth of completed well \_\_\_\_\_ ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
<u>0</u>	<u>2</u>	<u>silt in sand</u>
<u>2</u>	<u>7</u>	<u>Clay &amp; tan sand</u>
<u>7</u>	<u>30</u>	<u>loose gravel &amp; sand course</u>

Work started 10-25 1985 Completed 10-25 1985

WELL DRILLER'S STATEMENT:  
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED [Signature] (Well Driller)  
NAME Maranatha Drilling & Pump Ser.  
(Person, firm, or corporation) (Typed or printed)  
Address RT. 4 Box 18 C  
City Bishop, Calif. Zip 93514  
License No. 417231 Date of this report 12-10 - 85

Notice of Intent No. x28 228885

Local Permit No. or Date \_\_\_\_\_

Well # 5

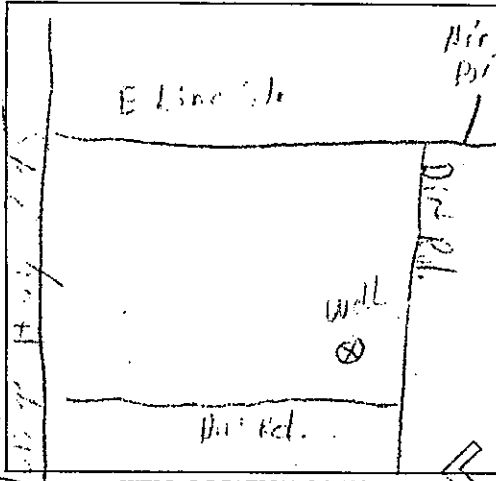
State Well No. \_\_\_\_\_

Other Well No. \_\_\_\_\_

(1) OWNER: Name Eastern Sierra Community Service Dist.  
Address \_\_\_\_\_  
City Bishop, Ca. Zip 93514

(12) WELL LOG: Total depth 30 ft. Depth of completed well \_\_\_\_\_ ft.  
from ft. to ft. Formation (Describe by color, character, size or material)  
0 - 4 black clay  
4 - 12 gravel & some sand  
12 - 13 blue clay  
13 - 18 clay  
18 - 20 sandy  
20 - 30 sand gravel & clay

(2) LOCATION OF WELL (See instructions):  
County Inyo Owner's Well Number 5  
Well address if different from above \_\_\_\_\_  
Township 7S Range 33 E Section 9  
Distance from cities, roads, railroads, fences, etc. 3mi. E. off Hwg.  
395 1mi. S. off East Line St. Dirt Rd.



(3) TYPE OF WORK:  
New Well  Deepening   
Reconstruction   
Reconditioning   
Horizontal Well   
Destruction  (Describe destruction materials and procedures in Item 12)  
(4) PROPOSED USE:  
Domestic   
Irrigation   
Industrial   
Test Well   
Stock   
Municipal   
Other monitoring

(5) EQUIPMENT:  
Rotary  Reverse   
Cable  Air   
Other  Bucket

(6) GRAVEL PACK:  
Yes  No  Size 3/8  
Diameter of bore 6  
Packed from 18 to 25 ft.

(7) CASING INSTALLED:  
Steel  Plastic  Concrete

(8) PERFORATIONS:  
Type of perforation or size of screen

From ft.	To ft.	Dia. in.	Gage of Wall	From ft.	To ft.	Slot size
0	25	2	sch 40	18	25	1/32x3

(9) WELL SEAL:  
Was surface sanitary seal provided? Yes  No  If yes, to depth 18 ft.  
Were strata sealed against pollution? Yes  No  Interval \_\_\_\_\_ ft.  
Method of sealing cement grout

(10) WATER LEVELS:  
Depth of first water, if known \_\_\_\_\_ ft.  
Standing level after well completion \_\_\_\_\_ ft.

(11) WELL TESTS:  
Was well test made? Yes  No  If yes, by whom? \_\_\_\_\_  
Type of test Pump  Bailer  Air lift   
Depth to water at start of test \_\_\_\_\_ ft. At end of test \_\_\_\_\_ ft.  
Discharge \_\_\_\_\_ gal/min after \_\_\_\_\_ hours Water temperature \_\_\_\_\_  
Chemical analysis made? Yes  No  If yes, by whom? \_\_\_\_\_  
Was electric log made? Yes  No  If yes, attach copy to this report

Work started 10-26-1985 Completed 10-26-1985

WELL DRILLER'S STATEMENT:  
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.  
SIGNED Joseph K. [Signature] (Well Driller)  
NAME Maranatha Drilling & Pump Ser.  
(Person, firm, or corporation) (Typed or printed)  
Address RT. 4 Box 18 C  
City Bishop, Ca. Zip 93514  
License No. 714231 Date of this report 12-10-85

**Project: R.O. Anderson - ESCSD**

**Project Location: Bishop, California**

**Project Number: JW11320**

**Key to Log of Boring/Well**

Sheet 1 of 1

Elevation, feet	Depth, feet	SAMPLES		Graphic Log	MATERIAL DESCRIPTION	WELL SCHEMATIC	REMARKS
		Type	Number				
1	2	3	4	5	6	7	8

**COLUMN DESCRIPTIONS**

- 1 Elevation:** Elevation in feet relative to mean sea level (MSL).
- 2 Depth:** Depth in feet below the ground surface.
- 3 Sample Type:** Type of sample collected at depth interval shown; sampler symbols are explained below.
- 4 Sample Number:** Sample identification number.
- 5 Graphic Log:** Graphic depiction of subsurface material encountered; typical symbols are explained below.
- 6 Material Description:** Description of material encountered; in addition to soil classification and USCS, may include color, moisture, consistency or apparent density, approximate percentages of soil components, grain size, and plasticity.
- 7 Well Schematic:** Well construction details (or backfill if no well); materials and placement depths are listed in header and alongside schematic; graphics are explained below.
- 8 Remarks:** Comments and observations regarding drilling or sampling made by driller or field personnel.

**TYPICAL SOIL GRAPHIC SYMBOLS**

POORLY GRADED SAND (SP)	WELL-GRADED SAND (SW)	SILTY SAND (SM)	CLAYEY SAND (SC)
POORLY GRADED SAND WITH SILT (SP-SM)	POORLY GRADED GRAVEL (GP)	WELL-GRADED GRAVEL (GW)	CLAYEY GRAVEL (GC)
SILT (ML)	CLAY (CL)	SILTY CLAY (CL)	CLAYEY SILT (ML)

**TYPICAL WELL GRAPHIC SYMBOLS**

Blank casing in concrete	Blank casing in filter sand
Blank casing in cement grout	Slotted casing in filter sand
Blank casing in medium bentonite chips	Slough or heaving sand

**TYPICAL SAMPLER GRAPHIC SYMBOLS**

2-inch-OD split spoon (SPT)	Continuous soil core
2.5-inch-OD split barrel with brass liners (modified California)	Bulk sample
Direct push tube sampler	Grab sample

**OTHER GRAPHIC SYMBOLS**

- First water encountered at time of drilling
- Static water level measured in well
- Change in material properties within a stratum
- Inferred contact between strata or gradational change in lithology

**GENERAL NOTES**

- Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive; actual lithologic changes may be gradual.
- Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

Report: JW1\_SONIC\_WELL\_KEY; File: C:\PROGRAM FILES\GINT 7\JOHNSON\JWL\_ROA-ESCSD.GPJ; 5/09/13



**Project: R.O. Anderson - ESCSD**

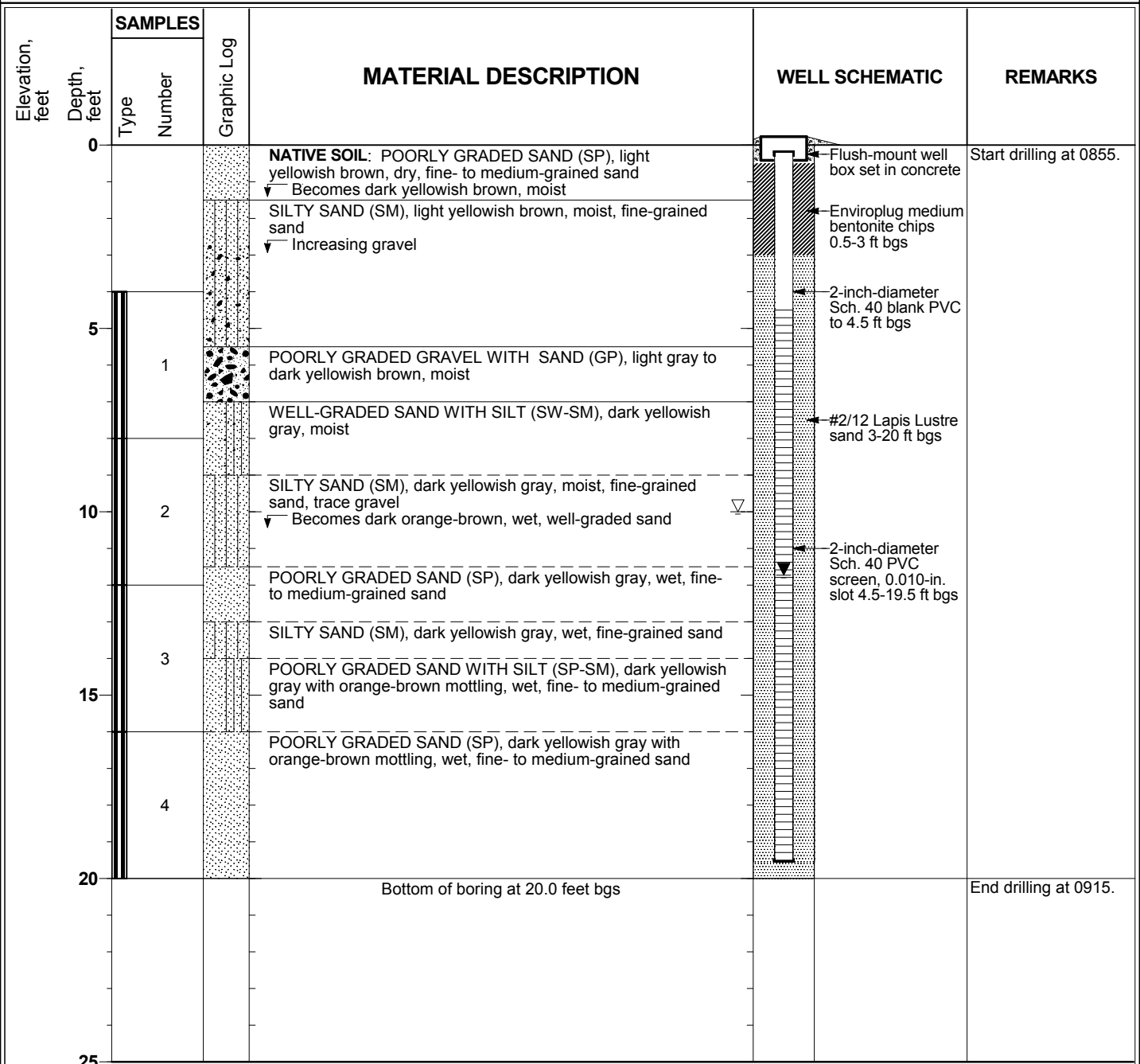
**Project Location: Bishop, California**

**Project Number: JW1320**

**Log of Boring/Well MW-6**

Sheet 1 of 1

Date(s) Drilled	4/16/13			Logged By	A. Zdon	Total Depth of Borehole	20.0 feet
Drilling Method	Hollow-Stem Auger			Drilling Contractor	Gregg Drilling & Testing	Surface Elevation	Not available
Drill Rig	Morrow LAR			Drill Bit Size/Type	8-1/4-inch auger	Top of PVC Elevation	Not available
Groundwater Level (feet bgs)	First	Completion	Development	Sampling Method(s)	Continuous soil core		
	10	--	11.73	Well Casing	Schedule 40 PVC		
Diameter of Hole (inches)	9	Diameter of Well (inches)	2	Hammer Data	Not applicable		
Sand Pack	#2/12 Lapus Lustre (3-20 ft)			Seal(s)	Enviroplug medium bentonite chips (0.5-3 ft)		
Location	Refer to site plan			Comments	Borehole hand-augered to 4 feet bgs.		



Report: JW1\_SONIC\_WELL; File: C:\PROGRAM FILES\GINT 7\JOHNSON\JW1\_ROA-ESCSD.GPJ; 5/29/13

**Project: R.O. Anderson - ESCSD**

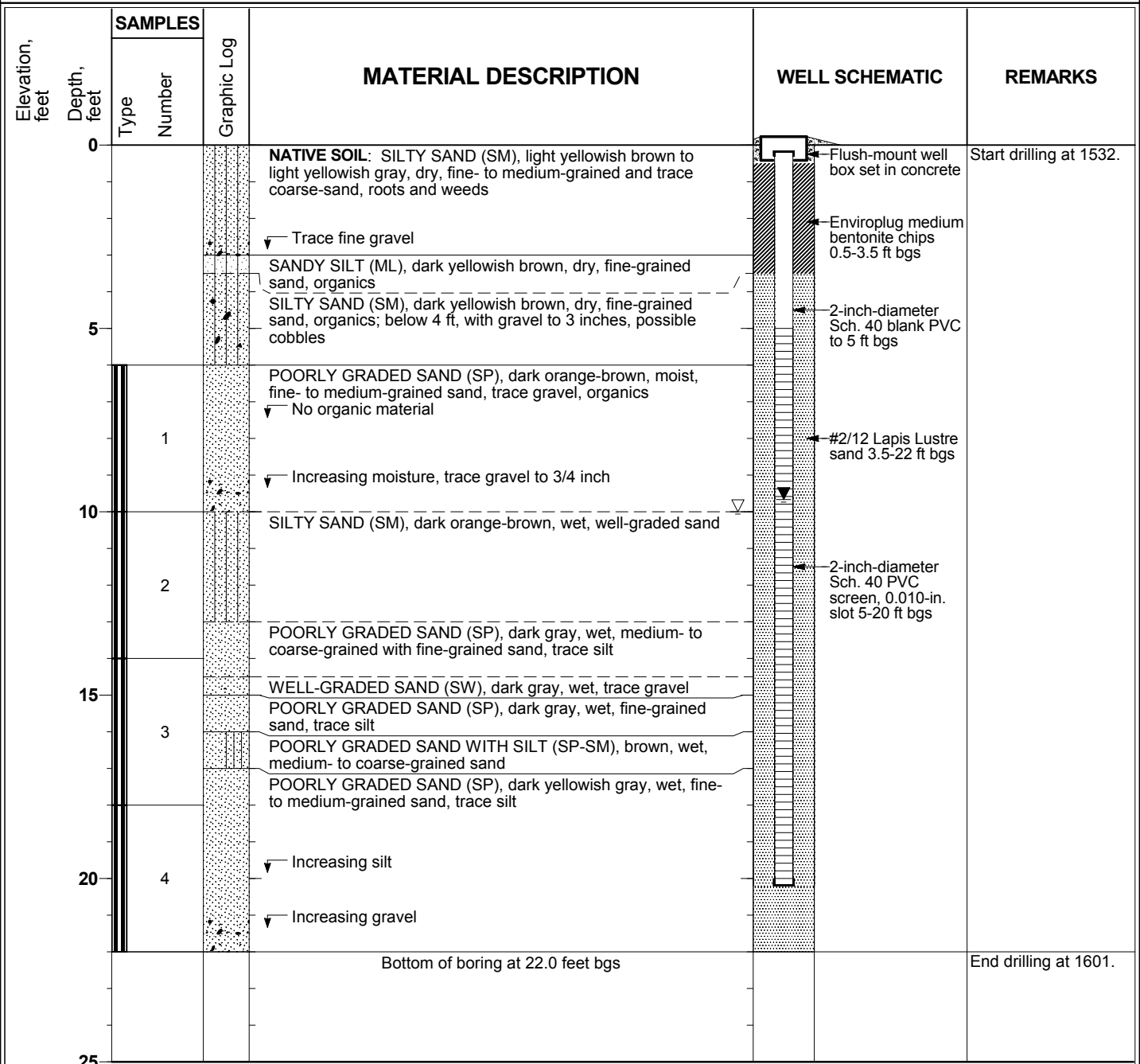
**Project Location: Bishop, California**

**Project Number: JW1320**

**Log of Boring/Well MW-7**

Sheet 1 of 1

Date(s) Drilled	4/15/13			Logged By	A. Zdon		Total Depth of Borehole	22.0 feet	
Drilling Method	Hollow-Stem Auger			Drilling Contractor	Gregg Drilling & Testing		Surface Elevation	Not available	
Drill Rig	Morrow LAR			Drill Bit Size/Type	8-1/4-inch auger		Top of PVC Elevation	Not available	
Groundwater Level (feet bgs)	First 10	Completion 7.6	Development 9.67	Sampling Method(s)	Continuous soil core		Hammer Data	Not applicable	
Diameter of Hole (inches)	9		Diameter of Well (inches)	2		Well Casing	Schedule 40 PVC		
Sand Pack	#2/12 Lapis Lustre (3.5-22 ft)			Seal(s)	Enviroplug medium bentonite chips (0.5-3.5 ft)				
Location	Refer to site plan			Comments	Borehole hand-augered to 4 feet bgs.				



Report: JW1\_SONIC\_WELL; File: C:\PROGRAM FILES\GINT 7\JOHNSON\JWI\_ROA-ESCSD.GPJ; 5/29/13

**Project: R.O. Anderson - ESCSD**

**Project Location: Bishop, California**

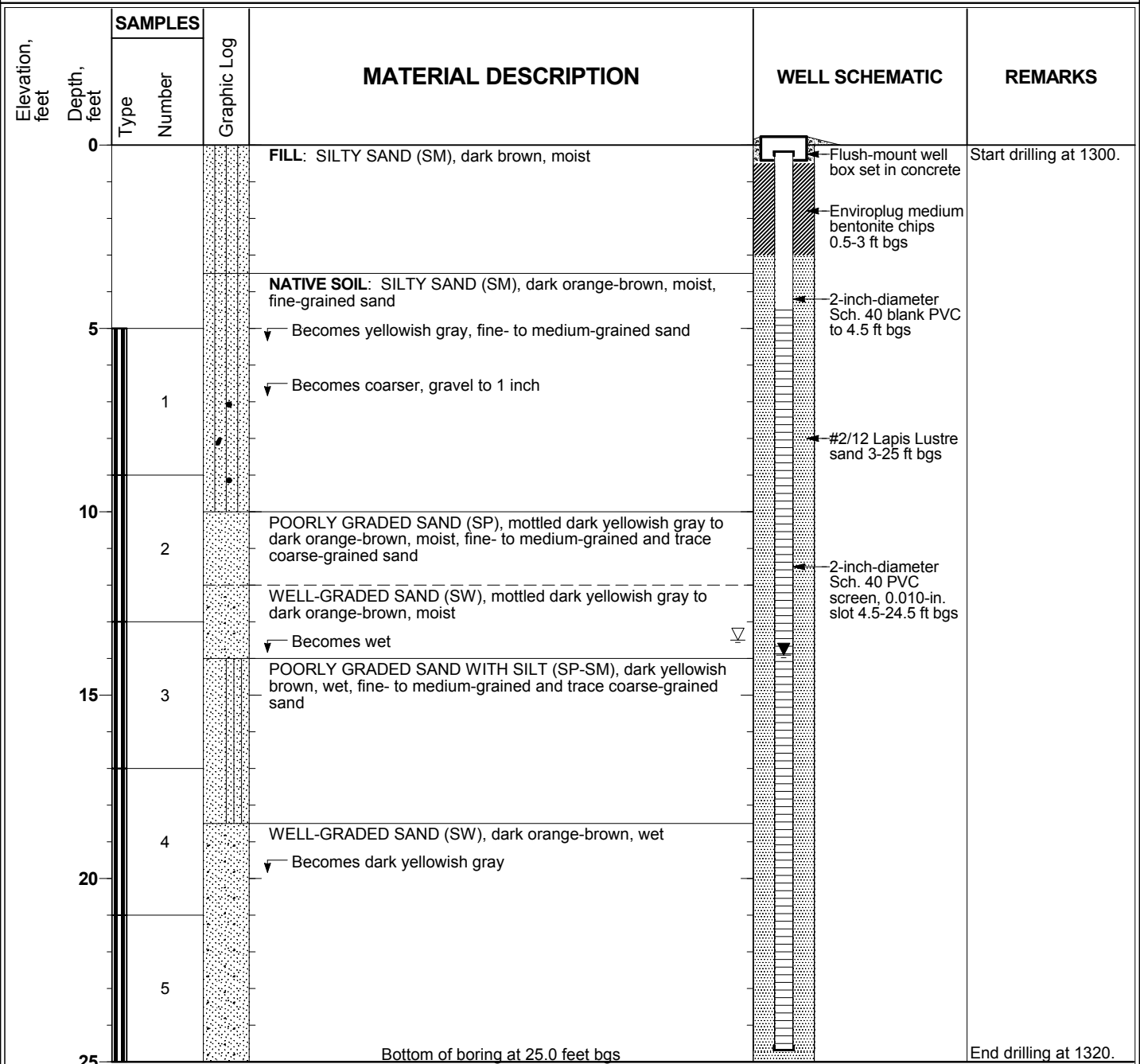
**Project Number: JW11320**

**Log of Boring/Well MW-8**

Sheet 1 of 1

Actually 4/16/13

Date(s) Drilled	5/16/13	Logged By	A. Zdon	Total Depth of Borehole	25.0 feet
Drilling Method	Hollow-Stem Auger	Drilling Contractor	Gregg Drilling & Testing	Surface Elevation	Not available
Drill Rig	Morrow LAR	Drill Bit Size/Type	8-1/4-inch auger	Top of PVC Elevation	Not available
Groundwater Level (feet bgs)	First 13.5	Completion 13.85	Development 13.91	Sampling Method(s)	Continuous soil core
Diameter of Hole (inches)	9	Diameter of Well (inches)	2	Well Casing	Schedule 40 PVC
Sand Pack	#2/12 Lapus Lustre (3-25 ft)		Seal(s)	Enviroplug medium bentonite chips (0.5-3 ft)	
Location	Refer to site plan		Comments	Borehole hand-augered to 5 feet bgs.	



Report: JW1\_SONIC\_WELL; File: C:\PROGRAM FILES\GINT 7\JOHNSON\JW1\_ROA-ESCSD.GPJ; 5/29/13

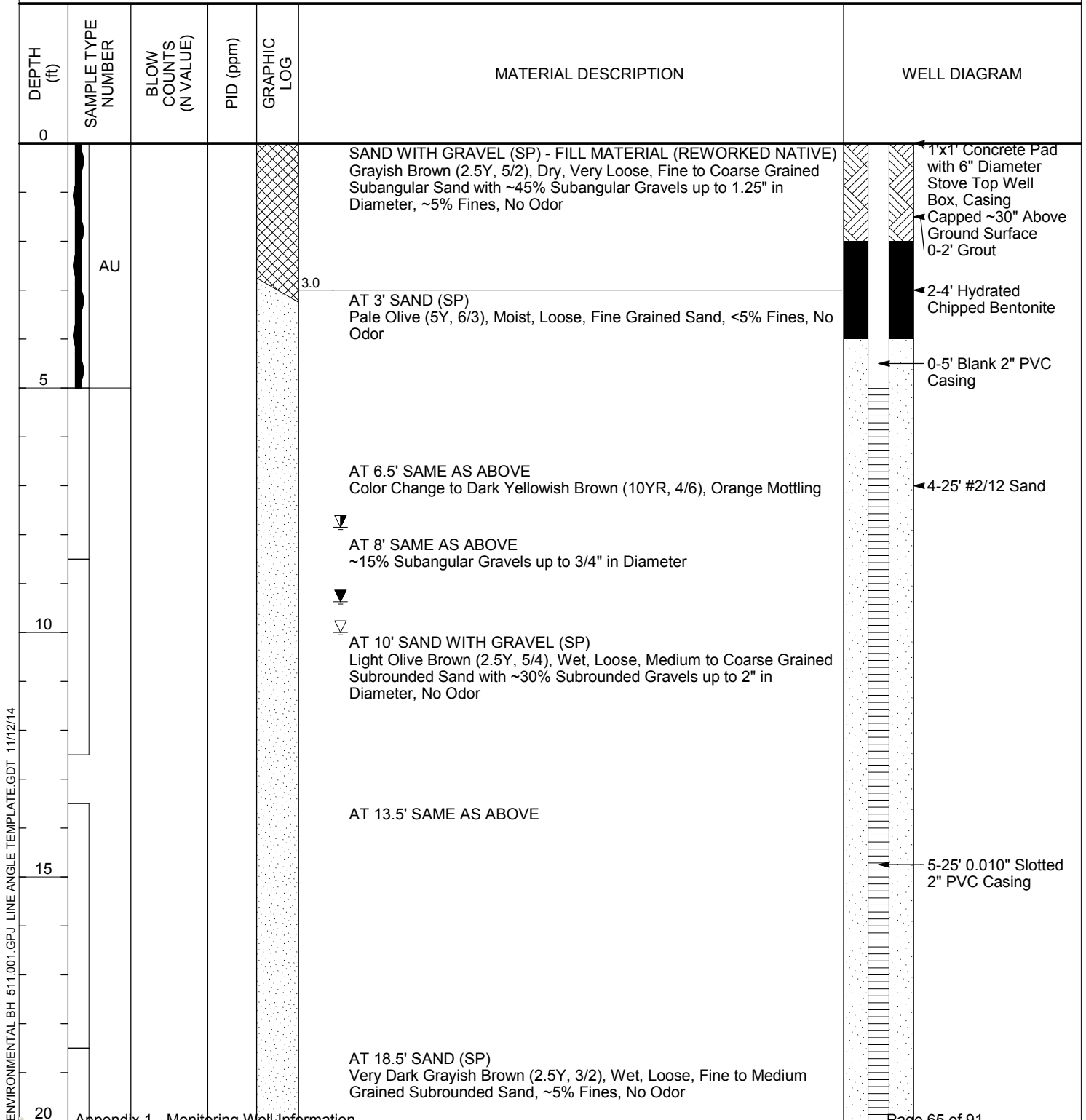


Trinity Source Group  
 119 Encinal Street  
 Santa Cruz, CA 95060  
 Telephone: 831.426.5600  
 Fax: 831.426.5602

# BORING NUMBER MW-1R

PAGE 1 OF 2

<b>CLIENT</b> City of Bishop	<b>PROJECT NAME</b> Monitoring Well Installation/Destruction
<b>PROJECT NUMBER</b> 511.001.005	<b>PROJECT LOCATION</b> 900 Poleta Road Bishop, CA
<b>DATE STARTED</b> 10/1/14	<b>COMPLETED</b> 10/1/14
<b>DRILLING CONTRACTOR</b> S&G Drilling	<b>GROUND ELEVATION</b> _____
<b>DRILLING METHOD</b> Hollow-Stem Auger	<b>HOLE SIZE</b> 8"
<b>LOGGED BY</b> J. Gamble	<b>CHECKED BY</b> D. Moser
<b>NOTES</b> _____	<b>GROUND WATER LEVELS:</b>
	▽ <b>AT TIME OF DRILLING</b> 10.0 ft
	▼ <b>AT END OF DRILLING</b> 9.4 ft
	▼ <b>AFTER DRILLING</b> 7.9 ft



ENVIRONMENTAL BH 511.001.GPJ LINE ANGLE TEMPLATE.GDT 11/12/14





Trinity Source Group  
 119 Encinal Street  
 Santa Cruz, CA 95060  
 Telephone: 831.426.5600  
 Fax: 831.426.5602

# BORING NUMBER MW-1R

PAGE 2 OF 2

**CLIENT** City of Bishop **PROJECT NAME** Monitoring Well Installation/Destruction  
**PROJECT NUMBER** 511.001.005 **PROJECT LOCATION** 900 Poleta Road Bishop, CA

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
20						
					AT 20' SAME AS ABOVE Color Change to Very Dark Gray (GLEY 1, 3/), Increase in Medium Grained Sand, Slight Organic Decay Odor	
					AT 23.5' SAME AS ABOVE ~4" Fine Grained Sand Lens, <5% Fines	
25				25.0	AT 25' SAME AS ABOVE ~6" Fine Grained Sand Lens  Bottom of hole at 25.0 feet.	Well Cap

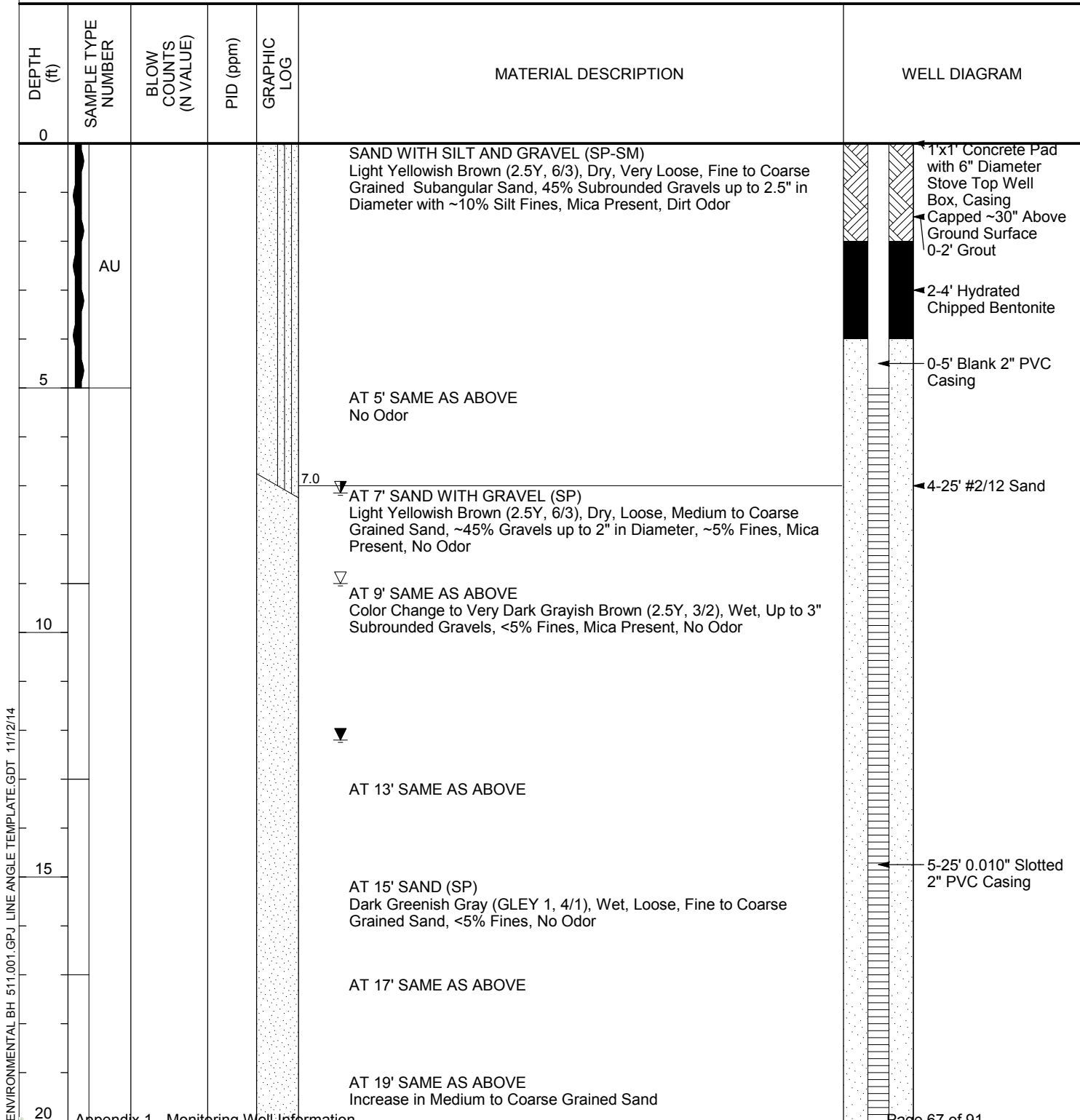


Trinity Source Group  
 119 Encinal Street  
 Santa Cruz, CA 95060  
 Telephone: 831.426.5600  
 Fax: 831.426.5602

# BORING NUMBER MW-3R

PAGE 1 OF 2

<b>CLIENT</b> City of Bishop	<b>PROJECT NAME</b> Monitoring Well Installation/Destruction
<b>PROJECT NUMBER</b> 511.001.005	<b>PROJECT LOCATION</b> 900 Poleta Road Bishop, CA
<b>DATE STARTED</b> 10/2/14	<b>COMPLETED</b> 10/2/14
<b>DRILLING CONTRACTOR</b> S&G Drilling	<b>GROUND ELEVATION</b> _____
<b>DRILLING METHOD</b> Hollow-Stem Auger	<b>HOLE SIZE</b> 8"
<b>LOGGED BY</b> J. Gamble	<b>CHECKED BY</b> D. Moser
<b>NOTES</b>	<b>GROUND WATER LEVELS:</b>
	▽ <b>AT TIME OF DRILLING</b> 9.0 ft
	▽ <b>AT END OF DRILLING</b> 12.2 ft
	▽ <b>AFTER DRILLING</b> 7.2 ft



ENVIRONMENTAL BH 511.001.GPJ LINE ANGLE TEMPLATE.GDT 11/12/14



Trinity Source Group  
 119 Encinal Street  
 Santa Cruz, CA 95060  
 Telephone: 831.426.5600  
 Fax: 831.426.5602

# BORING NUMBER MW-3R

PAGE 2 OF 2

**CLIENT** City of Bishop **PROJECT NAME** Monitoring Well Installation/Destruction  
**PROJECT NUMBER** 511.001.005 **PROJECT LOCATION** 900 Poleta Road Bishop, CA

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
20						
25					AT 21' SAME AS ABOVE  AT 24' SAME AS ABOVE	
				25.0	Bottom of hole at 25.0 feet.	Well Cap

PROJECT: **City of Bishop - Monitoring Well Destruct/ Install**  
 LOCATION: **960 Poleta Road, Bishop, CA**  
 PROJECT NUMBER: **185803912**  
 DRILLING: STARTED **4/18/17** COMPLETED: **4/18/17**  
 INSTALLATION: STARTED **4/18/17** COMPLETED: **4/18/17**  
 DRILLING COMPANY: **ABC Liovin Drilling**  
 DRILLING EQUIPMENT: **CME 85**  
 DRILLING METHOD: **Hollow Stem Auger**  
 SAMPLING EQUIPMENT: **Continous Coring**

WELL / PROBEHOLE / BOREHOLE NO:

**MW-09** PAGE 1 OF 2



NORTHING (ft): EASTING (ft):  
 LATITUDE: LONGITUDE:  
 GROUND ELEV (ft): TOC ELEV (ft):  
 INITIAL DTW (ft): **14** BOREHOLE DEPTH (ft): **35.5**  
 STATIC DTW (ft): **9.9** WELL DEPTH (ft): **35.5**  
 WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **8**  
 LOGGED BY: **R.G.** CHECKED BY: **J. Fischer**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)	Well Construction
5		SP	<b>POORLY GRADED SAND ; SP; 5Y 6/2 light olive gray; some subrounded 1.25" gravel; fine to coarse grained sand; trace fines</b>  5Y 4/2 olive gray; some subrounded 2.25" gravel; moist; dense; no odor below 5 feet.						5	Concrete set pad with well head. Blank PVC backfilled with hydrated bentonite.
10			5Y 4/4 olive; some subrounded 2.5" gravel below 10.5 feet.  5+'' rounded, highly weathered, friable granite cobble present at 11.5 feet.						10	
15		SP-SM	<b>POORLY GRADED SAND WITH SILT ; SP-SM; 2.5Y 7/2 grayish brown; 90% fine to coarse grained sand; 10% non-plastic fines; finely bedded; orange mottling present; very dense; saturated; no odor; no staining</b>						15	
20		SP	<b>POORLY GRADED SAND ; SP; 2.5Y 5/1 gray; 100% fine to coarse grained sand; very dense; saturated; no odor; no staining</b> 5YR 4/1 yellowish red; below 17.75 feet.						20	0.010" slotted PVC
25		SP-SM	<b>POORLY GRADED SAND WITH SILT ; SP-SM; 2.5Y 5/1 gray; 90% fine to coarse grained sand; 10% non-plastic fines; very dense; saturated; no odor; no staining</b>							
30		SP	<b>POORLY GRADED SAND ; SP; 5YR 4/6 yellowish red; 100% fine to coarse grained</b>							

GEO FORM 304 CITY OF BISHOP\_WELL\_BORING\_LOGS.GPJ SECOR INTL.GDT 5/10/17



PROJECT: **City of Bishop - Monitoring Well Destruct/ Install**  
 LOCATION: **960 Poleta Road, Bishop, CA**  
 PROJECT NUMBER: **185803912**

WELL / PROBEHOLE / BOREHOLE NO:

**MW-09** PAGE 2 OF 2



DRILLING: STARTED **4/18/17** COMPLETED: **4/18/17**  
 INSTALLATION: STARTED **4/18/17** COMPLETED: **4/18/17**  
 DRILLING COMPANY: **ABC Liovin Drilling**  
 DRILLING EQUIPMENT: **CME 85**  
 DRILLING METHOD: **Hollow Stem Auger**  
 SAMPLING EQUIPMENT: **Continous Coring**

NORTHING (ft): EASTING (ft):  
 LATITUDE: LONGITUDE:  
 GROUND ELEV (ft): TOC ELEV (ft):  
 INITIAL DTW (ft): **14** BOREHOLE DEPTH (ft): **35.5**  
 STATIC DTW (ft): **9.9** WELL DEPTH (ft): **35.5**  
 WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **8**  
 LOGGED BY: **R.G.** CHECKED BY: **J. Fischer**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)	Well Construction
25		SP-SM	sand; very dense; saturated; no odor; no staining <b>POORLY GRADED SAND WITH SILT</b> ; SP-SM; 5YR 7/1 light gray; 90% fine to coarse grained sand; 10% non-plastic fines; orange mottling present; very dense; saturated; no odor; no staining						25	<p>← Backfilled with filter pack #2/12</p> <p>PVC cap</p>
		SP	<b>SILTY SAND</b> ; SP; GLEY1 6/1 orangeish gray; 70% fine to coarse grained sand; 30% non-plastic fines; very dense; saturated; no odor; no staining							
		SP	<b>POORLY GRADED SAND</b> ; SP; 2.5Y 5/2 grayish brown; 100% fine to coarse grained sand; trace fines; very dense; saturated; no odor; no staining							
		SM	<b>SILTY SAND</b> ; SM; 2.5Y 5/1 gray; 75% fine grained sand; 25% non-plastic fines; very dense; saturated; no odor; no staining							
		ML	<b>SANDY SILT</b> ; ML; 2.5Y 6/1 gray; 40% fine grained sand; 60% non-plastic fines; hard; saturated; no odor; no staining; micaceous							
30		SP-SM	<b>POORLY GRADED SAND WITH SILT</b> ; SP-SM; 2.5Y 5/1 gray; 90% fine to coarse grained sand; 10% non-plastic fines; very dense; saturated; no odor; no staining						30	
		SP	<b>POORLY GRADED SAND</b> ; SP; GLEY1 5/2 greenish gray; 100% fine grained sand; trace fines; very dense; saturated; no odor; no staining							
		ML	<b>SANDY SILT</b> ; ML; GLEY1 5/2 greenish gray; 40% fine to coarse grained sand; 60% non-plastic fines; stiff; saturated; no odor; no staining							
		SP	<b>POORLY GRADED SAND</b> ; SP; GLEY1 6/1 light greenish gray; 100% fine to coarse grained sand; trace fines; very dense; very moist; no odor; no staining							
35			<b>SANDY SILT</b> ; GLEY1 5/2 light greenish gray; 40% fine to coarse grained sand; 60% non-plastic fines; finely bedded; stiff; saturated; no odor; no staining						35	
			Hole terminated at 35.5 feet.							
40									40	

GEO FORM 304 CITY OF BISHOP\_WELL\_BORING\_LOGS.GPJ SECOR INTL.GDT 5/10/17

PROJECT: **City of Bishop - Monitoring Well Destruct/ Install**  
 LOCATION: **960 Poleta Road, Bishop, CA**  
 PROJECT NUMBER: **185803912**

WELL / PROBEHOLE / BOREHOLE NO:



**MW-10** PAGE 1 OF 2

DRILLING: STARTED **4/19/17** COMPLETED: **4/19/17**  
 INSTALLATION: STARTED **4/19/17** COMPLETED: **4/19/17**  
 DRILLING COMPANY: **ABC Liovin Drilling**  
 DRILLING EQUIPMENT: **CME 85**  
 DRILLING METHOD: **Hollow Stem Auger**  
 SAMPLING EQUIPMENT: **Continous Coring**

NORTHING (ft): EASTING (ft):  
 LATITUDE: LONGITUDE:  
 GROUND ELEV (ft): TOC ELEV (ft):  
 INITIAL DTW (ft): **3** BOREHOLE DEPTH (ft): **35.5**  
 STATIC DTW (ft): **5** WELL DEPTH (ft): **35.5**  
 WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **8**  
 LOGGED BY: **R.G.** CHECKED BY: **J. Fischer**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)	Well Construction
0 - 3.5		SP-SM	<p><b>POORLY GRADED SAND WITH SILT ;</b> SP-SM; 2.5Y 6/3 light yellowish brown; some subangular, medium to 3/4" gravel; fine to coarse grained sand; fines; moist; no odor; no staining</p> <p><b>POORLY GRADED SAND ;</b> 2.5Y 4/3 olive brown; some coarse to 1.5" gravel; fine to coarse grained sand; fines; moist; no odor; no staining</p> <p>Saturated below 3.5 feet.</p>						0 - 3.5	<p>Concrete set pad with well head.</p> <p>Backfilled with hydrated bentonite.</p>
3.5 - 4.5		SM	<p><b>SILTY SAND ;</b> SM; GLEY2 2.5/10BG greenish black; 80% fine to coarse grained sand; 20% non-plastic fines; highly organic; dense; saturated; no odor; no staining</p>						4.5	
4.5 - 5.5		SP	<p><b>POORLY GRADED SAND ;</b> SP; GLEY2 2.5/10BG greenish black; 100% fine to coarse grained sand; trace fines; highly organic; dense; saturated; decayed organic odor</p>						5.5	
5.5 - 10.5		ML	<p><b>CLAYEY SILT ;</b> ML; 2.5Y 3/2 very dark grayish brown; 10% fine to coarse grained sand; 90% fines; stiff; saturated; no odor; no staining</p> <p><b>SANDY SILT ;</b> GLEY1 3/N very dark gray; 40% fine grained sand; 60% non-plastic fines; stiff; no odor</p>						10.5	
10.5 - 35.5		SP	<p><b>POORLY GRADED SAND ;</b> SP; GLEY1 2.5/5GY greenish black; some coarse subrounded to 1.5" gravel; fine to coarse grained sand; trace fines; very dense; saturated; no odor</p>						15	0.010" slotted PVC
20									20	

GEO FORM 304 CITY OF BISHOP - WELL BORING LOGS.GPJ SECOR.INTL.GDT 5/10/17





PROJECT: **City of Bishop - Monitoring Well Destruct/ Install**  
 LOCATION: **960 Poleta Road, Bishop, CA**  
 PROJECT NUMBER: **185803912**

DRILLING: STARTED **4/18/17** COMPLETED: **4/18/17**  
 INSTALLATION: STARTED **4/18/17** COMPLETED: **4/18/17**  
 DRILLING COMPANY: **ABC Liovin Drilling**  
 DRILLING EQUIPMENT: **CME 85**  
 DRILLING METHOD: **Hollow Stem Auger**  
 SAMPLING EQUIPMENT: **Continous Coring**

WELL / PROBEHOLE / BOREHOLE NO:

**MW-11** PAGE 1 OF 2



NORTHING (ft): EASTING (ft):  
 LATITUDE: LONGITUDE:  
 GROUND ELEV (ft): TOC ELEV (ft):  
 INITIAL DTW (ft): **8** BOREHOLE DEPTH (ft): **35.0**  
 STATIC DTW (ft): **5.1** WELL DEPTH (ft): **35.0**  
 WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **8**  
 LOGGED BY: **R.G.** CHECKED BY: **J. Fischer**

GEO FORM 304 CITY OF BISHOP WELL BORING LOGS.GPJ SECOR.INTL.GDT 5/10/17

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)	Well Construction
		SP	<b>POORLY GRADED SAND</b> ; SP; 2.5Y 3/2 very dark grayish brown; few 2.5" gravel; fine to coarse grained sand; trace fines; some organic material; dense; moist; subrounded; no odor; no staining							Concrete set pad with well head.
5		SM	<b>SILTY SAND</b> ; SM; 2.5Y 4/2 dark grayish brown; 70% fine grained sand; 30% non-plastic fines; dense; saturated; no odor; no staining							Backfilled with hydrated bentonite.
		SP	<b>POORLY GRADED SAND</b> ; SP; 2.5Y 4/4 gray; some subrounded, 2" gravel; fine to coarse grained sand; trace fines; no odor; no staining 2.5Y 5/4 light olive brown; below 8 feet.							
10		SP-SM	<b>POORLY GRADED SAND WITH SILT</b> ; SP-SM; 2.5Y 5/1 gray; 95% fine to coarse grained sand; 5% non-plastic fines; very dense; saturated; no odor; no staining							0.010" slotted PVC
		SP	<b>POORLY GRADED SAND</b> ; SP; 2.5Y 5/1 gray; some subrounded, 3/4" gravel; fine to coarse grained sand; trace fines; very dense; saturated; no odor; no staining							
		SM	<b>SILTY SAND</b> ; SM; 2.5Y 5/1 gray; 80% fine to coarse grained sand; 20% non-plastic fines; very dense; saturated; no odor; no staining							
		SP	<b>POORLY GRADED SAND</b> ; SP; 2.5Y 5/1 gray; some subrounded, 1" gravel; fine to coarse grained sand; very dense; saturated; no odor; no staining 2.5Y 5/3 light olive brown; below below 14 feet.							
15		SM	<b>SILTY SAND</b> ; SM; 2.5Y 5/4 light olive brown; 80% fine grained sand; 20% non-plastic fines; very dense; saturated; no odor; no staining							
		SP	<b>POORLY GRADED SAND</b> ; SP; 2.5Y 5/2 grayish brown; 100% fine to coarse grained sand; very dense; saturated; no odor; no staining							
		SM	<b>SILTY SAND</b> ; SM; 2.5Y 5/4 light olive brown; 80% fine grained sand; 20% non-plastic fines; very dense; saturated; no odor; no staining							
20		SP	<b>POORLY GRADED SAND</b> ; SP; 2.5Y 4/2 olive gray; 100% fine to coarse grained sand; trace fines; very dense; saturated; no odor; no staining							





PROJECT: **City of Bishop - Monitoring Well Destruct/ Install**  
 LOCATION: **960 Poleta Road, Bishop, CA**  
 PROJECT NUMBER: **185803912**

WELL / PROBEHOLE / BOREHOLE NO:

**MW-12** PAGE 1 OF 2



DRILLING: STARTED **4/19/17** COMPLETED: **4/19/17**  
 INSTALLATION: STARTED **4/19/17** COMPLETED: **4/19/17**  
 DRILLING COMPANY: **ABC Liovin Drilling**  
 DRILLING EQUIPMENT: **CME 85**  
 DRILLING METHOD: **Hollow Stem Auger**  
 SAMPLING EQUIPMENT: **Continuous Coring**

NORTHING (ft): EASTING (ft):  
 LATITUDE: LONGITUDE:  
 GROUND ELEV (ft): TOC ELEV (ft):  
 INITIAL DTW (ft): **10.5** BOREHOLE DEPTH (ft): **40.5**  
 STATIC DTW (ft): **5.5** WELL DEPTH (ft): **40.5**  
 WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **8**  
 LOGGED BY: **R.G.** CHECKED BY: **J. Fischer**

GEO FORM 304 CITY\_OF\_BISHOP\_WELL\_BORING\_LOGS.GPJ SECOR INTL.GDT 5/10/17

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)	Well Construction
0 - 20		SP	<p><b>POORLY GRADED SAND</b> ; SP; 2.5Y 5/2 grayish brown; some rounded to subrounded 2" gravel; fine to coarse grained sand; trace fines; very moist; no odor; no staining</p> <p>2.5Y 4/3 olive brown; below 6 feet.</p> <p>GLE Y2 3/10BG very dark greenish gray; some subrounded 1.5" gravel; very dense below 9 feet.</p> <p>2.5Y 4/3 olive brown; some 2.25" gravel; saturated below 11 feet.</p> <p>2.5Y 5/2 grayish brown; some 1.25" gravel below 12 feet.</p> <p>2.5Y 4/2 dark grayish brown; some 2" gravel below 14 feet.</p> <p>2.5Y 4/3 olive brown; some 1" gravel; medium to coarse grained sand; no fines below 15 feet.</p> <p>2.5Y 5/1 gray; no gravel; fine to coarse grained sand; trace fines below 18 feet.</p>							<p>Concrete set pad with well head.</p> <p>Blank PVC backfilled with hydrated bentonite.</p> <p>0.010" slotted PVC</p>
20 - 21		SP-SM	<p><b>POORLY GRADED SAND WITH SILT</b> ; SP-SM; GLE Y2 4/10BG dark greenish gray; some 1/2" gravel; fine to coarse grained sand; little fines; very dense; saturated; no odor; no staining</p>							
21 - 40.5		SP	<p><b>POORLY GRADED SAND</b> ; SP; GLE Y2 4/5BG dark greenish gray; 100% fine to coarse grained sand; trace fines; very dense; saturated; no odor; no staining</p>							






<b>PROJECT: City of Bishop - Monitoring Well Destruct/ Install</b> <b>LOCATION: 960 Poleta Road, Bishop, CA</b> <b>PROJECT NUMBER: 185803912</b> DRILLING:        STARTED <b>4/21/17</b> COMPLETED: <b>4/18/17</b> INSTALLATION: STARTED <b>4/21/17</b> COMPLETED: <b>4/18/17</b> DRILLING COMPANY: <b>ABC Liovin Drilling</b> DRILLING EQUIPMENT: <b>CME 85</b> DRILLING METHOD: <b>Hollow Stem Auger</b> SAMPLING EQUIPMENT: <b>Continous Coring</b>	WELL / PROBEHOLE / BOREHOLE NO: <div style="text-align: center; font-size: 1.2em;"><b>MW-13</b></div> PAGE 1 OF 2 NORTHING (ft): LATITUDE: GROUND ELEV (ft): INITIAL DTW (ft): <b>3.5</b> STATIC DTW (ft): <b>5.5</b> WELL CASING DIAMETER (in): <b>2</b> LOGGED BY: <b>R.G.</b>
EASTING (ft): LONGITUDE: TOC ELEV (ft): BOREHOLE DEPTH (ft): <b>36.0</b> WELL DEPTH (ft): <b>36.0</b> BOREHOLE DIAMETER (in): <b>8</b> CHECKED BY: <b>J. Fischer</b>	

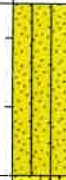
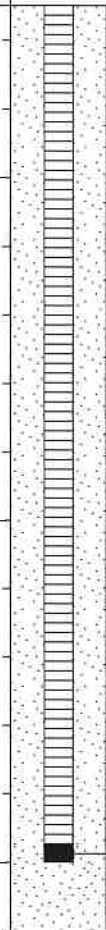



Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)	Well Construction
5		SP	<b>POORLY GRADED SAND ; SP; 2.5Y 3/2</b> very dark grayish brown; 100% fine to coarse grained sand; trace fines; highly organic; roots in upper 12"; medium dense; moist; no odor; no staining  2.5YR 3/2 dusky red; some 1/4" gravel; no fines; very dense; saturated; no odor below 5.5 feet.  2.5Y 4/1 dark gray; no gravel below 7.5 feet.  GLEY1 4/10Y dark greenish gray; some rounded to subrounded 2.25" gravel below 9 feet.						5	Concrete set pad with well head.  Blank PVC backfilled with hydrated bentonite.
15		SM	<b>SILTY SAND ; SM; GLEY1 4/10Y</b> dark greenish gray; some 1.5" gravel; fine to coarse grained sand; some non-plastic fines; very dense; saturated; no odor; no staining						15	0.010" slotted PVC
20		SP	<b>POORLY GRADED SAND ; SP; 2.5Y 5/2</b> grayish brown; some 3/4" gravel; medium to coarse grained sand; very dense; saturated; no odor; no staining  10YR 4/4 dark yellowish brown; below 17 feet.						20	
20		SC	<b>CLAYEY SAND ; SC; GLEY1 5/10Y</b> greenish gray; 75% fine to coarse grained sand; 25% plastic fines; very dense; saturated; no odor; no staining						20	
20		SP	<b>POORLY GRADED SAND ; SP; GLEY1 5/10Y</b> greenish gray; 100% fine to coarse grained sand; very dense; saturated; no odor; no staining						20	

GEO FORM 304 CITY OF BISHOP WELL BORING LOGS.GPJ SECOR INTL.GDT 5/10/17



PROJECT: **City of Bishop - Monitoring Well Destruct/ Install**  
 LOCATION: **960 Poleta Road, Bishop, CA**  
 PROJECT NUMBER: **185803912**  
 DRILLING: STARTED **4/21/17** COMPLETED: **4/18/17**  
 INSTALLATION: STARTED **4/21/17** COMPLETED: **4/18/17**  
 DRILLING COMPANY: **ABC Liovin Drilling**  
 DRILLING EQUIPMENT: **CME 85**  
 DRILLING METHOD: **Hollow Stem Auger**  
 SAMPLING EQUIPMENT: **Continous Coring**

WELL / PROBEHOLE / BOREHOLE NO: **MW-13** PAGE 2 OF 2  
  
 NORTHING (ft): EASTING (ft):  
 LATITUDE: LONGITUDE:  
 GROUND ELEV (ft): TOC ELEV (ft):  
 INITIAL DTW (ft): **3.5** BOREHOLE DEPTH (ft): **36.0**  
 STATIC DTW (ft): **5.5** WELL DEPTH (ft): **36.0**  
 WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **8**  
 LOGGED BY: **R.G.** CHECKED BY: **J. Fischer**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)	Well Construction
		SM	<b>SILTY SAND ; SM; GLEY1 N gray; some 1/4" gravel; fine to coarse grained sand; some non-plastic fines; very dense; saturated; no odor; no staining</b>						25	
		SP-SM	<b>POORLY GRADED SAND WITH SILT ; SP-SM; GLEY1 4/5GY dark greenish gray; 90% fine to coarse grained sand; 10% non-plastic fines</b>							← Backfilled with filter pack #2/12
		SM	<b>SILTY SAND ; SM; GLEY1 4/5GY dark greenish gray; 60% fine grained sand; 40% non-plastic fines; very dense; saturated; micaceous</b>							
		SP	<b>POORLY GRADED SAND ; SP; 2.5Y 5/3 light olive brown; 100% fine to coarse grained sand; trace fines; very dense; saturated; no odor; no staining</b>  2.5Y 4/3 olive brown; below 29.5 feet.  2.5Y 4/2 dark grayish brown; slightly micaceous below 31 feet.  GLEY1 4/10Y dark greenish gray; below 32.5 feet.						30	
									35	→ PVC cap
			Hole terminated at 36 feet.						40	

GEO FORM 304 CITY OF BISHOP WELL BORING LOGS.GPJ SECOR INTL.GDT 5/10/17



## **Appendix H: Priority Pollutants Sampling**



07 January 2022

Steve Nixon  
Eastern Sierra CSD  
301 W. Line St Ste D  
Bishop, CA 93514

RE:EPA Priority Pollutants

Work Order No.: 2112238

Attached are the results of the analyses for samples received by the laboratory on 12/16/21 10:30.

The samples were received by Sierra Analytical Labs, Inc. with a chain of custody record attached or completed at the submittal of the samples.

The analyses were performed according to the prescribed method as outlined by EPA, Standard Methods, and A.S.T.M.

The remaining portions of the samples will be disposed of within 30 days from the date of this report.  
If you require any additional retaining time, please advise us.

Sincerely,

Richard K. Forsyth

Laboratory Director

Sierra Analytical Labs, Inc. is certified by the California Department of Health Services (DOHS),  
Environmental Laboratory Accreditation Program (ELAP) No. 2320.



Eastern Sierra CSD  
301 W. Line St Ste D  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Steve Nixon

**Reported:**  
01/07/22 10:01

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EFF121521 EFF	2112238-01	Liquid	12/15/21 10:00	12/16/21 10:30

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*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*





Eastern Sierra CSD  
 301 W. Line St Ste D  
 Bishop CA, 93514

Project: EPA Priority Pollutants  
 Project Number: [none]  
 Project Manager: Steve Nixon

Reported:  
 01/07/22 10:01

**Metals by EPA 200 Series Methods**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>EFF121521 EFF (2112238-01) Liquid    Sampled: 12/15/21 10:00    Received: 12/16/21 10:30</b>									
Silver	ND	0.010	mg/L	1	B1L1627	12/16/21	12/17/21 14:33	EPA 200.7	
Arsenic	ND	0.034	"	"	"	"	"	"	
Beryllium	ND	0.011	"	"	"	"	"	"	
Cadmium	ND	0.010	"	"	"	"	"	"	
Chromium	ND	0.015	"	"	"	"	"	"	
Copper	ND	0.080	"	"	"	"	"	"	
Mercury	ND	0.00124	"	"	B1L1720	12/17/21	12/17/21 18:31	EPA 245.1	
Nickel	ND	0.019	"	"	B1L1627	12/16/21	12/17/21 14:33	EPA 200.7	
Lead	ND	0.010	"	"	"	"	"	"	
Antimony	ND	0.034	"	"	"	"	"	"	
Selenium	ND	0.069	"	"	"	"	"	"	
Thallium	ND	0.14	"	"	"	"	"	"	
<b>Zinc</b>	<b>0.054</b>	0.030	"	"	"	"	"	"	

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Eastern Sierra CSD  
301 W. Line St Ste D  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Steve Nixon

Reported:  
01/07/22 10:01

**Organochlorine Pesticides and PCBs by EPA Method 608.3**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**EFF121521 EFF (2112238-01) Liquid Sampled: 12/15/21 10:00 Received: 12/16/21 10:30**

<i>Surrogate: Decachlorobiphenyl</i>		101 %		42-147	B1L2006	12/20/21	12/21/21 09:05	EPA 608.3	
<i>Surrogate: Tetrachloro-meta-xylene</i>		54.6 %		42-147	"	"	"	"	
Aldrin	ND	0.075	"	"	"	"	"	"	
HCH-alpha	ND	0.010	"	"	"	"	"	"	
HCH-beta	ND	0.050	"	"	"	"	"	"	
HCH-delta	ND	0.10	"	"	"	"	"	"	
HCH-gamma (Lindane)	ND	0.20	"	"	"	"	"	"	
Chlordane	ND	0.050	"	"	"	"	"	"	
4,4'-DDD	ND	0.010	"	"	"	"	"	"	
4,4'-DDE	ND	0.010	"	"	"	"	"	"	
4,4'-DDT	ND	0.010	"	"	"	"	"	"	
Dieldrin	ND	0.020	"	"	"	"	"	"	
Endosulfan I	ND	0.020	"	"	"	"	"	"	
Endosulfan II	ND	0.050	"	"	"	"	"	"	
Endosulfan sulfate	ND	0.050	"	"	"	"	"	"	
Endrin	ND	0.10	"	"	"	"	"	"	
Endrin aldehyde	ND	0.050	"	"	"	"	"	"	
Heptachlor	ND	0.010	"	"	"	"	"	"	
Heptachlor epoxide	ND	0.010	"	"	"	"	"	"	
Toxaphene	ND	1.0	"	"	"	"	"	"	
PCB-1016	ND	0.50	"	"	"	"	"	"	
PCB-1221	ND	0.50	"	"	"	"	"	"	
PCB-1232	ND	0.50	"	"	"	"	"	"	
PCB-1242	ND	0.50	"	"	"	"	"	"	
PCB-1248	ND	0.50	"	"	"	"	"	"	
PCB-1254	ND	0.50	"	"	"	"	"	"	
PCB-1260	ND	0.50	"	"	"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Eastern Sierra CSD  
301 W. Line St Ste D  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Steve Nixon

Reported:  
01/07/22 10:01

**Volatile Organics by EPA Method 624.1**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>EFF121521 EFF (2112238-01) Liquid - Sampled: 12/15/21 10:00 Received: 12/16/21 10:30</b>									
<i>Surrogate: Dibromofluoromethane</i>		114 %		86-118	B1L1605	12/16/21	12/17/21 07:39	EPA 624.1	
<i>Surrogate: Toluene-d8</i>		104 %		88-110	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		105 %		86-115	"	"	"	"	
Acrolein	ND	5.0	"	"	"	"	"	"	
Acrylonitrile	ND	2.0	"	"	"	"	"	"	
Benzene	ND	1.0	"	"	"	"	"	"	
Bromobenzene	ND	1.0	"	"	"	"	"	"	
Bromodichloromethane	ND	1.0	"	"	"	"	"	"	
Bromoform	ND	1.0	"	"	"	"	"	"	
Bromomethane	ND	1.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.0	"	"	"	"	"	"	
Chlorobenzene	ND	1.0	"	"	"	"	"	"	
Chloroethane	ND	1.0	"	"	"	"	"	"	
2-Chloroethylvinyl ether	ND	1.0	"	"	"	"	"	"	
Chloroform	ND	1.0	"	"	"	"	"	"	
Chloromethane	ND	1.0	"	"	"	"	"	"	
Dibromochloromethane	ND	1.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Methylene chloride	ND	1.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.0	"	"	"	"	"	"	
Tetrachloroethene	ND	1.0	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.0	"	"	"	"	"	"	
Vinyl chloride	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	1.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	

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Eastern Sierra CSD  
301 W. Line St Ste D  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Steve Nixon

**Reported:**  
01/07/22 10:01

**Volatile Organics by EPA Method 624.1**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>EFF121521 EFF (2112238-01) Liquid    Sampled: 12/15/21 10:00    Received: 12/16/21 10:30</b>									
Methyl tert-butyl ether	ND	1.0	µg/L	1	B1L1605	12/16/21	12/17/21 07:39	EPA 624.1	

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Eastern Sierra CSD  
301 W. Line St Ste D  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Steve Nixon

Reported:  
01/07/22 10:01

**Semivolatile Organics by EPA Method 625.1**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>EFF121521 EFF (2112238-01) Liquid Sampled: 12/15/21 10:00 Received: 12/16/21 10:30</b>									
<i>Surrogate: 2-Fluorophenol</i>		102 %		25-121	B1L2901	12/21/21	12/29/21 11:08	EPA 625.1	
<i>Surrogate: Phenol-d6</i>		102 %		24-113	"	"	"	"	
<i>Surrogate: Nitrobenzene-d5</i>		71.4 %		23-120	"	"	"	"	
<i>Surrogate: 2-Fluorobiphenyl</i>		66.7 %		30-115	"	"	"	"	
<i>Surrogate: 2,4,6-Tribromophenol</i>		95.7 %		19-122	"	"	"	"	
<i>Surrogate: Terphenyl-d14</i>		77.4 %		18-137	"	"	"	"	
Acenaphthene	ND	5.0	"	"	"	"	"	"	
Acenaphthylene	ND	5.0	"	"	"	"	"	"	
Anthracene	ND	5.0	"	"	"	"	"	"	
Benzidine	ND	5.0	"	"	"	"	"	"	
Benzo (a) anthracene	ND	5.0	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	5.0	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	5.0	"	"	"	"	"	"	
Benzo (a) pyrene	ND	5.0	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	5.0	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	5.0	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	5.0	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	5.0	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	5.0	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	5.0	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	5.0	"	"	"	"	"	"	
2-Chlorophenol	ND	1.0	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	5.0	"	"	"	"	"	"	
2-Chloronaphthalene	ND	5.0	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	5.0	"	"	"	"	"	"	
Chrysene	ND	5.0	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
3,3'-Dichlorobenzidine	ND	5.0	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	1.0	"	"	"	"	"	"	
Diethyl phthalate	ND	5.0	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	1.0	"	"	"	"	"	"	
Dimethyl phthalate	ND	5.0	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	5.0	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	1.0	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	5.0	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	5.0	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	5.0	"	"	"	"	"	"	
1,2-Diphenylhydrazine	ND	5.0	"	"	"	"	"	"	

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Eastern Sierra CSD  
301 W. Line St Ste D  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Steve Nixon

Reported:  
01/07/22 10:01

**Semivolatile Organics by EPA Method 625.1**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>EFF121521 EFF (2112238-01) Liquid Sampled: 12/15/21 10:00 Received: 12/16/21 10:30</b>									
Fluoranthene	ND	5.0	µg/L	1	B1L2901	12/21/21	12/29/21 11:08	EPA 625.1	
Fluorene	ND	5.0	"	"	"	"	"	"	
Hexachlorobenzene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	5.0	"	"	"	"	"	"	
Hexachloroethane	ND	5.0	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	5.0	"	"	"	"	"	"	
Isophorone	ND	5.0	"	"	"	"	"	"	
2-Methyl-4,6-dinitrophenol	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
Nitrobenzene	ND	5.0	"	"	"	"	"	"	
2-Nitrophenol	ND	1.0	"	"	"	"	"	"	
4-Nitrophenol	ND	1.0	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	5.0	"	"	"	"	"	"	
Diphenylamine	ND	5.0	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	5.0	"	"	"	"	"	"	
Pentachlorophenol	ND	1.0	"	"	"	"	"	"	
Phenanthrene	ND	5.0	"	"	"	"	"	"	
Phenol	ND	1.0	"	"	"	"	"	"	
Pyrene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	1.0	"	"	"	"	"	"	

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Eastern Sierra CSD  
301 W. Line St Ste D  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Steve Nixon

Reported:  
01/07/22 10:01

**Metals by EPA 200 Series Methods - Quality Control**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1L1627 - EPA 200 Series**

**Blank (B1L1627-BLK1)**

Prepared: 12/16/21 Analyzed: 12/17/21

Selenium	ND	0.069	mg/L							
Chromium	ND	0.015	"							
Nickel	ND	0.019	"							
Cadmium	ND	0.010	"							
Lead	ND	0.010	"							
Copper	ND	0.080	"							
Beryllium	ND	0.011	"							
Antimony	ND	0.034	"							
Thallium	ND	0.14	"							
Arsenic	ND	0.034	"							
Zinc	ND	0.030	"							
Silver	ND	0.010	"							

**LCS (B1L1627-BS1)**

Prepared: 12/16/21 Analyzed: 12/17/21

Selenium	0.215	0.069	mg/L	0.200	108	85-119
Lead	0.218	0.010	"	0.200	109	85-115
Thallium	0.229	0.14	"	0.200	114	85-115
Nickel	0.220	0.019	"	0.200	110	85-115
Zinc	0.221	0.030	"	0.200	110	85-115
Copper	0.228	0.080	"	0.200	114	85-115
Antimony	0.224	0.034	"	0.200	112	85-115
Arsenic	0.211	0.034	"	0.200	105	80-120
Chromium	0.213	0.015	"	0.200	106	85-115
Silver	0.214	0.010	"	0.200	107	85-115
Cadmium	0.211	0.010	"	0.200	105	85-115
Beryllium	0.212	0.011	"	0.200	106	85-115

**Matrix Spike (B1L1627-MS1)**

Source: 2112226-01

Prepared: 12/16/21 Analyzed: 12/17/21

Zinc	0.233	0.030	mg/L	0.200	0.0268	103	70-130
Silver	0.192	0.010	"	0.200	ND	96.0	70-130
Thallium	0.191	0.14	"	0.200	ND	95.4	70-130
Chromium	0.195	0.015	"	0.200	ND	97.4	75-130
Selenium	0.170	0.069	"	0.200	ND	85.0	70-130
Arsenic	0.201	0.034	"	0.200	ND	100	70-130
Antimony	0.202	0.034	"	0.200	ND	101	70-130
Beryllium	0.195	0.011	"	0.200	ND	97.6	70-130
Lead	0.190	0.010	"	0.200	0.00200	94.2	70-130
Copper	0.212	0.080	"	0.200	ND	106	70-130

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Eastern Sierra CSD  
301 W. Line St Ste D  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Steve Nixon

Reported:  
01/07/22 10:01

**Metals by EPA 200 Series Methods - Quality Control**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1L1627 - EPA 200 Series**

**Matrix Spike (B1L1627-MS1)**

Source: 2112226-01

Prepared: 12/16/21 Analyzed: 12/17/21

Nickel	0.205	0.019	mg/L	0.200	0.00600	99.3	70-130			
Cadmium	0.192	0.010	"	0.200	ND	96.1	70-130			

**Matrix Spike Dup (B1L1627-MSD1)**

Source: 2112226-01

Prepared: 12/16/21 Analyzed: 12/17/21

Chromium	0.216	0.015	mg/L	0.200	ND	108	75-130	10.3	20	
Silver	0.213	0.010	"	0.200	ND	106	70-130	10.3	20	
Zinc	0.265	0.030	"	0.200	0.0268	119	70-130	13.0	20	
Cadmium	0.214	0.010	"	0.200	ND	107	70-130	10.9	20	
Thallium	0.201	0.14	"	0.200	ND	101	70-130	5.41	20	
Lead	0.215	0.010	"	0.200	0.00200	107	70-130	12.3	20	
Selenium	0.183	0.069	"	0.200	ND	91.6	70-130	7.47	20	
Nickel	0.232	0.019	"	0.200	0.00600	113	70-130	12.7	20	
Arsenic	0.222	0.034	"	0.200	ND	111	70-130	10.2	20	
Antimony	0.227	0.034	"	0.200	ND	113	70-130	11.2	20	
Beryllium	0.218	0.011	"	0.200	ND	109	70-130	11.0	20	
Copper	0.230	0.080	"	0.200	ND	115	70-130	8.23	20	

**Batch B1L1720 - EPA 200 Series**

**Blank (B1L1720-BLK1)**

Prepared & Analyzed: 12/17/21

Mercury	ND	0.00124	mg/L							
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**LCS (B1L1720-BS1)**

Prepared & Analyzed: 12/17/21

Mercury	0.00106	0.00124	mg/L	0.00100		106	75-125			
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**Matrix Spike (B1L1720-MS1)**

Source: 2112238-01

Prepared & Analyzed: 12/17/21

Mercury	0.00111	0.00124	mg/L	0.00100	ND	111	75-125			
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Eastern Sierra CSD  
 301 W. Line St Ste D  
 Bishop CA, 93514

Project: EPA Priority Pollutants  
 Project Number: [none]  
 Project Manager: Steve Nixon

**Reported:**  
 01/07/22 10:01

**Metals by EPA 200 Series Methods - Quality Control**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1L1720 - EPA 200 Series**

**Matrix Spike Dup (B1L1720-MSD1)**

**Source: 2112238-01**

Prepared & Analyzed: 12/17/21

Mercury	0.00111	0.00124	mg/L	0.00100	ND	111	75-125	0.450	20	
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Eastern Sierra CSD  
301 W. Line St Ste D  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Steve Nixon

Reported:  
01/07/22 10:01

**Organochlorine Pesticides and PCBs by EPA Method 608.3 - Quality Control**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1L2006 - EPA 3510C Sep Funnel**

**Blank (B1L2006-BLK1)**

Prepared: 12/20/21 Analyzed: 12/21/21

Aldrin	ND	0.075	µg/L							
HCH-alpha	ND	0.010	"							
HCH-beta	ND	0.050	"							
HCH-delta	ND	0.10	"							
HCH-gamma (Lindane)	ND	0.20	"							
Chlordane	ND	0.050	"							
4,4'-DDD	ND	0.010	"							
4,4'-DDE	ND	0.010	"							
4,4'-DDT	ND	0.010	"							
Dieldrin	ND	0.020	"							
Endosulfan I	ND	0.020	"							
Endosulfan II	ND	0.050	"							
Endosulfan sulfate	ND	0.050	"							
Endrin	ND	0.10	"							
Endrin aldehyde	ND	0.050	"							
Heptachlor	ND	0.010	"							
Heptachlor epoxide	ND	0.010	"							
Toxaphene	ND	1.0	"							
PCB-1016	ND	0.50	"							
PCB-1221	ND	0.50	"							
PCB-1232	ND	0.50	"							
PCB-1242	ND	0.50	"							
PCB-1248	ND	0.50	"							
PCB-1254	ND	0.50	"							
PCB-1260	ND	0.50	"							

**LCS (B1L2006-BS1)**

Prepared: 12/20/21 Analyzed: 12/21/21

Aldrin	0.563	0.075	µg/L	0.500	113	80-120
HCH-gamma (Lindane)	0.586	0.20	"	0.500	117	80-120
4,4'-DDT	0.549	0.010	"	0.500	110	80-120
Dieldrin	0.535	0.020	"	0.500	107	80-120
Heptachlor	0.597	0.010	"	0.500	119	80-120

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Eastern Sierra CSD  
301 W. Line St Ste D  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Steve Nixon

Reported:  
01/07/22 10:01

**Organochlorine Pesticides and PCBs by EPA Method 608.3 - Quality Control**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1L2006 - EPA 3510C Sep Funnel**

**LCS (B1L2006-BS2)**

Prepared: 12/20/21 Analyzed: 12/21/21

Aldrin	0.569	0.075	µg/L	0.500		114	80-120			
HCH-gamma (Lindane)	0.509	0.20	"	0.500		102	80-120			
4,4'-DDT	0.596	0.010	"	0.500		119	80-120			
Dieldrin	0.559	0.020	"	0.500		112	80-120			
Heptachlor	0.570	0.010	"	0.500		114	80-120			

**LCS Dup (B1L2006-BS1)**

Prepared: 12/20/21 Analyzed: 12/21/21

Aldrin	0.581	0.075	µg/L	0.500		116	80-120	3.16	30	
HCH-gamma (Lindane)	0.525	0.20	"	0.500		105	80-120	11.0	30	
4,4'-DDT	0.537	0.010	"	0.500		107	80-120	2.37	30	
Dieldrin	0.571	0.020	"	0.500		114	80-120	6.52	30	
Heptachlor	0.599	0.010	"	0.500		120	80-120	0.361	30	

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Eastern Sierra CSD  
301 W. Line St Ste D  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Steve Nixon

Reported:  
01/07/22 10:01

**Volatile Organics by EPA Method 624.1 - Quality Control**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1L1605 - EPA 5030B P & T**

**Blank (B1L1605-BLK1)**

Prepared: 12/16/21 Analyzed: 12/17/21

Acrolein	ND	5.0	µg/L							
Acrylonitrile	ND	2.0	"							
Benzene	ND	1.0	"							
Bromobenzene	ND	1.0	"							
Bromodichloromethane	ND	1.0	"							
Bromoform	ND	1.0	"							
Bromomethane	ND	1.0	"							
Carbon tetrachloride	ND	1.0	"							
Chlorobenzene	ND	1.0	"							
Chloroethane	ND	1.0	"							
2-Chloroethylvinyl ether	ND	1.0	"							
Chloroform	ND	1.0	"							
Chloromethane	ND	1.0	"							
Dibromochloromethane	ND	1.0	"							
1,2-Dichlorobenzene	ND	1.0	"							
1,3-Dichlorobenzene	ND	1.0	"							
1,4-Dichlorobenzene	ND	1.0	"							
1,1-Dichloroethane	ND	1.0	"							
1,2-Dichloroethane	ND	1.0	"							
1,1-Dichloroethene	ND	1.0	"							
cis-1,2-Dichloroethene	ND	1.0	"							
trans-1,2-Dichloroethene	ND	1.0	"							
1,2-Dichloropropane	ND	1.0	"							
1,1-Dichloropropene	ND	1.0	"							
cis-1,3-Dichloropropene	ND	1.0	"							
trans-1,3-Dichloropropene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Methylene chloride	ND	1.0	"							
1,1,2,2-Tetrachloroethane	ND	1.0	"							
Tetrachloroethene	ND	1.0	"							
Toluene	ND	1.0	"							
1,1,1-Trichloroethane	ND	1.0	"							
1,1,2-Trichloroethane	ND	1.0	"							
Trichloroethene	ND	1.0	"							
Trichlorofluoromethane	ND	1.0	"							
Vinyl chloride	ND	1.0	"							
m,p-Xylene	ND	1.0	"							

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





Eastern Sierra CSD  
301 W. Line St Ste D  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Steve Nixon

Reported:  
01/07/22 10:01

**Volatile Organics by EPA Method 624.1 - Quality Control**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1L1605 - EPA 5030B P & T**

**Blank (B1L1605-BLK1)**

Prepared: 12/16/21 Analyzed: 12/17/21

o-Xylene	ND	1.0	µg/L							
Methyl tert-butyl ether	ND	1.0	"							

**LCS (B1L1605-BS1)**

Prepared: 12/16/21 Analyzed: 12/17/21

Benzene	48.2	1.0	µg/L	50.0		96.5	80-120			
Chlorobenzene	47.3	1.0	"	50.0		94.6	80-120			
1,1-Dichloroethene	41.1	1.0	"	50.0		82.2	80-120			
Toluene	47.8	1.0	"	50.0		95.6	80-120			
Trichloroethene	42.6	1.0	"	50.0		85.1	80-120			

**Matrix Spike (B1L1605-MS1)**

Source: 2112223-01

Prepared: 12/16/21 Analyzed: 12/17/21

Benzene	46.3	1.0	µg/L	50.0	ND	92.7	37-151			
Chlorobenzene	44.8	1.0	"	50.0	ND	89.6	37-160			
1,1-Dichloroethene	37.1	1.0	"	50.0	ND	74.1	50-150			
Toluene	44.2	1.0	"	50.0	ND	88.4	47-150			
Trichloroethene	39.6	1.0	"	50.0	ND	79.1	71-157			

**Matrix Spike Dup (B1L1605-MSD1)**

Source: 2112223-01

Prepared: 12/16/21 Analyzed: 12/17/21

Benzene	52.6	1.0	µg/L	50.0	ND	105	37-151	12.8	30	
Chlorobenzene	50.5	1.0	"	50.0	ND	101	37-160	11.9	30	
1,1-Dichloroethene	44.9	1.0	"	50.0	ND	89.8	50-150	19.1	30	
Toluene	52.8	1.0	"	50.0	ND	106	47-150	17.8	30	
Trichloroethene	45.2	1.0	"	50.0	ND	90.5	71-157	13.4	30	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Eastern Sierra CSD  
301 W. Line St Ste D  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Steve Nixon

Reported:  
01/07/22 10:01

**Semivolatile Organics by EPA Method 625.1 - Quality Control**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1L2901 - EPA 3510C Sep Funnel**

**Blank (B1L2901-BLK1)**

Prepared: 12/27/21 Analyzed: 12/29/21

Acenaphthene	ND	5.0	µg/L							
Acenaphthylene	ND	5.0	"							
Anthracene	ND	5.0	"							
Benzidine	ND	5.0	"							
Benzo (a) anthracene	ND	5.0	"							
Benzo (b) fluoranthene	ND	5.0	"							
Benzo (k) fluoranthene	ND	5.0	"							
Benzo (a) pyrene	ND	5.0	"							
Benzo (g,h,i) perylene	ND	5.0	"							
Butyl benzyl phthalate	ND	5.0	"							
Bis(2-chloroethyl)ether	ND	5.0	"							
Bis(2-chloroethoxy)methane	ND	5.0	"							
Bis(2-ethylhexyl)phthalate	ND	5.0	"							
Bis(2-chloroisopropyl)ether	ND	5.0	"							
4-Bromophenyl phenyl ether	ND	5.0	"							
2-Chlorophenol	ND	1.0	"							
4-Chloro-3-methylphenol	ND	5.0	"							
2-Chloronaphthalene	ND	5.0	"							
4-Chlorophenyl phenyl ether	ND	5.0	"							
Chrysene	ND	5.0	"							
Dibenz (a,h) anthracene	ND	5.0	"							
1,3-Dichlorobenzene	ND	5.0	"							
1,2-Dichlorobenzene	ND	5.0	"							
1,4-Dichlorobenzene	ND	5.0	"							
3,3'-Dichlorobenzidine	ND	5.0	"							
2,4-Dichlorophenol	ND	1.0	"							
Diethyl phthalate	ND	5.0	"							
2,4-Dimethylphenol	ND	1.0	"							
Dimethyl phthalate	ND	5.0	"							
Di-n-butyl phthalate	ND	5.0	"							
2,4-Dinitrophenol	ND	1.0	"							
2,4-Dinitrotoluene	ND	5.0	"							
2,6-Dinitrotoluene	ND	5.0	"							
Di-n-octyl phthalate	ND	5.0	"							
1,2-Diphenylhydrazine	ND	5.0	"							
Fluoranthene	ND	5.0	"							
Fluorene	ND	5.0	"							

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Eastern Sierra CSD  
301 W. Line St Ste D  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Steve Nixon

Reported:  
01/07/22 10:01

**Semivolatile Organics by EPA Method 625.1 - Quality Control**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1L2901 - EPA 3510C Sep Funnel**

**Blank (B1L2901-BLK1)**

Prepared: 12/27/21 Analyzed: 12/29/21

Hexachlorobenzene	ND	5.0	µg/L							
Hexachlorobutadiene	ND	5.0	"							
Hexachlorocyclopentadiene	ND	5.0	"							
Hexachloroethane	ND	5.0	"							
Indeno (1,2,3-cd) pyrene	ND	5.0	"							
Isophorone	ND	5.0	"							
2-Methyl-4,6-dinitrophenol	ND	5.0	"							
Naphthalene	ND	5.0	"							
Nitrobenzene	ND	5.0	"							
2-Nitrophenol	ND	1.0	"							
4-Nitrophenol	ND	1.0	"							
N-Nitrosodimethylamine	ND	5.0	"							
Diphenylamine	ND	5.0	"							
N-Nitrosodi-n-propylamine	ND	5.0	"							
Pentachlorophenol	ND	1.0	"							
Phenanthrene	ND	5.0	"							
Phenol	ND	1.0	"							
Pyrene	ND	5.0	"							
1,2,4-Trichlorobenzene	ND	5.0	"							
2,4,6-Trichlorophenol	ND	1.0	"							

**LCS (B1L2901-BS1)**

Prepared: 12/27/21 Analyzed: 12/29/21

Acenaphthene	8.13	5.0	µg/L	10.0	81.3	47-145
2-Chlorophenol	15.7	1.0	"	20.0	78.4	23-134
4-Chloro-3-methylphenol	12.7	5.0	"	20.0	63.5	22-147
1,4-Dichlorobenzene	7.58	5.0	"	10.0	75.8	20-124
2,4-Dinitrotoluene	5.97	5.0	"	10.0	59.7	39-139
4-Nitrophenol	1.15	1.0	"	20.0	5.75	0-132
N-Nitrosodi-n-propylamine	8.89	5.0	"	10.0	88.9	0-230
Pentachlorophenol	6.24	1.0	"	20.0	31.2	14-176
Phenol	16.1	1.0	"	20.0	80.6	5-112
Pyrene	10.6	5.0	"	10.0	106	52-115
1,2,4-Trichlorobenzene	5.76	5.0	"	10.0	57.6	44-142

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Eastern Sierra CSD  
301 W. Line St Ste D  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Steve Nixon

Reported:  
01/07/22 10:01

**Semivolatile Organics by EPA Method 625.1 - Quality Control**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1L2901 - EPA 3510C Sep Funnel**

**LCS (B1L2901-BS2)**

Prepared: 12/27/21 Analyzed: 12/29/21

Acenaphthene	8.17	5.0	µg/L	10.0		81.7	47-145			
2-Chlorophenol	16.6	1.0	"	20.0		83.2	23-134			
4-Chloro-3-methylphenol	13.7	5.0	"	20.0		68.3	22-147			
1,4-Dichlorobenzene	7.89	5.0	"	10.0		78.9	20-124			
2,4-Dinitrotoluene	6.63	5.0	"	10.0		66.3	39-139			
4-Nitrophenol	2.22	1.0	"	20.0		11.1	0-132			
N-Nitrosodi-n-propylamine	9.75	5.0	"	10.0		97.5	0-230			
Pentachlorophenol	4.75	1.0	"	20.0		23.8	14-176			
Phenol	16.6	1.0	"	20.0		83.2	5-112			
Pyrene	7.08	5.0	"	10.0		70.8	52-115			
1,2,4-Trichlorobenzene	5.89	5.0	"	10.0		58.9	44-142			

**LCS Dup (B1L2901-BSD1)**

Prepared: 12/27/21 Analyzed: 12/29/21

Acenaphthene	8.12	5.0	µg/L	10.0		81.2	47-145	0.123	30	
2-Chlorophenol	16.7	1.0	"	20.0		83.6	23-134	6.54	30	
4-Chloro-3-methylphenol	12.4	5.0	"	20.0		62.1	22-147	2.23	30	
1,4-Dichlorobenzene	7.82	5.0	"	10.0		78.2	20-124	3.12	30	
2,4-Dinitrotoluene	4.99	5.0	"	10.0		49.9	39-139	17.9	30	
4-Nitrophenol	1.08	1.0	"	20.0		5.40	0-132	6.28	30	
N-Nitrosodi-n-propylamine	9.99	5.0	"	10.0		99.9	0-230	11.7	30	
Pentachlorophenol	5.17	1.0	"	20.0		25.8	14-176	18.8	30	
Phenol	16.7	1.0	"	20.0		83.6	5-112	3.71	30	
Pyrene	8.67	5.0	"	10.0		86.7	52-115	20.4	30	
1,2,4-Trichlorobenzene	5.88	5.0	"	10.0		58.8	44-142	2.06	30	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





Eastern Sierra CSD  
301 W. Line St Ste D  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Steve Nixon

**Reported:**  
01/07/22 10:01

#### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

---

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



**CERES Analytical Laboratory, Inc.**

4919 Windplay Dr, Suite 1, El Dorado Hills, CA 95762



December 30, 2021

Ceres ID: 14905

Sierra Analytical Labs, Inc.  
26052 Merit Circle, Suite 104  
Laguna Hills, CA 92653

The following report contains the results for the one aqueous sample received on December 21, 2020. This sample was analyzed for 2,3,7,8-TCDD by EPA method 1613. Routine turn-around time was provided for this work.

This work was authorized under Sierra Analytical Labs' Project # 2112238.

**Continuing Calibration Verification (CCV) Requirements**

All associated calibration verification standard(s) (CCV) met the acceptance criteria.

The report consists of a Cover Letter, Sample Inventory (Section I), Data Summary (Section II), Sample Tracking (Section VI), and Qualifiers/Abbreviations (Section VII). Raw Data (Section III), Continuing Calibration (Section IV), and Initial Calibration (Section V) are available in a full report (.pdf format) upon request.

If you have any questions regarding this report, please feel free to contact me at (916)932-5011.

Sincerely,

James M. Hedin  
Director of Operations/CEO  
[jhedin@ceres-lab.com](mailto:jhedin@ceres-lab.com)

## Section I: Sample Inventory

<u>Ceres Sample ID:</u>	<u>Sample ID</u>	<u>Date Received</u>	<u>Collection Date &amp; Time</u>
14905-001	EFF121521 EFF (2112238-01)	12/21/2021	12/15/2021 10:00

## **Section II: Data Summary**





### EPA Method 1613B

<b>Quality Assurance Sample Method Blank</b>	<b>QC Batch #:</b> 2544 <b>Matrix:</b> Aqueous <b>Sample Size:</b> 1.000 L	<b>Date Received:</b> NA <b>Date Extracted:</b> 12/27/2021 <b>Date Analyzed:</b> 12/29/2021
<b>Project ID:</b> 2112238		

Analyte	Conc. (pg/L)	MDL	RL	Qual.	Labeled Standards	% R	LCL-UCL (a)	Qualifiers
2,3,7,8-TCDD	DL= 1.61	0.772	5.00		13C-2378-TCDD	103	31-137	
					<b>CRS</b>			
					37Cl4-2378-TCDD	72.3	35-197	
DL - Signifies Non-Detect (ND<) sample specific detection limit. EMPC - Estimated Maximum Possible Concentration due to ion abundance ratio failure. (a) - Lower control limit - Upper control limit								

Analyst: JMH

Reviewed by: BS



### EPA Method 1613B

<b>Quality Assurance Sample</b> <b>Ongoing Precision and Recovery</b>  Project ID: 2112238	QC Batch #: 2544 Matrix: Aqueous Sample Size: 1.000 L	Date Received: NA Date Extracted: 12/27/2021 Date Analyzed: 12/29/2021
---	---	--

Analyte	Conc. (ng/mL)	Limits (a)	Labeled Standards	% Rec.	Limits (a)
2,3,7,8-TCDD	8.83	7.3-14.6	13C-2378-TCDD	96.4	25-141
			<b>CRS</b> 37Cl4-2378-TCDD	81.5	37-158
(a) Limits based on method acceptance criteria.					

---

Analyst: JMH

Reviewed by: BS



### EPA Method 1613B

<b>Client Sample ID:</b> EFF121521 EFF (2112238-01)		
<b>Project ID:</b> 2112238	<b>Ceres Sample ID:</b> 14905-001	<b>Date Received:</b> 12/21/2021
<b>Date Collected:</b> 12/15/2021	<b>QC Batch #:</b> 2544	<b>Date Extracted:</b> 12/27/2021
<b>Time Collected:</b> 10:00	<b>Matrix:</b> Aqueous	<b>Date Analyzed:</b> 12/29/2021
	<b>Sample Size:</b> 0.938 L	

Analyte	Conc. (pg/L)	MDL	RL	Qual.	Labeled Standards	% R	LCL-UCL (a)	Qualifiers
2,3,7,8-TCDD	DL= 1.49	0.772	5.33		13C-2378-TCDD	73.2	31-137	
					<b>CRS</b>			
					37Cl4-2378-TCDD	108	42-164	
DL - Signifies Non-Detect (ND<) sample specific detection limit. EMPC - Estimated Maximum Possible Concentration due to ion abundance ratio failure. (a) - Lower control limit - Upper control limit								

**Analyst:** JMH

**Reviewed by:** BS

## **Section VI: Sample Tracking**





Sample Receipt Check List    Logged by: J (initials)

Ceres ID: <u>14905</u>	Date/Time: <u>12/21/21 1708</u>
Client Project ID: <u>2112238</u>	Received Temp: <u>26</u> °C Acceptable: <u>Y</u> / N
Chain of Custody Relinquished by signed?	<u>Y</u> / N
Chain of Custody Received by signed?	<u>Y</u> / N
Custody Seals? Present?	Y / N
Intact?	Y / N
NA:	<u>NA</u>
Unlabeled / Illegible Samples	Y / <u>N</u>
Proper Containers:	<u>Y</u> / N
Preservation Acceptable (Chemical or <u>Temperature</u> )?	<u>Y</u> / N
Drinking Water, Sodium Thiosulfate present?	Y / <u>N</u> / NA
Residual Cl?	Y / <u>N</u>
Aqueous sample pH: <u>7</u>	
List COC discrepancies:	<u>J 12/25/21</u>
List Damaged Samples:	<u>J 12/25/21</u>

## Section VII: Qualifiers/Abbreviations

<b>J</b>	Concentration found below the lower quantitation limit but greater than zero.
<b>B</b>	Analyte present in the associated Method Blank.
<b>E</b>	Concentration found exceeds the Calibration range of the HRGC/HRMS.
<b>D</b>	This analyte concentration was calculated from a dilution.
<b>X</b>	The concentration found is the estimated maximum possible concentration due to chlorinated diphenyl ethers present in the sample.
<b>H</b>	Recovery limits exceeded. See cover letter.
<b>*</b>	Results taken from dilution.
<b>I</b>	Interference. See cover letter.
<b>Conc.</b>	Concentration Found
<b>DL</b>	Calculated Detection Limit
<b>ND</b>	Non-Detect
<b>% Rec.</b>	Percent Recovery



# LA Testing

520 Mission Street South Pasadena, CA 91030  
Phone/Fax: (323) 254-9960 / (323) 254-9982  
<http://www.LATesting.com> / [pasadenalab@latesting.com](mailto:pasadenalab@latesting.com)

LA Testing Order ID: 322123094  
Customer ID: 32SIER22  
Customer PO:  
Project ID:

**Attn:** Richard Forsyth  
Sierra Analytical Labs, Inc.  
26052 Merit Circle  
Suite 104  
Laguna Hills, CA 92653

**Phone:** (949) 348-9389  
**Fax:** (949) 348-9115  
**Received:** 12/20/2021  
**Analyzed:** 01/04/2022

**Proj:** 2112238

## Test Report: Determination of Asbestos Structures $\geq 0.5 \mu\text{m}$ & $> 10\mu\text{m}$ in Water Performed by the 100.2 Method (EPA 600/R-94/134)

### ASBESTOS

Sample ID Client / EMSL	Sample Filtration Date/Time	Original Sample Vol. Filtered (ml)	Effective Filter Area (mm <sup>2</sup> )	Area Analyzed (mm <sup>2</sup> )	ASBESTOS					
					Asbestos Types	Fibers Detected	Analytical Sensitivity	Concentration MFL (million fibers per liter)	Confidence Limits	
EFF121521 EFF (2112238-01) 322123094-0001	12/22/2021 12:00 PM	0.10	1288	0.2560	$\geq 0.5 \mu\text{m}$	Chrysotile	2	50.00	100.00	12.00 - 360.00
					$> 10 \mu\text{m}$ only	None Detected	ND	50.00	<50.00	0.00 - 190.00

Collection Date/Time: 12/15/2021 10:00 AM

Sample ozonated prior to analysis due to lab receipt time exceeding 48hr method hold time.

Analyst(s)

Kyeong Corbin (1)

Jerry Drapala Ph.D, Laboratory Manager  
or Other Approved Signatory

Any questions please contact Jerry Drapala.

Initial report from: 01/04/2022 14:01:39

LA Testing maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by LA Testing. LA Testing bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. Estimation of uncertainty is available on request. Sample collection and containers provided by the client, acceptable bottle blank level is defined as  $\leq 0.01\text{MFL} > 10\mu\text{m}$ . ND=None Detected. No Fibers Detected: the value will be reported as less than 369% of the concentration equivalent to one fiber. 1 to 4 fibers: The result will be reported as less than the corresponding upper 95% confidence limit (Poisson). 5 to 30 fibers: Mean and 95% confidence intervals will be reported on the basis of the Poisson assumption. When more than 30 fibers are counted, both the Gaussian 95% confidence interval and the Poisson 95% confidence interval will be calculated. The large of these two intervals will be selected for data reporting. When the Gaussian 95% confidence interval is selected for data reporting, the Poisson will also be noted.

Samples analyzed by LA Testing South Pasadena, CA CA ELAP 2283



25712 Commercentre Drive  
Lake Forest, California 92630  
949.297.5020 Phone  
949.297.5027 Fax

22 December 2021

Rick Forsyth  
Sierra Analytical  
26052 Merit Cir. Ste. 105  
Laguna Hills, CA 92653  
RE: 2112238

Enclosed are the results of analyses for samples received by the laboratory on 12/17/21 16:25. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Joann Marroquin  
Director of Operations



25712 Commercentre Drive  
Lake Forest, California 92630  
949.297.5020 Phone  
949.297.5027 Fax

Sierra Analytical  
26052 Merit Cir. Ste. 105  
Laguna Hills CA, 92653

Project: 2112238  
Project Number: 2112238  
Project Manager: Rick Forsyth

Reported:  
12/22/21 14:48

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EFF121521 EFF (2112238-01)	T213886-01	Water	12/15/21 10:00	12/17/21 16:25

SunStar Laboratories, Inc.

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Joann Marroquin, Director of Operations





25712 Commercentre Drive  
Lake Forest, California 92630  
949.297.5020 Phone  
949.297.5027 Fax

Sierra Analytical  
26052 Merit Cir. Ste. 105  
Laguna Hills CA, 92653

Project: 2112238  
Project Number: 2112238  
Project Manager: Rick Forsyth

**Reported:**  
12/22/21 14:48

**DETECTIONS SUMMARY**

**Sample ID:** EFF121521 EFF (2112238-01)

**Laboratory ID:** T213886-01

**No Results Detected**

SunStar Laboratories, Inc.

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Joann Marroquin, Director of Operations



25712 Commercentre Drive  
 Lake Forest, California 92630  
 949.297.5020 Phone  
 949.297.5027 Fax

Sierra Analytical 26052 Merit Cir. Ste. 105 Laguna Hills CA, 92653	Project: 2112238 Project Number: 2112238 Project Manager: Rick Forsyth	Reported: 12/22/21 14:48
--	--	-----------------------------

**EFF121521 EFF (2112238-01)**  
**T213886-01 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Cyanide by SM4500-CN B,C, or E or EPA 9014**

Cyanide (total)	ND	0.0050	mg/l	1	1122026	12/20/21	12/22/21	SM 4500-CN C/E	
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SunStar Laboratories, Inc.

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Joann Marroquin, Director of Operations



25712 Commercentre Drive  
 Lake Forest, California 92630  
 949.297.5020 Phone  
 949.297.5027 Fax

Sierra Analytical 26052 Merit Cir. Ste. 105 Laguna Hills CA, 92653	Project: 2112238 Project Number: 2112238 Project Manager: Rick Forsyth	Reported: 12/22/21 14:48
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**Cyanide by SM4500-CN B,C, or E or EPA 9014 - Quality Control**

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 1122026 - General Preparation**

<b>Blank (1122026-BLK1)</b>				Prepared: 12/20/21 Analyzed: 12/22/21			
Cyanide (total)	ND	0.0050	mg/l				
<b>LCS (1122026-BS1)</b>				Prepared: 12/20/21 Analyzed: 12/22/21			
Cyanide (total)	0.151	0.0050	mg/l	0.150	101 80-120		
<b>Matrix Spike (1122026-MS1)</b>				Prepared: 12/20/21 Analyzed: 12/22/21			
Source: T213884-01							
Cyanide (total)	0.00260	0.0050	mg/l	0.150	ND 1.73 75-125	QM-01	
<b>Matrix Spike Dup (1122026-MSD1)</b>				Prepared: 12/20/21 Analyzed: 12/22/21			
Source: T213884-01							
Cyanide (total)	ND	0.0050	mg/l	0.150	ND 75-125	30	QM-01

SunStar Laboratories, Inc.

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Lake Forest, California 92630  
949.297.5020 Phone  
949.297.5027 Fax

Sierra Analytical  
26052 Merit Cir. Ste. 105  
Laguna Hills CA, 92653

Project: 2112238  
Project Number: 2112238  
Project Manager: Rick Forsyth

**Reported:**  
12/22/21 14:48

### Notes and Definitions

- QM-01 The % recovery is outside of established control limits due to matrix interference and/or sample dilution due to matrix effect. The batch was accepted based on acceptable LCS recovery.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

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SunStar Laboratories, Inc.

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Joann Marroquin, Director of Operations



**SUBCONTRACT ORDER**  
**Sierra Analytical Labs, Inc.**  
**Sierra Project #: 2112238**

T213886

Comments

**SENDING LABORATORY:**

Sierra Analytical Labs, Inc.  
 26052 Merit Circle, Suite 104  
 Laguna Hills, CA 92653  
 Phone: (949) 348-9389  
 Fax: (949) 348-9115  
 Laboratory Contact: Rick Forsyth (rickf@sierralabs.net)

Turn Around	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> 24 Hour
Time Requested:	<input type="checkbox"/> 48 Hour	<input type="checkbox"/> 72 Hour
	<input type="checkbox"/> 4 Day	<input type="checkbox"/> 5 Day

**RECEIVING LABORATORY:**

SunStar Laboratories - Lake Forest  
 25712 Commercentre Dr  
 Lake Forest, CA 92630  
 Phone : (949) 297-5020  
 Fax: (949) 297-5027

Analysis	Expires	Sampled:	Laboratory ID	Comments
Sample ID: EFF121521 EFF (2112238-01)	Liquid	12/15/21 10:00	01	
EPA 335.4-Cyanide	01/12/22 10:00			
<i>Containers Supplied:</i> 250 mL Poly - NaOH (H)				

Special Instructions :

<input checked="" type="checkbox"/> Intact	<input type="checkbox"/> Sample Seals
<input checked="" type="checkbox"/> Properly Labeled	<input checked="" type="checkbox"/> Chilled TEMP (°C) <u>2.1</u>
<input checked="" type="checkbox"/> Appropriate Container	<input checked="" type="checkbox"/> Preservatives - Verified By <u>AS</u>

AS  
 Relinquished By  
AS  
 Relinquished By  
 \_\_\_\_\_  
 Relinquished By

12/17/21 1405  
 Date / Time  
12.17.21 1625  
 Date / Time  
 \_\_\_\_\_  
 Date / Time

AS  
 Received By  
AS  
 Received By  
 \_\_\_\_\_  
 Received By

12.17.21 1405  
 Date / Time  
12/17/21 1625  
 Date / Time  
 \_\_\_\_\_  
 Date / Time



## SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: T213886

Client Name: Sierra Project: 2112238

Delivered by:  Client  SunStar Courier  GLS  FedEx  UPS

If Courier, Received by: Dave Date/Time Courier Received: 12-17-21 1405

Lab Received by: Jennifer Date/Time Lab Received: 12-17-21 1625

Total number of coolers received: 1 Thermometer ID: SC-1 Calibration due :8/24/22

Temperature: Cooler #1	2.0 °C +/- the CF (+0.1 °C) = 2.1	°C corrected temperature
Temperature: Cooler #2	°C +/- the CF ( °C) =	°C corrected temperature
Temperature: Cooler #3	°C +/- the CF ( °C) =	°C corrected temperature

**Temperature criteria = ≤ 6°C (no frozen containers)** Within criteria?  Yes  No  N/A

**If NO:**

Samples received on ice?  Yes  No → **Complete Non-Conformance Sheet**

If on ice, samples received same day collected?  Yes → Acceptable  No → **Complete Non-Conformance Sheet**

Custody seals intact on cooler/sample  Yes  No\*  N/A

Sample containers intact  Yes  No\*

Sample labels match Chain of Custody IDs  Yes  No\*

Total number of containers received match COC  Yes  No\*

Proper containers received for analyses requested on COC  Yes  No\*

Proper preservative indicated on COC/containers for analyses requested  Yes  No\*  N/A

Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times  Yes  No\*

\* Complete Non-Conformance Receiving Sheet if checked Cooler/Sample Review - Initials and date: BS 12-17-21

**Comments:**

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**WORK ORDER**

**T213886**

**Client:** Sierra Analytical  
**Project:** 2112238

**Project Manager:** Joann Marroquin  
**Project Number:** 2112238

**Report To:**

Sierra Analytical  
 Rick Forsyth  
 26052 Merit Cir. Ste. 105  
 Laguna Hills, CA 92653

Date Due: 12/29/21 17:00 (5 day TAT)

Received By: Jennifer Berger

Date Received: 12/17/21 16:25

Logged In By: Jennifer Berger

Date Logged In: 12/17/21 18:09

Samples Received at: **2.1°C**  
 Custody Seals No Received On Ice Yes  
 Containers Intact Yes  
 COC/Labels Agree Yes  
 Preservation Confirmed Yes

Analysis	Due	TAT	Expires	Comments
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**T213886-01 EFF121521 EFF (2112238-01) [Water] Sampled 12/15/21 10:00 (GMT-08:00) Pacific Time (US &**

Cyanide Total	12/29/21 15:00	5	12/29/21 10:00	
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07 January 2022

Deston Dishion  
City of Bishop  
377 W. Line St.  
Bishop, CA 93514

RE:EPA Priority Pollutants

Work Order No.: 2112239

Attached are the results of the analyses for samples received by the laboratory on 12/16/21 10:30.

The samples were received by Sierra Analytical Labs, Inc. with a chain of custody record attached or completed at the submittal of the samples.

The analyses were performed according to the prescribed method as outlined by EPA, Standard Methods, and A.S.T.M.

The remaining portions of the samples will be disposed of within 30 days from the date of this report.  
If you require any additional retaining time, please advise us.

Sincerely,

Richard K. Forsyth

Laboratory Director

Sierra Analytical Labs, Inc. is certified by the California Department of Health Services (DOHS),  
Environmental Laboratory Accreditation Program (ELAP) No. 2320.



City of Bishop  
377 W. Line St.  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Deston Dishion

**Reported:**  
01/07/22 10:04

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Pond 3 Dis	2112239-01	Liquid	12/15/21 12:15	12/16/21 10:30

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City of Bishop  
 377 W. Line St.  
 Bishop CA, 93514

Project: EPA Priority Pollutants  
 Project Number: [none]  
 Project Manager: Deston Dishion

Reported:  
 01/07/22 10:04

**Metals by EPA 200 Series Methods**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Pond 3 Dis (2112239-01) Liquid**    **Sampled: 12/15/21 12:15**    **Received: 12/16/21 10:30**

Silver	ND	0.010	mg/L	1	B1L1627	12/16/21	12/17/21 14:33	EPA 200.7	
Arsenic	ND	0.034	"	"	"	"	"	"	
Beryllium	ND	0.011	"	"	"	"	"	"	
Cadmium	ND	0.010	"	"	"	"	"	"	
Chromium	ND	0.015	"	"	"	"	"	"	
Copper	ND	0.080	"	"	"	"	"	"	
Mercury	ND	0.00124	"	"	B1L1720	12/17/21	12/17/21 18:31	EPA 245.1	
Nickel	ND	0.019	"	"	B1L1627	12/16/21	12/17/21 14:33	EPA 200.7	
Lead	ND	0.010	"	"	"	"	"	"	
Antimony	ND	0.034	"	"	"	"	"	"	
Selenium	ND	0.069	"	"	"	"	"	"	
Thallium	ND	0.14	"	"	"	"	"	"	
Zinc	ND	0.030	"	"	"	"	"	"	

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City of Bishop  
377 W. Line St.  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Deston Dishion

Reported:  
01/07/22 10:04

**Organochlorine Pesticides and PCBs by EPA Method 608.3**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Pond 3 Dis (2112239-01) Liquid Sampled: 12/15/21 12:15 Received: 12/16/21 10:30**

<i>Surrogate: Decachlorobiphenyl</i>		100 %		42-147	B1L2006	12/20/21	12/21/21 09:05	EPA 608.3	
<i>Surrogate: Tetrachloro-meta-xylene</i>		51.5 %		42-147	"	"	"	"	
Aldrin	ND	0.075	"	"	"	"	"	"	
HCH-alpha	ND	0.010	"	"	"	"	"	"	
HCH-beta	ND	0.050	"	"	"	"	"	"	
HCH-delta	ND	0.10	"	"	"	"	"	"	
HCH-gamma (Lindane)	ND	0.20	"	"	"	"	"	"	
Chlordane	ND	0.050	"	"	"	"	"	"	
4,4'-DDD	ND	0.010	"	"	"	"	"	"	
4,4'-DDE	ND	0.010	"	"	"	"	"	"	
4,4'-DDT	ND	0.010	"	"	"	"	"	"	
Dieldrin	ND	0.020	"	"	"	"	"	"	
Endosulfan I	ND	0.020	"	"	"	"	"	"	
Endosulfan II	ND	0.050	"	"	"	"	"	"	
Endosulfan sulfate	ND	0.050	"	"	"	"	"	"	
Endrin	ND	0.10	"	"	"	"	"	"	
Endrin aldehyde	ND	0.050	"	"	"	"	"	"	
Heptachlor	ND	0.010	"	"	"	"	"	"	
Heptachlor epoxide	ND	0.010	"	"	"	"	"	"	
Toxaphene	ND	1.0	"	"	"	"	"	"	
PCB-1016	ND	0.50	"	"	"	"	"	"	
PCB-1221	ND	0.50	"	"	"	"	"	"	
PCB-1232	ND	0.50	"	"	"	"	"	"	
PCB-1242	ND	0.50	"	"	"	"	"	"	
PCB-1248	ND	0.50	"	"	"	"	"	"	
PCB-1254	ND	0.50	"	"	"	"	"	"	
PCB-1260	ND	0.50	"	"	"	"	"	"	

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City of Bishop  
377 W. Line St.  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Deston Dishion

Reported:  
01/07/22 10:04

**Volatile Organics by EPA Method 624.1**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						

**Pond 3 Dis (2112239-01) Liquid** Sampled: 12/15/21 12:15 Received: 12/16/21 10:30

<i>Surrogate: Dibromofluoromethane</i>		116 %		86-118	B1L1605	12/16/21	12/17/21 07:39	EPA 624.1	
<i>Surrogate: Toluene-d8</i>		104 %		88-110	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		106 %		86-115	"	"	"	"	
Acrolein	ND	5.0	"	"	"	"	"	"	
Acrylonitrile	ND	2.0	"	"	"	"	"	"	
Benzene	ND	1.0	"	"	"	"	"	"	
Bromobenzene	ND	1.0	"	"	"	"	"	"	
Bromodichloromethane	ND	1.0	"	"	"	"	"	"	
Bromoform	ND	1.0	"	"	"	"	"	"	
Bromomethane	ND	1.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.0	"	"	"	"	"	"	
Chlorobenzene	ND	1.0	"	"	"	"	"	"	
Chloroethane	ND	1.0	"	"	"	"	"	"	
2-Chloroethylvinyl ether	ND	1.0	"	"	"	"	"	"	
Chloroform	ND	1.0	"	"	"	"	"	"	
Chloromethane	ND	1.0	"	"	"	"	"	"	
Dibromochloromethane	ND	1.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Methylene chloride	ND	1.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.0	"	"	"	"	"	"	
Tetrachloroethene	ND	1.0	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.0	"	"	"	"	"	"	
Vinyl chloride	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	1.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	

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City of Bishop  
377 W. Line St.  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Deston Dishion

**Reported:**  
01/07/22 10:04

**Volatile Organics by EPA Method 624.1**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Pond 3 Dis (2112239-01) Liquid    Sampled: 12/15/21 12:15    Received: 12/16/21 10:30</b>									
Methyl tert-butyl ether	ND	1.0	µg/L	1	B1L1605	12/16/21	12/17/21 07:39	EPA 624.1	

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City of Bishop  
377 W. Line St.  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Deston Dishion

Reported:  
01/07/22 10:04

**Semivolatile Organics by EPA Method 625.1**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Pond 3 Dis (2112239-01) Liquid** Sampled: 12/15/21 12:15 Received: 12/16/21 10:30

Surrogate: 2-Fluorophenol		60.7 %		25-121	B1L2901	12/21/21	12/29/21 11:08	EPA 625.1	
Surrogate: Phenol-d6		68.8 %		24-113	"	"	"	"	
Surrogate: Nitrobenzene-d5		65.5 %		23-120	"	"	"	"	
Surrogate: 2-Fluorobiphenyl		101 %		30-115	"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		77.9 %		19-122	"	"	"	"	
Surrogate: Terphenyl-d14		63.1 %		18-137	"	"	"	"	
Acenaphthene	ND	5.0	"	"	"	"	"	"	
Acenaphthylene	ND	5.0	"	"	"	"	"	"	
Anthracene	ND	5.0	"	"	"	"	"	"	
Benzidine	ND	5.0	"	"	"	"	"	"	
Benzo (a) anthracene	ND	5.0	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	5.0	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	5.0	"	"	"	"	"	"	
Benzo (a) pyrene	ND	5.0	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	5.0	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	5.0	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	5.0	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	5.0	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	5.0	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	5.0	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	5.0	"	"	"	"	"	"	
2-Chlorophenol	ND	1.0	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	5.0	"	"	"	"	"	"	
2-Chloronaphthalene	ND	5.0	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	5.0	"	"	"	"	"	"	
Chrysene	ND	5.0	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
3,3'-Dichlorobenzidine	ND	5.0	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	1.0	"	"	"	"	"	"	
Diethyl phthalate	ND	5.0	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	1.0	"	"	"	"	"	"	
Dimethyl phthalate	ND	5.0	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	5.0	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	1.0	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	5.0	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	5.0	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	5.0	"	"	"	"	"	"	
1,2-Diphenylhydrazine	ND	5.0	"	"	"	"	"	"	

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City of Bishop  
377 W. Line St.  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Deston Dishion

Reported:  
01/07/22 10:04

**Semivolatile Organics by EPA Method 625.1**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Pond 3 Dis (2112239-01) Liquid Sampled: 12/15/21 12:15 Received: 12/16/21 10:30</b>									
Fluoranthene	ND	5.0	µg/L	1	B1L2901	12/21/21	12/29/21 11:08	EPA 625.1	
Fluorene	ND	5.0	"	"	"	"	"	"	
Hexachlorobenzene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	5.0	"	"	"	"	"	"	
Hexachloroethane	ND	5.0	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	5.0	"	"	"	"	"	"	
Isophorone	ND	5.0	"	"	"	"	"	"	
2-Methyl-4,6-dinitrophenol	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
Nitrobenzene	ND	5.0	"	"	"	"	"	"	
2-Nitrophenol	ND	1.0	"	"	"	"	"	"	
4-Nitrophenol	ND	1.0	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	5.0	"	"	"	"	"	"	
Diphenylamine	ND	5.0	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	5.0	"	"	"	"	"	"	
Pentachlorophenol	ND	1.0	"	"	"	"	"	"	
Phenanthrene	ND	5.0	"	"	"	"	"	"	
Phenol	ND	1.0	"	"	"	"	"	"	
Pyrene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	1.0	"	"	"	"	"	"	

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City of Bishop  
377 W. Line St.  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Deston Dishion

Reported:  
01/07/22 10:04

**Metals by EPA 200 Series Methods - Quality Control**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1L1627 - EPA 200 Series**

**Blank (B1L1627-BLK1)**

Prepared: 12/16/21 Analyzed: 12/17/21

Selenium	ND	0.069	mg/L							
Chromium	ND	0.015	"							
Nickel	ND	0.019	"							
Cadmium	ND	0.010	"							
Antimony	ND	0.034	"							
Copper	ND	0.080	"							
Beryllium	ND	0.011	"							
Lead	ND	0.010	"							
Thallium	ND	0.14	"							
Arsenic	ND	0.034	"							
Zinc	ND	0.030	"							
Silver	ND	0.010	"							

**LCS (B1L1627-BS1)**

Prepared: 12/16/21 Analyzed: 12/17/21

Selenium	0.215	0.069	mg/L	0.200		108	85-119
Thallium	0.229	0.14	"	0.200		114	85-115
Lead	0.218	0.010	"	0.200		109	85-115
Nickel	0.220	0.019	"	0.200		110	85-115
Zinc	0.221	0.030	"	0.200		110	85-115
Copper	0.228	0.080	"	0.200		114	85-115
Antimony	0.224	0.034	"	0.200		112	85-115
Arsenic	0.211	0.034	"	0.200		105	80-120
Chromium	0.213	0.015	"	0.200		106	85-115
Silver	0.214	0.010	"	0.200		107	85-115
Cadmium	0.211	0.010	"	0.200		105	85-115
Beryllium	0.212	0.011	"	0.200		106	85-115

**Matrix Spike (B1L1627-MS1)**

Source: 2112226-01

Prepared: 12/16/21 Analyzed: 12/17/21

Zinc	0.233	0.030	mg/L	0.200	0.0268	103	70-130
Silver	0.192	0.010	"	0.200	ND	96.0	70-130
Thallium	0.191	0.14	"	0.200	ND	95.4	70-130
Lead	0.190	0.010	"	0.200	0.00200	94.2	70-130
Selenium	0.170	0.069	"	0.200	ND	85.0	70-130
Chromium	0.195	0.015	"	0.200	ND	97.4	75-130
Arsenic	0.201	0.034	"	0.200	ND	100	70-130
Antimony	0.202	0.034	"	0.200	ND	101	70-130
Beryllium	0.195	0.011	"	0.200	ND	97.6	70-130
Copper	0.212	0.080	"	0.200	ND	106	70-130

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City of Bishop  
377 W. Line St.  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Deston Dishion

Reported:  
01/07/22 10:04

**Metals by EPA 200 Series Methods - Quality Control**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1L1627 - EPA 200 Series**

<b>Matrix Spike (B1L1627-MS1)</b>		<b>Source: 2112226-01</b>			<b>Prepared: 12/16/21 Analyzed: 12/17/21</b>					
Nickel	0.205	0.019	mg/L	0.200	0.00600	99.3	70-130			
Cadmium	0.192	0.010	"	0.200	ND	96.1	70-130			

<b>Matrix Spike Dup (B1L1627-MSD1)</b>		<b>Source: 2112226-01</b>			<b>Prepared: 12/16/21 Analyzed: 12/17/21</b>					
Cadmium	0.214	0.010	mg/L	0.200	ND	107	70-130	10.9	20	
Selenium	0.183	0.069	"	0.200	ND	91.6	70-130	7.47	20	
Chromium	0.216	0.015	"	0.200	ND	108	75-130	10.3	20	
Lead	0.215	0.010	"	0.200	0.00200	107	70-130	12.3	20	
Thallium	0.201	0.14	"	0.200	ND	101	70-130	5.41	20	
Copper	0.230	0.080	"	0.200	ND	115	70-130	8.23	20	
Nickel	0.232	0.019	"	0.200	0.00600	113	70-130	12.7	20	
Zinc	0.265	0.030	"	0.200	0.0268	119	70-130	13.0	20	
Arsenic	0.222	0.034	"	0.200	ND	111	70-130	10.2	20	
Antimony	0.227	0.034	"	0.200	ND	113	70-130	11.2	20	
Beryllium	0.218	0.011	"	0.200	ND	109	70-130	11.0	20	
Silver	0.213	0.010	"	0.200	ND	106	70-130	10.3	20	

**Batch B1L1720 - EPA 200 Series**

<b>Blank (B1L1720-BLK1)</b>					<b>Prepared &amp; Analyzed: 12/17/21</b>					
Mercury	ND	0.00124	mg/L							

<b>LCS (B1L1720-BS1)</b>					<b>Prepared &amp; Analyzed: 12/17/21</b>					
Mercury	0.00106	0.00124	mg/L	0.00100		106	75-125			

<b>Matrix Spike (B1L1720-MS1)</b>		<b>Source: 2112238-01</b>			<b>Prepared &amp; Analyzed: 12/17/21</b>					
Mercury	0.00111	0.00124	mg/L	0.00100	ND	111	75-125			

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City of Bishop  
 377 W. Line St.  
 Bishop CA, 93514

Project: EPA Priority Pollutants  
 Project Number: [none]  
 Project Manager: Deston Dishion

**Reported:**  
 01/07/22 10:04

**Metals by EPA 200 Series Methods - Quality Control**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1L1720 - EPA 200 Series**

**Matrix Spike Dup (B1L1720-MSD1)**

**Source: 2112238-01**

Prepared & Analyzed: 12/17/21

Mercury	0.00111	0.00124	mg/L	0.00100	ND	111	75-125	0.450	20	
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City of Bishop  
377 W. Line St.  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Deston Dishion

Reported:  
01/07/22 10:04

**Organochlorine Pesticides and PCBs by EPA Method 608.3 - Quality Control**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1L2006 - EPA 3510C Sep Funnel**

**Blank (B1L2006-BLK1)**

Prepared: 12/20/21 Analyzed: 12/21/21

Aldrin	ND	0.075	µg/L							
HCH-alpha	ND	0.010	"							
HCH-beta	ND	0.050	"							
HCH-delta	ND	0.10	"							
HCH-gamma (Lindane)	ND	0.20	"							
Chlordane	ND	0.050	"							
4,4'-DDD	ND	0.010	"							
4,4'-DDE	ND	0.010	"							
4,4'-DDT	ND	0.010	"							
Dieldrin	ND	0.020	"							
Endosulfan I	ND	0.020	"							
Endosulfan II	ND	0.050	"							
Endosulfan sulfate	ND	0.050	"							
Endrin	ND	0.10	"							
Endrin aldehyde	ND	0.050	"							
Heptachlor	ND	0.010	"							
Heptachlor epoxide	ND	0.010	"							
Toxaphene	ND	1.0	"							
PCB-1016	ND	0.50	"							
PCB-1221	ND	0.50	"							
PCB-1232	ND	0.50	"							
PCB-1242	ND	0.50	"							
PCB-1248	ND	0.50	"							
PCB-1254	ND	0.50	"							
PCB-1260	ND	0.50	"							

**LCS (B1L2006-BS1)**

Prepared: 12/20/21 Analyzed: 12/21/21

Aldrin	0.563	0.075	µg/L	0.500	113	80-120
HCH-gamma (Lindane)	0.586	0.20	"	0.500	117	80-120
4,4'-DDT	0.549	0.010	"	0.500	110	80-120
Dieldrin	0.535	0.020	"	0.500	107	80-120
Heptachlor	0.597	0.010	"	0.500	119	80-120

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City of Bishop  
377 W. Line St.  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Deston Dishion

Reported:  
01/07/22 10:04

**Organochlorine Pesticides and PCBs by EPA Method 608.3 - Quality Control**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1L2006 - EPA 3510C Sep Funnel**

**LCS (B1L2006-BS2)**

Prepared: 12/20/21 Analyzed: 12/21/21

Aldrin	0.569	0.075	µg/L	0.500		114	80-120			
HCH-gamma (Lindane)	0.509	0.20	"	0.500		102	80-120			
4,4'-DDT	0.596	0.010	"	0.500		119	80-120			
Dieldrin	0.559	0.020	"	0.500		112	80-120			
Heptachlor	0.570	0.010	"	0.500		114	80-120			

**LCS Dup (B1L2006-BS1)**

Prepared: 12/20/21 Analyzed: 12/21/21

Aldrin	0.581	0.075	µg/L	0.500		116	80-120	3.16	30	
HCH-gamma (Lindane)	0.525	0.20	"	0.500		105	80-120	11.0	30	
4,4'-DDT	0.537	0.010	"	0.500		107	80-120	2.37	30	
Dieldrin	0.571	0.020	"	0.500		114	80-120	6.52	30	
Heptachlor	0.599	0.010	"	0.500		120	80-120	0.361	30	

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City of Bishop  
377 W. Line St.  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Deston Dishion

Reported:  
01/07/22 10:04

**Volatile Organics by EPA Method 624.1 - Quality Control**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1L1605 - EPA 5030B P & T**

**Blank (B1L1605-BLK1)**

Prepared: 12/16/21 Analyzed: 12/17/21

Acrolein	ND	5.0	µg/L							
Acrylonitrile	ND	2.0	"							
Benzene	ND	1.0	"							
Bromobenzene	ND	1.0	"							
Bromodichloromethane	ND	1.0	"							
Bromoform	ND	1.0	"							
Bromomethane	ND	1.0	"							
Carbon tetrachloride	ND	1.0	"							
Chlorobenzene	ND	1.0	"							
Chloroethane	ND	1.0	"							
2-Chloroethylvinyl ether	ND	1.0	"							
Chloroform	ND	1.0	"							
Chloromethane	ND	1.0	"							
Dibromochloromethane	ND	1.0	"							
1,2-Dichlorobenzene	ND	1.0	"							
1,3-Dichlorobenzene	ND	1.0	"							
1,4-Dichlorobenzene	ND	1.0	"							
1,1-Dichloroethane	ND	1.0	"							
1,2-Dichloroethane	ND	1.0	"							
1,1-Dichloroethene	ND	1.0	"							
cis-1,2-Dichloroethene	ND	1.0	"							
trans-1,2-Dichloroethene	ND	1.0	"							
1,2-Dichloropropane	ND	1.0	"							
1,1-Dichloropropene	ND	1.0	"							
cis-1,3-Dichloropropene	ND	1.0	"							
trans-1,3-Dichloropropene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Methylene chloride	ND	1.0	"							
1,1,2,2-Tetrachloroethane	ND	1.0	"							
Tetrachloroethene	ND	1.0	"							
Toluene	ND	1.0	"							
1,1,1-Trichloroethane	ND	1.0	"							
1,1,2-Trichloroethane	ND	1.0	"							
Trichloroethene	ND	1.0	"							
Trichlorofluoromethane	ND	1.0	"							
Vinyl chloride	ND	1.0	"							
m,p-Xylene	ND	1.0	"							

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City of Bishop  
377 W. Line St.  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Deston Dishion

Reported:  
01/07/22 10:04

**Volatile Organics by EPA Method 624.1 - Quality Control**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1L1605 - EPA 5030B P & T**

**Blank (B1L1605-BLK1)**

Prepared: 12/16/21 Analyzed: 12/17/21

o-Xylene	ND	1.0	µg/L							
Methyl tert-butyl ether	ND	1.0	"							

**LCS (B1L1605-BS1)**

Prepared: 12/16/21 Analyzed: 12/17/21

Benzene	48.2	1.0	µg/L	50.0		96.5	80-120			
Chlorobenzene	47.3	1.0	"	50.0		94.6	80-120			
1,1-Dichloroethene	41.1	1.0	"	50.0		82.2	80-120			
Toluene	47.8	1.0	"	50.0		95.6	80-120			
Trichloroethene	42.6	1.0	"	50.0		85.1	80-120			

**Matrix Spike (B1L1605-MS1)**

Source: 2112223-01

Prepared: 12/16/21 Analyzed: 12/17/21

Benzene	46.3	1.0	µg/L	50.0	ND	92.7	37-151			
Chlorobenzene	44.8	1.0	"	50.0	ND	89.6	37-160			
1,1-Dichloroethene	37.1	1.0	"	50.0	ND	74.1	50-150			
Toluene	44.2	1.0	"	50.0	ND	88.4	47-150			
Trichloroethene	39.6	1.0	"	50.0	ND	79.1	71-157			

**Matrix Spike Dup (B1L1605-MSD1)**

Source: 2112223-01

Prepared: 12/16/21 Analyzed: 12/17/21

Benzene	52.6	1.0	µg/L	50.0	ND	105	37-151	12.8	30	
Chlorobenzene	50.5	1.0	"	50.0	ND	101	37-160	11.9	30	
1,1-Dichloroethene	44.9	1.0	"	50.0	ND	89.8	50-150	19.1	30	
Toluene	52.8	1.0	"	50.0	ND	106	47-150	17.8	30	
Trichloroethene	45.2	1.0	"	50.0	ND	90.5	71-157	13.4	30	

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City of Bishop  
377 W. Line St.  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Deston Dishion

Reported:  
01/07/22 10:04

**Semivolatile Organics by EPA Method 625.1 - Quality Control**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1L2901 - EPA 3510C Sep Funnel**

**Blank (B1L2901-BLK1)**

Prepared: 12/27/21 Analyzed: 12/29/21

Acenaphthene	ND	5.0	µg/L							
Acenaphthylene	ND	5.0	"							
Anthracene	ND	5.0	"							
Benzidine	ND	5.0	"							
Benzo (a) anthracene	ND	5.0	"							
Benzo (b) fluoranthene	ND	5.0	"							
Benzo (k) fluoranthene	ND	5.0	"							
Benzo (a) pyrene	ND	5.0	"							
Benzo (g,h,i) perylene	ND	5.0	"							
Butyl benzyl phthalate	ND	5.0	"							
Bis(2-chloroethyl)ether	ND	5.0	"							
Bis(2-chloroethoxy)methane	ND	5.0	"							
Bis(2-ethylhexyl)phthalate	ND	5.0	"							
Bis(2-chloroisopropyl)ether	ND	5.0	"							
4-Bromophenyl phenyl ether	ND	5.0	"							
2-Chlorophenol	ND	1.0	"							
4-Chloro-3-methylphenol	ND	5.0	"							
2-Chloronaphthalene	ND	5.0	"							
4-Chlorophenyl phenyl ether	ND	5.0	"							
Chrysene	ND	5.0	"							
Dibenz (a,h) anthracene	ND	5.0	"							
1,3-Dichlorobenzene	ND	5.0	"							
1,2-Dichlorobenzene	ND	5.0	"							
1,4-Dichlorobenzene	ND	5.0	"							
3,3'-Dichlorobenzidine	ND	5.0	"							
2,4-Dichlorophenol	ND	1.0	"							
Diethyl phthalate	ND	5.0	"							
2,4-Dimethylphenol	ND	1.0	"							
Dimethyl phthalate	ND	5.0	"							
Di-n-butyl phthalate	ND	5.0	"							
2,4-Dinitrophenol	ND	1.0	"							
2,4-Dinitrotoluene	ND	5.0	"							
2,6-Dinitrotoluene	ND	5.0	"							
Di-n-octyl phthalate	ND	5.0	"							
1,2-Diphenylhydrazine	ND	5.0	"							
Fluoranthene	ND	5.0	"							
Fluorene	ND	5.0	"							

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City of Bishop  
377 W. Line St.  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Deston Dishion

Reported:  
01/07/22 10:04

**Semivolatle Organics by EPA Method 625.1 - Quality Control**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1L2901 - EPA 3510C Sep Funnel**

**Blank (B1L2901-BLK1)**

Prepared: 12/27/21 Analyzed: 12/29/21

Hexachlorobenzene	ND	5.0	µg/L							
Hexachlorobutadiene	ND	5.0	"							
Hexachlorocyclopentadiene	ND	5.0	"							
Hexachloroethane	ND	5.0	"							
Indeno (1,2,3-cd) pyrene	ND	5.0	"							
Isophorone	ND	5.0	"							
2-Methyl-4,6-dinitrophenol	ND	5.0	"							
Naphthalene	ND	5.0	"							
Nitrobenzene	ND	5.0	"							
2-Nitrophenol	ND	1.0	"							
4-Nitrophenol	ND	1.0	"							
N-Nitrosodimethylamine	ND	5.0	"							
Diphenylamine	ND	5.0	"							
N-Nitrosodi-n-propylamine	ND	5.0	"							
Pentachlorophenol	ND	1.0	"							
Phenanthrene	ND	5.0	"							
Phenol	ND	1.0	"							
Pyrene	ND	5.0	"							
1,2,4-Trichlorobenzene	ND	5.0	"							
2,4,6-Trichlorophenol	ND	1.0	"							

**LCS (B1L2901-BS1)**

Prepared: 12/27/21 Analyzed: 12/29/21

Acenaphthene	8.13	5.0	µg/L	10.0	81.3	47-145
2-Chlorophenol	15.7	1.0	"	20.0	78.4	23-134
4-Chloro-3-methylphenol	12.7	5.0	"	20.0	63.5	22-147
1,4-Dichlorobenzene	7.58	5.0	"	10.0	75.8	20-124
2,4-Dinitrotoluene	5.97	5.0	"	10.0	59.7	39-139
4-Nitrophenol	1.15	1.0	"	20.0	5.75	0-132
N-Nitrosodi-n-propylamine	8.89	5.0	"	10.0	88.9	0-230
Pentachlorophenol	6.24	1.0	"	20.0	31.2	14-176
Phenol	16.1	1.0	"	20.0	80.6	5-112
Pyrene	10.6	5.0	"	10.0	106	52-115
1,2,4-Trichlorobenzene	5.76	5.0	"	10.0	57.6	44-142

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





City of Bishop  
377 W. Line St.  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Deston Dishion

Reported:  
01/07/22 10:04

**Semivolatile Organics by EPA Method 625.1 - Quality Control**

**Sierra Analytical Labs, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1L2901 - EPA 3510C Sep Funnel**

**LCS (B1L2901-BS2)**

Prepared: 12/27/21 Analyzed: 12/29/21

Acenaphthene	8.17	5.0	µg/L	10.0		81.7	47-145			
2-Chlorophenol	16.6	1.0	"	20.0		83.2	23-134			
4-Chloro-3-methylphenol	13.7	5.0	"	20.0		68.3	22-147			
1,4-Dichlorobenzene	7.89	5.0	"	10.0		78.9	20-124			
2,4-Dinitrotoluene	6.63	5.0	"	10.0		66.3	39-139			
4-Nitrophenol	2.22	1.0	"	20.0		11.1	0-132			
N-Nitrosodi-n-propylamine	9.75	5.0	"	10.0		97.5	0-230			
Pentachlorophenol	4.75	1.0	"	20.0		23.8	14-176			
Phenol	16.6	1.0	"	20.0		83.2	5-112			
Pyrene	7.08	5.0	"	10.0		70.8	52-115			
1,2,4-Trichlorobenzene	5.89	5.0	"	10.0		58.9	44-142			

**LCS Dup (B1L2901-BSD1)**

Prepared: 12/27/21 Analyzed: 12/29/21

Acenaphthene	8.12	5.0	µg/L	10.0		81.2	47-145	0.123	30	
2-Chlorophenol	16.7	1.0	"	20.0		83.6	23-134	6.54	30	
4-Chloro-3-methylphenol	12.4	5.0	"	20.0		62.1	22-147	2.23	30	
1,4-Dichlorobenzene	7.82	5.0	"	10.0		78.2	20-124	3.12	30	
2,4-Dinitrotoluene	4.99	5.0	"	10.0		49.9	39-139	17.9	30	
4-Nitrophenol	1.08	1.0	"	20.0		5.40	0-132	6.28	30	
N-Nitrosodi-n-propylamine	9.99	5.0	"	10.0		99.9	0-230	11.7	30	
Pentachlorophenol	5.17	1.0	"	20.0		25.8	14-176	18.8	30	
Phenol	16.7	1.0	"	20.0		83.6	5-112	3.71	30	
Pyrene	8.67	5.0	"	10.0		86.7	52-115	20.4	30	
1,2,4-Trichlorobenzene	5.88	5.0	"	10.0		58.8	44-142	2.06	30	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



City of Bishop  
377 W. Line St.  
Bishop CA, 93514

Project: EPA Priority Pollutants  
Project Number: [none]  
Project Manager: Deston Dishion

**Reported:**  
01/07/22 10:04

#### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

---

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



**CERES Analytical Laboratory, Inc.**

4919 Windplay Dr, Suite 1, El Dorado Hills, CA 95762



December 30, 2021

Ceres ID: 14906

Sierra Analytical Labs, Inc.  
26052 Merit Circle, Suite 104  
Laguna Hills, CA 92653

The following report contains the results for the one aqueous sample received on December 21, 2020. This sample was analyzed for 2,3,7,8-TCDD by EPA method 1613. Routine turn-around time was provided for this work.

This work was authorized under Sierra Analytical Labs' Project # 2112239.

**Continuing Calibration Verification (CCV) Requirements**

All associated calibration verification standard(s) (CCV) met the acceptance criteria.

The report consists of a Cover Letter, Sample Inventory (Section I), Data Summary (Section II), Sample Tracking (Section VI), and Qualifiers/Abbreviations (Section VII). Raw Data (Section III), Continuing Calibration (Section IV), and Initial Calibration (Section V) are available in a full report (.pdf format) upon request.

If you have any questions regarding this report, please feel free to contact me at (916)932-5011.

Sincerely,

James M. Hedin  
Director of Operations/CEO  
[jhedin@ceres-lab.com](mailto:jhedin@ceres-lab.com)

## Section I: Sample Inventory

<u>Ceres Sample ID:</u>	<u>Sample ID</u>	<u>Date Received</u>	<u>Collection Date &amp; Time</u>
14906-001	Pond 3 Dis (2112239-01)	12/21/2021	12/15/2021 12:15

## **Section II: Data Summary**





### EPA Method 1613B

<b>Quality Assurance Sample Method Blank</b>	<b>QC Batch #:</b> 2544 <b>Matrix:</b> Aqueous <b>Sample Size:</b> 1.000 L	<b>Date Received:</b> NA <b>Date Extracted:</b> 12/27/2021 <b>Date Analyzed:</b> 12/29/2021
<b>Project ID:</b> 2112239		

Analyte	Conc. (pg/L)	MDL	RL	Qual.	Labeled Standards	% R	LCL-UCL (a)	Qualifiers
2,3,7,8-TCDD	DL= 1.61	0.772	5.00		13C-2378-TCDD	103	31-137	
					<b>CRS</b>			
					37Cl4-2378-TCDD	72.3	35-197	
DL - Signifies Non-Detect (ND<) sample specific detection limit. EMPC - Estimated Maximum Possible Concentration due to ion abundance ratio failure. (a) - Lower control limit - Upper control limit								

Analyst: JMH

Reviewed by: BS



### EPA Method 1613B

<b>Quality Assurance Sample</b> <b>Ongoing Precision and Recovery</b>  Project ID: 2112239	QC Batch #: 2544 Matrix: Aqueous Sample Size: 1.000 L	Date Received: NA Date Extracted: 12/27/2021 Date Analyzed: 12/29/2021
---	---	--

Analyte	Conc. (ng/mL)	Limits (a)	Labeled Standards	% Rec.	Limits (a)
2,3,7,8-TCDD	8.83	7.3-14.6	13C-2378-TCDD	96.4	25-141
			<b>CRS</b>		
			37Cl4-2378-TCDD	81.5	37-158
(a) Limits based on method acceptance criteria.					

---

Analyst: JMH

Reviewed by: BS



### EPA Method 1613B

<b>Client Sample ID:</b> Pond 3 Dis (2112239-01)		
<b>Project ID:</b> 2112239	<b>Ceres Sample ID:</b> 14906-001	<b>Date Received:</b> 12/21/2021
<b>Date Collected:</b> 12/15/2021	<b>QC Batch #:</b> 2544	<b>Date Extracted:</b> 12/27/2021
<b>Time Collected:</b> 12:15	<b>Matrix:</b> Aqueous	<b>Date Analyzed:</b> 12/29/2021
	<b>Sample Size:</b> 0.947 L	

Analyte	Conc. (pg/L)	MDL	RL	Qual.	Labeled Standards	% R	LCL-UCL (a)	Qualifiers
2,3,7,8-TCDD	DL= 2.05	0.772	5.28		13C-2378-TCDD	56.3	31-137	
					<b>CRS</b>			
					37Cl4-2378-TCDD	60.3	42-164	
DL - Signifies Non-Detect (ND<) sample specific detection limit. EMPC - Estimated Maximum Possible Concentration due to ion abundance ratio failure. (a) - Lower control limit - Upper control limit								

Analyst: JMH

Reviewed by: BS

## **Section VI: Sample Tracking**



**SUBCONTRACT ORDER**  
**Sierra Analytical Labs, Inc.**  
**Sierra Project #: 2112239**

Comments

**SENDING LABORATORY:**

Sierra Analytical Labs, Inc.  
 26052 Merit Circle, Suite 104  
 Laguna Hills, CA 92653  
 Phone: (949) 348-9389  
 Fax: (949) 348-9115  
 Laboratory Contact: Rick Forsyth (rickf@sierralabs.net)

Turn Around	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> 24 Hour
Time Requested:	<input type="checkbox"/> 48 Hour	<input type="checkbox"/> 72 Hour
	<input type="checkbox"/> 4 Day	<input type="checkbox"/> 5 Day

**RECEIVING LABORATORY:**

Ceres Analytical Laboratory, Inc.  
 4919 Windplay Dr. Suite 1  
 El Dorado Hills, CA 95762  
 Phone : (916) 932-5011  
 Fax:

Analysis	Expires	Sampled:	Laboratory ID	Comments
Sample ID: Pond 3 Dis (2112239-01)	Liquid	12/15/21 12:15		
Dioxin 1613 Hi-Res (2378-TCDD)	01/14/22 12:15			

**Containers Supplied:**  
 1L Amber (F)

Special Instructions :

<input type="checkbox"/> Intact	<input type="checkbox"/> Sample Seals
<input type="checkbox"/> Properly Labeled	<input type="checkbox"/> Chilled TEMP (°C) _____
<input type="checkbox"/> Appropriate Container	<input type="checkbox"/> Preservatives - Verified By _____

ALC 12/20/21 1200  
 Relinquished By Date / Time

[Signature] 12/21/21 1700  
 Received By Date / Time

Relinquished By Date / Time

Received By Date / Time

Relinquished By Date / Time

Received By Date / Time





## Section VII: Qualifiers/Abbreviations

<b>J</b>	Concentration found below the lower quantitation limit but greater than zero.
<b>B</b>	Analyte present in the associated Method Blank.
<b>E</b>	Concentration found exceeds the Calibration range of the HRGC/HRMS.
<b>D</b>	This analyte concentration was calculated from a dilution.
<b>X</b>	The concentration found is the estimated maximum possible concentration due to chlorinated diphenyl ethers present in the sample.
<b>H</b>	Recovery limits exceeded. See cover letter.
<b>*</b>	Results taken from dilution.
<b>I</b>	Interference. See cover letter.
<b>Conc.</b>	Concentration Found
<b>DL</b>	Calculated Detection Limit
<b>ND</b>	Non-Detect
<b>% Rec.</b>	Percent Recovery



# LA Testing

520 Mission Street South Pasadena, CA 91030  
 Phone/Fax: (323) 254-9960 / (323) 254-9982  
<http://www.LATesting.com> / [pasadenalab@latesting.com](mailto:pasadenalab@latesting.com)

LA Testing Order ID: 322123096  
 Customer ID: 32SIER22  
 Customer PO:  
 Project ID:

**Attn:** Richard Forsyth  
 Sierra Analytical Labs, Inc.  
 26052 Merit Circle  
 Suite 104  
 Laguna Hills, CA 92653

**Phone:** (949) 348-9389  
**Fax:** (949) 348-9115  
**Received:** 12/20/2021  
**Analyzed:** 01/05/2022

**Proj:** 2112239

## Test Report: Determination of Asbestos Structures $\geq 0.5 \mu\text{m}$ & $> 10\mu\text{m}$ in Water Performed by the 100.2 Method (EPA 600/R-94/134)

### ASBESTOS

Sample ID Client / EMSL	Sample Filtration Date/Time	Original Sample Vol. Filtered (ml)	Effective Filter Area (mm <sup>2</sup> )	Area Analyzed (mm <sup>2</sup> )	ASBESTOS					
					Asbestos Types	Fibers Detected	Analytical Sensitivity	Concentration	Confidence Limits	
Pond 3 Dis (2112239-01 322123096-0001	12/22/2021 12:00 PM	0.10	1288	0.2560	$\geq 0.5$ $\mu\text{m}$	None Detected	ND	50.00	<50.00	0.00 - 190.00
					$> 10$ $\mu\text{m}$ only	None Detected	ND	50.00	<50.00	0.00 - 190.00

Collection Date/Time: 12/15/2021 12:15 PM

Sample ozonated prior to analysis due to lab receipt time exceeding 48hr method hold time.

Analyst(s)

Kyeong Corbin (1)

Jerry Drapala Ph.D, Laboratory Manager  
 or Other Approved Signatory

Any questions please contact Jerry Drapala.

Initial report from: 01/05/2022 10:12:51

LA Testing maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by LA Testing. LA Testing bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. Estimation of uncertainty is available on request. Sample collection and containers provided by the client, acceptable bottle blank level is defined as  $\leq 0.01\text{MFL} > 10\mu\text{m}$ . ND=None Detected. No Fibers Detected: the value will be reported as less than 369% of the concentration equivalent to one fiber. 1 to 4 fibers: The result will be reported as less than the corresponding upper 95% confidence limit (Poisson). 5 to 30 fibers: Mean and 95% confidence intervals will be reported on the basis of the Poisson assumption. When more than 30 fibers are counted, both the Gaussian 95% confidence interval and the Poisson 95% confidence interval will be calculated. The large of these two intervals will be selected for data reporting. When the Gaussian 95% confidence interval is selected for data reporting, the Poisson will also be noted.

Samples analyzed by LA Testing South Pasadena, CA CA ELAP 2283



25712 Commercentre Drive  
Lake Forest, California 92630  
949.297.5020 Phone  
949.297.5027 Fax

22 December 2021

Rick Forsyth  
Sierra Analytical  
26052 Merit Cir. Ste. 105  
Laguna Hills, CA 92653  
RE: 2112239

Enclosed are the results of analyses for samples received by the laboratory on 12/17/21 16:25. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Joann Marroquin  
Director of Operations



25712 Commercentre Drive  
Lake Forest, California 92630  
949.297.5020 Phone  
949.297.5027 Fax

Sierra Analytical 26052 Merit Cir. Ste. 105 Laguna Hills CA, 92653	Project: 2112239 Project Number: 2112239 Project Manager: Rick Forsyth	Reported: 12/22/21 14:46
--	--	-----------------------------

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Pond 3 Dis (2112239-01)	T213887-01	Water	12/15/21 12:15	12/17/21 16:25

SunStar Laboratories, Inc.

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Joann Marroquin, Director of Operations





25712 Commercentre Drive  
Lake Forest, California 92630  
949.297.5020 Phone  
949.297.5027 Fax

Sierra Analytical  
26052 Merit Cir. Ste. 105  
Laguna Hills CA, 92653

Project: 2112239  
Project Number: 2112239  
Project Manager: Rick Forsyth

Reported:  
12/22/21 14:46

**DETECTIONS SUMMARY**

**Sample ID:** Pond 3 Dis (2112239-01)

**Laboratory ID:** T213887-01

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Cyanide (total)	0.0069	0.0050		mg/l	SM 4500-CN C/E	

SunStar Laboratories, Inc.

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Joann Marroquin, Director of Operations



25712 Commercentre Drive  
 Lake Forest, California 92630  
 949.297.5020 Phone  
 949.297.5027 Fax

Sierra Analytical 26052 Merit Cir. Ste. 105 Laguna Hills CA, 92653	Project: 2112239 Project Number: 2112239 Project Manager: Rick Forsyth	Reported: 12/22/21 14:46
--	--	-----------------------------

**Pond 3 Dis (2112239-01)**  
**T213887-01 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Cyanide by SM4500-CN B,C, or E or EPA 9014**

Cyanide (total)	0.0069	0.0050	mg/l	1	1122026	12/20/21	12/22/21	SM 4500-CN C/E	
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SunStar Laboratories, Inc.

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Joann Marroquin, Director of Operations



25712 Commercentre Drive  
 Lake Forest, California 92630  
 949.297.5020 Phone  
 949.297.5027 Fax

Sierra Analytical 26052 Merit Cir. Ste. 105 Laguna Hills CA, 92653	Project: 2112239 Project Number: 2112239 Project Manager: Rick Forsyth	Reported: 12/22/21 14:46
--	--	-----------------------------

**Cyanide by SM4500-CN B,C, or E or EPA 9014 - Quality Control**

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 1122026 - General Preparation**

<b>Blank (1122026-BLK1)</b>				Prepared: 12/20/21 Analyzed: 12/22/21						
Cyanide (total)	ND	0.0050	mg/l							
<b>LCS (1122026-BS1)</b>				Prepared: 12/20/21 Analyzed: 12/22/21						
Cyanide (total)	0.151	0.0050	mg/l	0.150		101	80-120			
<b>Matrix Spike (1122026-MS1)</b>				Source: T213884-01 Prepared: 12/20/21 Analyzed: 12/22/21						
Cyanide (total)	0.00260	0.0050	mg/l	0.150	ND	1.73	75-125			QM-01
<b>Matrix Spike Dup (1122026-MSD1)</b>				Source: T213884-01 Prepared: 12/20/21 Analyzed: 12/22/21						
Cyanide (total)	ND	0.0050	mg/l	0.150	ND		75-125		30	QM-01

SunStar Laboratories, Inc.

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Joann Marroquin, Director of Operations

Sierra Analytical  
26052 Merit Cir. Ste. 105  
Laguna Hills CA, 92653

Project: 2112239  
Project Number: 2112239  
Project Manager: Rick Forsyth

**Reported:**  
12/22/21 14:46

### Notes and Definitions

- QM-01 The % recovery is outside of established control limits due to matrix interference and/or sample dilution due to matrix effect. The batch was accepted based on acceptable LCS recovery.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

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SunStar Laboratories, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

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Joann Marroquin, Director of Operations



**SUBCONTRACT ORDER**  
**Sierra Analytical Labs, Inc.**  
**Sierra Project #: 2112239**

T213887

Comments

**SENDING LABORATORY:**

Sierra Analytical Labs, Inc.  
 26052 Merit Circle, Suite 104  
 Laguna Hills, CA 92653  
 Phone: (949) 348-9389  
 Fax: (949) 348-9115  
 Laboratory Contact: Rick Forsyth (rickf@sierralabs.net)

Turn Around	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> 24 Hour
Time Requested:	<input type="checkbox"/> 48 Hour	<input type="checkbox"/> 72 Hour
	<input type="checkbox"/> 4 Day	<input type="checkbox"/> 5 Day

**RECEIVING LABORATORY:**

SunStar Laboratories - Lake Forest  
 25712 Commercentre Dr  
 Lake Forest, CA 92630  
 Phone : (949) 297-5020  
 Fax: (949) 297-5027

Analysis	Expires	Sampled:	Laboratory ID	Comments
Sample ID: Pond 3 Dis (2112239-01)	Liquid	12/15/21 12:15	01	
EPA 335.4-Cyanide	01/12/22 12:15			

*Containers Supplied:*  
 250 mL Poly - NaOH (H)

Special Instructions :

<input checked="" type="checkbox"/> Intact	<input type="checkbox"/> Sample Seals
<input checked="" type="checkbox"/> Properly Labeled	<input checked="" type="checkbox"/> Chilled TEMP (°C) <u>2.1</u>
<input checked="" type="checkbox"/> Appropriate Container	<input checked="" type="checkbox"/> Preservatives - Verified By <u>RS</u>

Relinquished By JK  
Relinquished By RS  
Relinquished By

12/17/21 1405  
 Date / Time  
12/17/21 1625  
 Date / Time  
 Date / Time

Received By RS  
Received By JK  
Received By

12.17.21 1405  
 Date / Time  
12/17/21 16:25  
 Date / Time  
 Date / Time



## SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: 7213887

Client Name: Sierra Project: 2112239

Delivered by:  Client  SunStar Courier  GLS  FedEx  UPS

If Courier, Received by: Dave Date/Time Courier Received: 12.17.21 1405

Lab Received by: Jennifer Date/Time Lab Received: 12.17.21 1625

Total number of coolers received: 1 Thermometer ID: SC-1 Calibration due :8/24/22

Temperature: Cooler #1 <u>2.0</u> °C +/- the CF (+0.1 °C) = <u>2.1</u>	°C corrected temperature
Temperature: Cooler #2 _____ °C +/- the CF ( _____ °C) = _____	°C corrected temperature
Temperature: Cooler #3 _____ °C +/- the CF ( _____ °C) = _____	°C corrected temperature
<b>Temperature criteria = ≤ 6°C (no frozen containers)</b>	Within criteria? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
<b>If NO:</b>	
Samples received on ice? <input type="checkbox"/> Yes	<input type="checkbox"/> No → <b>Complete Non-Conformance Sheet</b>
If on ice, samples received same day collected? <input type="checkbox"/> Yes → Acceptable	<input type="checkbox"/> No → <b>Complete Non-Conformance Sheet</b>

- Custody seals intact on cooler/sample  Yes  No\*  N/A
- Sample containers intact  Yes  No\*
- Sample labels match Chain of Custody IDs  Yes  No\*
- Total number of containers received match COC  Yes  No\*
- Proper containers received for analyses requested on COC  Yes  No\*
- Proper preservative indicated on COC/containers for analyses requested  Yes  No\*  N/A
- Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times  Yes  No\*

\* Complete Non-Conformance Receiving Sheet if checked Cooler/Sample Review - Initials and date: BS 12.17.21

**Comments:**  
\_\_\_\_\_  
\_\_\_\_\_

**WORK ORDER**

**T213887**

**Client:** Sierra Analytical  
**Project:** 2112239

**Project Manager:** Joann Marroquin  
**Project Number:** 2112239

**Report To:**

Sierra Analytical  
 Rick Forsyth  
 26052 Merit Cir. Ste. 105  
 Laguna Hills, CA 92653

Date Due: 12/29/21 17:00 (5 day TAT)

Received By: Jennifer Berger

Date Received: 12/17/21 16:25

Logged In By: Jennifer Berger

Date Logged In: 12/17/21 18:12

Samples Received at: **2.1°C**  
 Custody Seals No Received On Ice Yes  
 Containers Intact Yes  
 COC/Labels Agree Yes  
 Preservation Confirmed Yes

Analysis	Due	TAT	Expires	Comments
----------	-----	-----	---------	----------

**T213887-01 Pond 3 Dis (2112239-01) [Water] Sampled 12/15/21 12:15  
 (GMT-08:00) Pacific Time (US &**

Cyanide Total	12/29/21 15:00	5	12/29/21 12:15	
---------------	----------------	---	----------------	--

