



August 2, 2024

Mr. Jose Cortez
California Regional Water Quality Control Board
73-720 Fred Waring Drive, Suite 100
Palm Desert, California 92260

**Subject: "Region 2" Vulcan and Del Ranch (Hoch) Power Plants, Class II Holding Ponds
Semi-Annual Detection Monitoring Report for January - June 2024
Board Order No. R7-2022-0011, WDID No. 7A132033001 and 7A132040014**

Dear Mr. Cortez:

Attached is the Semi-Annual Detection Monitoring Report for "Region 2" Vulcan and Del Ranch (Hoch) Power Plant holding ponds, requirements of which are described in the Monitoring and Reporting Program (MRP), Board Order No. R7-2022-0011.

This semi-annual monitoring report has received appropriate technical review and approval by a California Registered Professional Geologist. Please see Attachment "G".

"I certify under the penalty of law that this document, including all attachments and supplemental information, was prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information submitted. I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment."

No violations have been identified since the submittal of the previous monitoring report in March 2024. Attachment "A" summarizes the permit conditions and our responses. If you have any questions, please contact Osvaldo Flores at (760) 348-4212 or by e-mail at Osvaldo.Flores@calenergy.com.

Sincerely,

Anoop Sukumaran
Director, Environmental Services

CALENERGY

OPERATING CORPORATION
7030 Gentry Road, Calipatria, California 92233
Phone: 760-348-4200 Fax: 760-348-7868

August 2, 2024
Board Order No. R7-2022-0011
Regional Board WDID No. 7A132033001 and 7A132040014
"Region 2" Vulcan and Del Ranch (Hoch) Power Plants

Attachments:

cc: Jose Aguirre – CalEnergy
Yanqiu Wu – CalEnergy
Osvaldo Flores – CalEnergy
Clare Steedman - Terraphase Engineering Inc
Environmental File

Region 2 Vulcan and Del Ranch (Hoch) Power Plants, Class II Holding Pond, Semi-Annual Detection Monitoring Report

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Attachment A

Summary of the Conditions and CalEnergy Responses

INTRODUCTION:

On April 12, 2022, CalEnergy Region 2, Vulcan and Del Ranch (Hoch) Power Plants adopted Board Order No. R7-2022-0011. The board order consists of Waste Discharge Requirements (WDR) and Monitoring and Reporting Program (MRP) which define waste discharge requirements arising from the operation of the facility’s Class II Surface Impoundments hereinafter referred to as the brine ponds. This Semi-annual Detection Monitoring Report covers the period between January and June 2024 (Reporting Period).

MRP PART II: SITE SPECIFIC MONITORING REQUIREMENTS

Site Specific Monitoring at the facility consists of groundwater monitoring, unsaturated/vadose zone monitoring, surface water monitoring, surface impoundment monitoring, evaluation monitoring and corrective action monitoring.

Groundwater monitoring wells are sampled and analyzed semi-annually. Sample collection, storage, and analysis are performed according to the most recent version of Standard U.S. Environmental Protection Agency methods, and in accordance with relevant internal standard operating procedures (SOP). All sample analyses are performed by laboratories approved by the State of California. Field sampling instruments and equipment are maintained and calibrated to ensure accuracy of measurements.

A. Groundwater Monitoring

Groundwater monitoring is being performed in agreement with Board Order R7-2022-0011.

A.1. Monitoring Well Locations

The current groundwater monitoring well network consist of detection monitoring wells MWV-1, MWV-2, MWV-3, MWV-4, MWV-6, MWV-7 and background monitoring well MWV-5.

A.2. Parameters/Constituents Monitored

CalEnergy submitted the Sample Collection and Analysis Plan (SCAP) to the Regional Water Quality Control Board on July 11, 2022. The SCAP discusses monitoring techniques, methods, frequency, parameters, constituents of concern and other site-specific monitoring criteria specified in the MRP. Following are Constituents of Concern (COCs) and field parameters monitored semi-annually:

Table 1: Semi-Annual Field Parameters and COCs

Parameter	Unit	Method	Reporting Frequency
Field Monitoring Parameters			
pH	pH units	Field Measurement	Semi-annual
Groundwater Elevation	Feet above sea level (USGS Datum)	Field Measurement	Semi-annual
Depth to the bottom of the well	Feet below elevation datum	Field Measurement	Semi-annual
Groundwater Density	kg/l	Field Measurement	Semi-annual
Specific Conductance	Micromhos/cm	Field Measurement	Semi-annual

Parameter	Unit	Method	Reporting Frequency
Temperature	Degrees F	Field Measurement	Semi-annual
Turbidity	NTU	Field Measurement	Semi-annual
Dissolved Oxygen	mg/L and percent saturation	Field Measurement	Semi-annual
Oxygen-Reduction Potential (ORP)	mV	Field Measurement	Semi-annual
Lab Monitoring Parameters			
Total Dissolved Solids	mg/L	SM 2540C	Semi-annual
Arsenic	µg/L	EPA 200.8	Semi-annual
Barium	µg/L	EPA 200.8	Semi-annual
Cadmium	µg/L	EPA 200.8	Semi-annual
Lead	µg/L	EPA 200.8	Semi-annual
Zinc	µg/L	EPA 200.8	Semi-annual
Oil & Grease	mg/L	EPA 1664B	Semi-annual

Note: NTU = nephelometric turbidity units, mg/L = milligrams per liter, mV = millivolts, µg/L = micrograms per liter, SM = standard method, EPA = United States Environmental Protection Agency

A.3. 5-Year COC Constituents Monitored

The 5- Year COC Monitoring Report was submitted in March of 2023. The next report is due to the agency in 2028. Following are the 5-Year Constituents of Concern (COCs) monitored every five years at the facility:

Parameter	Unit	Method	Reporting Frequency
Lab Monitoring Parameters			
Calcium	mg/L	EPA 200.7	Every 5 Years
Magnesium	mg/L	EPA 200.7	Every 5 Years
Sodium	mg/L	EPA 200.7	Every 5 Years
Potassium	mg/L	EPA 200.7	Every 5 Years
Sulfate	mg/L	EPA 200.7	Every 5 Years
Chloride	mg/L	EPA 200.7	Every 5 Years
Bicarbonate	mg/L	EPA 200.7	Every 5 Years
Carbonate	mg/L	EPA 200.7	Every 5 Years
Alkalinity	mg/l	SM 2320B	Every 5 Years
Total Petroleum Hydrocarbons	mg/L	EPA 200.7	Every 5 Years
CAM 17 Heavy Metals	mg/L	EPA 200.7	Every 5 Years
Semi Volatile Organic Compounds	mg/L	EPA 200.7	Every 5 Years
Volatile Organic Compounds	mg/L	EPA 200.7	Every 5 Years

Note: mg/L = milligrams per liter, µg/L = micrograms per liter, SM = standard method, EPA = United States Environmental Protection Agency

B. Unsaturated Zone Monitoring

Unsaturated/vadose zone action monitoring program is not required at this time.

C. Surface Water Monitoring

There are no perennial streams located at the facility. No significant storm events or seeps were observed during the Reporting Period.

D. Surface Impoundment Monitoring

D.1.a – D.1.d. Pond Capacity Monitoring

No significant signs of erosion, settlement, and/or subsidence were observed during Reporting Period. No recordable seismic events occurred during the Reporting Period. For information on available freeboard, analytical evaluation of brine pond contents and the waste volume removed from the brine ponds during the Reporting Period, please reference Part IV, Sections A.1.i. (Sludge/Solids Evaluation) and A.1.j. (Waste Volume) of this report.

D.2. Geothermal Solids Monitoring

See Part IV, Sections A.1.i. and A.1.j.

D.3. Geothermal Wastewater

Solid and liquid samples from the brine ponds were collected on 16 February 2024 and 23 February 2024, respectively. Please refer to the report's Part IV, Section A.1.i. and A.1.j (Sludge/Solids Evaluation & Waste Volumes) for tabulated summary.

D.4. LCRS Monitoring

Please refer to Part IV, Section A.1.h. Leachate Evaluation, Tables 3 and 3a. for system evaluation and tabulated summaries of removal and monitoring activities.

E. Evaluation of Monitoring

E.1 Notification of a Release

There were no releases from the brine ponds during the reporting period. In addition, no leaks or failures in the pipelines carrying geothermal brine exceeding 150 gallons occurred during the Reporting Period.

E.2 Evaluation of a Release

Permit condition is not applicable at present.

E.3 Excessive Leachate Production

Leakage rates were below the reporting threshold (RT) of 300 gallons per day (Please refer to Part IV, Section A.1.h. Leachate Evaluation and Table 3 of the report for additional monitoring details).

F. Corrective Action Monitoring

Corrective action monitoring is not required at this time.

MRP PART III: EVALUATION OF MONITORING DATA

Terraphase Engineering on behalf of CalEnergy, prepared a report titled *Concentration Limit Recommendations Report* submitted in March 2023. The report evaluated groundwater historical field data to derive concentration limits via "statistical evaluation to estimate the upper-end and as needed, the lower end of the background concentration for each COC in each well". The proposed predictive limits have been used to evaluate the groundwater monitoring data obtained for this reporting period.

MRP PART IV: REPORTS TO BE FILED WITH THE REGIONAL WATER BOARD

A. Required Reports

A.1. Semi Annual Monitoring Reports

Requirement is being met with this submittal for the Reporting Period.

A.1.a. Topographic Map

A map and supporting documents identifying the surface impoundments and current monitoring points MWV-1, MWV-2, MWV-3, MWV-4, MWV-6, MWV-7 and upgradient/background monitoring point MWV-5, groundwater elevation and flow direction are being included in Attachment B.

Reported groundwater velocity and direction of flow were calculated using the water level elevations taken for this reporting period. Region 2 Vulcan and Del Ranch (Hoch) Power Plants are located within the Salton Trough. The Salton Sea is approximately maintained at a stage of -230 ft Mean Sea Level (MSL).

Groundwater elevation data from seven (7) site monitoring wells was used to calculate groundwater gradient at Region 2 facilities. Gradient magnitude and flow direction were calculated by utilizing the hydraulic gradient calculator available on the Environmental Protection Agency website (www.epa.gov).

The following equation was used to determine the velocity of the groundwater flow:

$$v = - Ki/ne$$

Where:

v = velocity of groundwater flow
K = hydraulic conductivity
i = hydraulic gradient
n_e = effective porosity

- Graphical presentation has been included in Attachment B

A.1.b. Groundwater Elevations

Starting groundwater elevation is measured with a portable water level indicator. Total well depth, post sampling ending ground water levels and groundwater density are also measured semi-annually. Field measurements are recorded on the Ground water Sampling Record (Attachment C).

A.1.c. Field Logs

Groundwater from the monitoring wells is sampled utilizing a peristaltic pump. The dedicated 1/2-inch tubing of the monitoring well is connected to the 3/8-inch peristaltic pump tubing using a plastic reducer. The peristaltic pump is set at a low flow speed of approximately 250 ml/minute to minimize sample agitation or turbulence. The well is purged for at least five (5) minutes to remove any stagnant water present in the dedicated monitor well tubing. Purge water is collected in a five-gallon bucket and then the liquid is placed in the brine pond.

Groundwater pH, conductivity, turbidity, dissolved oxygen (DO), oxidation-reduction potential (ORP) and temperature measurements are performed in the field. Samples are collected in a sample cup, where pH, conductivity, turbidity, DO, ORP and temperature are measured to obtain the required readings. All meters are calibrated prior to each sampling event. DO and ORP were monitored this reporting period.

- A Symphony pH meter, calibrated with 4 and 7 pH buffers, is used for pH measurements. A Hach IntelliCAL MTC probe was used to measure ORP.
- A Symphony conductivity meter calibrated using a 100 milli-siemens per centimeter standard is used for conductivity measurements.
- Turbidity measurements are conducted on a ThermoFisher Orion AQ4500 Portable Turbidimeter which is calibrated using cuvettes filled with 0.02, 20.0, 100 and 800 NTU standards. A Hach IntelliCAL LDO101 LDO probe was used to measure DO.
- Per the SCAP submitted in July 2022, water density measurement will be conducted on a Mettler Toledo DensitoPRO density meter calibrated using standard solution.

The water level in the wells is measured by a Solinst Portable Water Level Indicator. The total depth of the wells is also recorded at every sampling event. Groundwater Sampling Records are being included with report as Attachment C.

A.1.d. Data Tables

Lab analysis reports and cumulative groundwater laboratory results for MWV-1, MWV-2, MWV-3, MWV-4, MWV-5, MWV-6 and MWV-7 have been summarized in Attachment D.

A.1.e. Graphical Display

There are no monitoring wells undergoing corrective action or evaluatory monitoring.

A.1.f. Summary of Groundwater Conditions

No structural modifications were made to the groundwater monitoring system during the Reporting Period. Relative to the previous reporting period, direction of groundwater flow and ground water velocity differed in this manner:

- Direction of groundwater flow veered slightly west from 325.3 degrees NNW to 318.5 degrees NW.
- Ground water flow velocity decreased to 0.64 ft./year from 1.30 ft./year.

A.1.g. Evaluation of Groundwater Data

The results of the monitored COCs were compared to the recommended intra-well, 99% upper prediction limits (UPL) proposed in the “Concentration Limit Recommendations Report” submitted in March 2023. Excluding pH in MWV-1, specific conductance and TDS in MWV-3, specific conductance, TDS, barium and lead in MWV-4, specific conductance, and barium in MWV-5, and turbidity in MWV-6, monitoring samples yielded concentrations or values for metals and field parameters within range and below the upper prediction limit.

As reported in August 2023, monthly samples were collected at MWV-5 from April through December 2023. Data gathered from this effort was transmitted to a third-party environmental firm for review and professional evaluation. A report was submitted in March 2024 summarizing key findings from this investigation.

Table 2- Monitoring well results. Constituent concentrations above the 99th upper predictive limit.

Monitoring Well	Constituent of Concern/Field Parameter	Monitoring Well Result	99 th Upper Prediction Limit
MWV-1	pH	6.61	6.60
MWV-3	Specific Conductance (µS/cm)	32,100	26,000
MWV-3	TDS (mg/l)	22,130	18,000
MWV-4	Specific Conductance (µS/cm)	57,600	55,000
MWV-4	TDS (mg/l)	41,520	39,000
MWV-4	Barium (mg/l)	0.3030	0.23
MWV-4	Lead (mg/l)	0.2540	0.10
MWV-5	Specific Conductance (µS/cm)	12,020	6,200
MWV-5	Barium (mg/l)	0.2990	0.14
MWV-6	Turbidity	336	310
MWV-6 (Dup)	Turbidity	339	310

A.1.g.i Evaluation of 5 -Year COC Groundwater Data

The 5- Year COC Monitoring Report was submitted in March of 2023. The next report is due to the Colorado River Regional Quality Control Board in 2028.

A.1.h. Leachate Evaluation

In accordance with Part II: Site Specific Monitoring Requirements, Section D.4.a. – D.4.g. of the MRP: The Vulcan brine pond LCRS appears to be functioning properly. Leachate removal was performed successfully throughout the Reporting Period. Bi- weekly in-person checks of the LCRS are appropriate as determined by the amount of leachate removed from the LCRS. Presently, the LCRS leachate removal is manual. Automatic removal is not necessary because the amount of leachate being generated by the brine pond is manageable with current removal practices.

Historically the Del Ranch (Hoch) brine pond has not generated leachate, a trend that continued until September 2023 when liquid was first observed at TW-1. In keeping with the MRP, the liquid from TW1 was analyzed and the results submitted in March 2024. Per Table 3 and 3a weekly removal of leachate has been consistent throughout this reporting period.

In the event of sustained increases in the generation of leachate that render in-person monitoring impractical or if an exceedance of the reporting threshold of 300 gallons per 24- hour period were to occur, the installation of automatic monitoring and leachate removal equipment is to be explored in consultation with the Regional Water Quality Control Board. No workplans proposing changes to the LCRS monitoring system were prepared during the reporting period. Please refer to Attachment E for laboratory results and LCRS monitoring sheets.

Monitoring of the brine ponds continue as required by the permit.

Table 3 – Leachate Evaluation

Weekly Removal - Vulcan	Jan 5, 12, 19, 26, 2024		Feb 2, 09, 16, 23, 2024		Mar 1, 8, 15, 22, 29, 2024	
	Volume (gals.)	Daily Rate (gals. / day)	Volume (gals.)	Daily Rate (gals. / day)	Volume (gals.)	Daily Rate (gals. / day)
1	0	0	10	1.43	0	0
2	5	0.71	0	0	0	0
3	1	0.14	0	0	0	0
4	0	0	0	0	0	0
5	N/A	N/A	N/A	N/A	0	0
Weekly Removal – Hoch TW1	Jan 5, 12, 19, 26, 2024		Feb 2, 09, 19, 23, 2024		Mar 1, 8, 15, 22, 29, 2024	
	Volume (gals.)	Daily Rate (gals. / day)	Volume (gals.)	Daily Rate (gals. / day)	Volume (gals.)	Daily Rate (gals. / day)
1	105	15.00	205	29.29	200	28.57
2	115	16.43	205	29.29	125	17.86
3	95	13.57	235	23.50	145	20.71
4	115	16.43	155	38.75	110	15.71
5	N/A	N/A	N/A	N/A	125	17.86

Weekly Removal - Vulcan	Apr 5, 12, 19, 26, 2024		May 3, 10, 17, 24, 31, 2024		June 7, 14, 21, 28, 2024	
	Volume (gals.)	Daily Rate (gals. / day)	Volume (gals.)	Daily Rate (gals. / day)	Volume (gals.)	Daily Rate (gals. / day)
1	0	0	10	1.43	75	10.71
2	60	8.57	20	2.86	140	20.00
3	50	7.14	100	14.29	5	0.71
4	95	12.96	10	1.43	185	26.43
5	N/A	N/A	135	19.29	N/A	N/A
Weekly Removal – Hoch TW1	Apr 5, 12, 19, 26, 2024		May 3, 10, 17, 24, 31, 2024		June 7, 14, 21, 28, 2024	
	Volume (gals.)	Daily Rate (gals. / day)	Volume (gals.)	Daily Rate (gals. / day)	Volume (gals.)	Daily Rate (gals. / day)
1	160	22.86	190	27.14	135	19.29
2	120	17.14	175	25.00	200	28.57
3	135	19.29	180	25.71	135	19.29
4	140	20.00	170	24.29	130	18.57
5	N/A	N/A	130	18.57	N/A	N/A

Table 3a – LCRS Monitoring (Quarterly pH and Specific Conductivity Readings)

Other Monitoring Requirements	Monitoring Frequency			
	Q1 2024	Q2 2024	Q3 2024	Q4 2024
Vulcan Brine Pond LCRS - pH	Dry*	7.16	TBD	TBD
Vulcan Brine Pond LCRS - Specific Conductivity $\mu\text{S}/\text{cm}$	Dry*	205,800	TBD	TBD
Hoch Brine Pond TW-1 - pH	5.49	5.05	TBD	TBD
Hoch Brine Pond TW-1 – Specific Conductivity $\mu\text{S}/\text{cm}$	237,000	231,000	TBD	TBD

*Vulcan LCRS system did not produce any measurable amounts of leachate after the first week of February.

A.1.i. (Sludge/Solids Evaluation) & A.1.j. (Waste Volume)

CalEnergy Operating Corporation (CalEnergy) maintained required freeboard level at the Region 2 brine ponds during monitoring period. CalEnergy remains focused on removing solids throughout the year as shown in Table 4a – Brine Pond Solids Monitoring. No permit compliance issues are being noted that have resulted in the issuance of a notice of violation.

In accordance with Part II: Site Specific Monitoring Requirements, Section D.2.a. and D.3.a. of the RMP:

Table 4a – Brine Pond Solids Monitoring

Del Ranch (Hoch) Brine Pond Monitoring	Jan	Feb	Mar	Apr	May	June
Estimated volume of solid/liquid in holding pond (ft ³)	88,250	168,182	88,250	141,501	88,250	88,250
Measurement of freeboard (ft.)	5.0	2.0	5.0	3.0	5.0	5.0

Del Ranch (Hoch) Brine Pond Monitoring	Jan	Feb	Mar	Apr	May	June
Volume of solids removed and disposed off-site (tons)	0	500.62	0	591.65	348.92	364.09
Average and maximum (/) monthly volume of water discharged into pond (1000 gals.) *						
Average and maximum (/) daily volume of water removed from pond (1000 gals.) *						
Vulcan Brine Pond Monitoring	Jan	Feb	Mar	Apr	May	June
Estimated volume of solid/liquid in holding pond (ft ³)	68,395	77,506	32,062	47,183	47,183	47,183
Measurement of freeboard (ft.)	2.6	2.0	5.0	4.0	4.0	4.0
Volume of solids removed and disposed off-site (tons)	75.85	60.68	0	151.70	227.56	0
Average and maximum (/) monthly volume of water discharged into pond (1000 gals.) *						
Average and maximum (/) daily volume of water removed from pond (1000 gals.) *						

*Monthly/daily volumes cannot be estimated. Discharges only occur during non-routine unmetered events such as emergency shut-downs, process train upsets or plant start-ups.

Table 4b – Brine Pond Solids Monitoring

Reporting Period	Sample Type	Sample Matrix	Constituents	Analytical Results
Vulcan Q1Q2 2023	Grab	Brine Pond Solids	Arsenic (ug/kg)	375,000
			Barium (ug/kg)	738,000
			Cadmium (ug/kg)	5,010
			Lead (ug/kg)	141,000
			Zinc (ug/kg)	218,000
Del Ranch Q1Q2 2023	Grab	Brine Pond Solids	Arsenic (ug/kg)	954,000
			Barium (ug/kg)	2,340,000
			Cadmium (ug/kg)	2,880
			Lead (ug/kg)	248,000
			Zinc (ug/kg)	468,000

Table 4c – Geothermal Wastewater Monitoring (Brine Pond)

Reporting Period	Sample Type	Sample Matrix	Field Parameter/Constituents	Vulcan Brine Pond Analytical Results	Del Ranch (Hoch) Brine Pond Analytical Results
Q1Q2 2024	Semi-Annual Composite	Brine Pond Liquid	pH	6.20	7.24
	Semi-Annual Composite		Total Dissolved Solids (mg/l)	55,000	6,690
	Semi-Annual Composite		Specific Conductance (uS/cm)	74,700	12,750
	Semi-Annual Grab		Arsenic (ug/l)	<1020	135
			Barium (ug/l)	19,600	928
			Cadmium (ug/l)	319	22.0
			Lead (ug/l)	<700	<35.0
			Zinc (ug/l)	25,900	3,550
	Annual Composite		Calcium (mg/l)	5,150	621
			Magnesium (mg/l)	17.1	9.84
			Sodium (mg/l)	11,000	1,400
			Potassium (mg/l)	2,780	383
			Sulfate (mg/l)	460	260
			Chloride (mg/l)	40,000	3,900
			Bicarbonate HCO ₃ (mg/l)	<24.0	400
			Carbonate (CO ₃)	<20.0	<20.0
			Total Alkalinity as CaCO ₃ (mg/l)	<20.0	330

*Analyte detected below quantitation limits.

Table 4a above summarizes monthly freeboard measurements, in-place volume, inflows/outflows, and volume of solids removed from the facility for offsite disposal. Solids removed from the surface impoundment were sent to Republic Services Copper Mountain Landfill, 34853 E. County 12th St., Wellton, AZ 85356 or Clean Harbors Buttonwillow, LLC, 2500 West Lokern Road, Buttonwillow, CA 93206. Complete laboratory reports for brine pond solids and liquids are enclosed in Attachment F.

End of Report -

Attachment B

Groundwater Velocity and Direction - Monitoring Point
Location

**Region 2 Vulcan & Del Ranch (Hoch) Power Plants
Holding Pond and Wellfield Basins**

**Ground Water Flowrate
January through June 2024**

The average linear velocity of groundwater flow (v) is a function of hydraulic conductivity (K), hydraulic gradient (i), and effective porosity (n_e):

$$v = - Ki/n_e$$

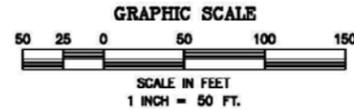
v	=	-	K	*	i	/	n _e
m/s			m/s				
6.19E-09			1.00E-06		0.00272		0.44

0.64 ft/y



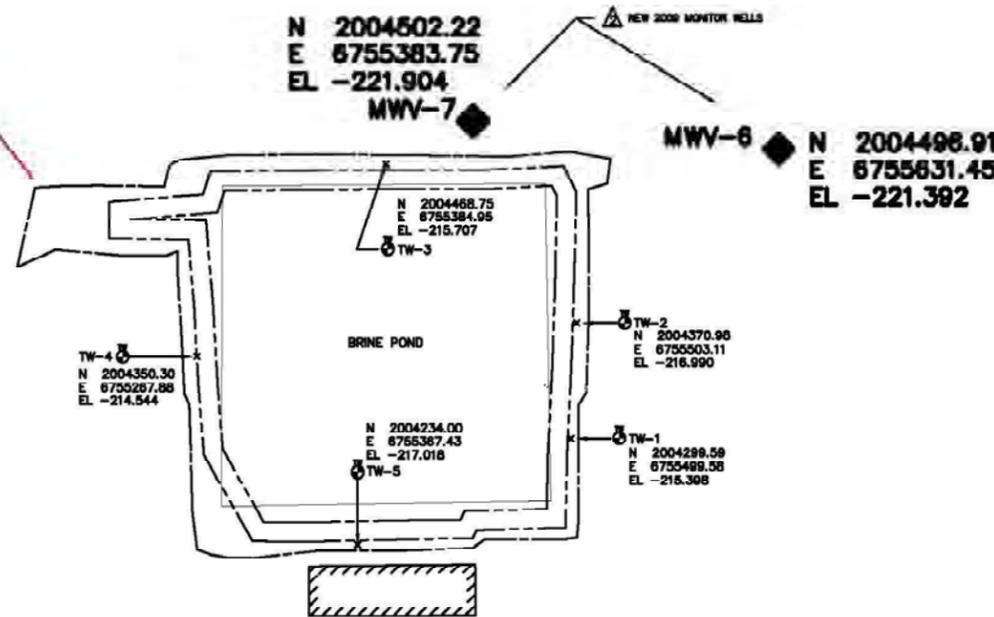
Ground water flow direction as degrees from North: 318.5

HOCH PLANT



LEGEND

	SECTION LINE
	TOE
	TOP
	BUILDING
	MONITOR WELL W/ LABEL



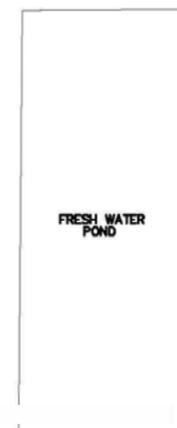
BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE GRID BEARING OF NORTH 02°17'10" WEST BETWEEN CORS STATION MONUMENT PEAK AND PINON 1 POGA USING NAD83 (CORS) SPC CA 6 PUBLISHED VALUES AS SHOWN BELOW.

POINT	LATITUDE	LONGITUDE	NORTHING (GRID)	EASTING (GRID)	U.S. SURVEY FEET
PINON 1 POGA	33°38'43.74538" N	116°27'29.32638" W	660,326.84 METERS	1,890,684.17 METERS	(2,166,428.85 U.S. SURVEY FEET) (6,498,294.68 U.S. SURVEY FEET)
MONUMENT PEAK	32°53'30.90538" N	116°28'20.40303" W	580,447.46 METERS	1,863,875.48 METERS	(1,904,301.38 U.S. SURVEY FEET) (6,508,764.74 U.S. SURVEY FEET)

BASIS OF ELEVATION

THE BASIS OF ELEVATION FOR THIS SURVEY IS A 3-1/2" BRASS CAP STAMPED CP WH-A IN CONCRETE ±100' NORTH OF THE NORTHWEST CORNER OF THE CONTROL BUILDING AT THE HOCH PLANT AND IS BASED ON A MEASURED ORTHOMETRIC HEIGHT FROM CORS STATIONS BLYTHE, PINON 1, AND MONUMENT PEAK WITH AN ELEVATION OF -220.341 U.S. SURVEY FEET.



N 2003893.14
E 6755128.92
EL -220.831
MWV - 3

N 2003895.87
E 6755883.52
EL -217.040
MWV - 5



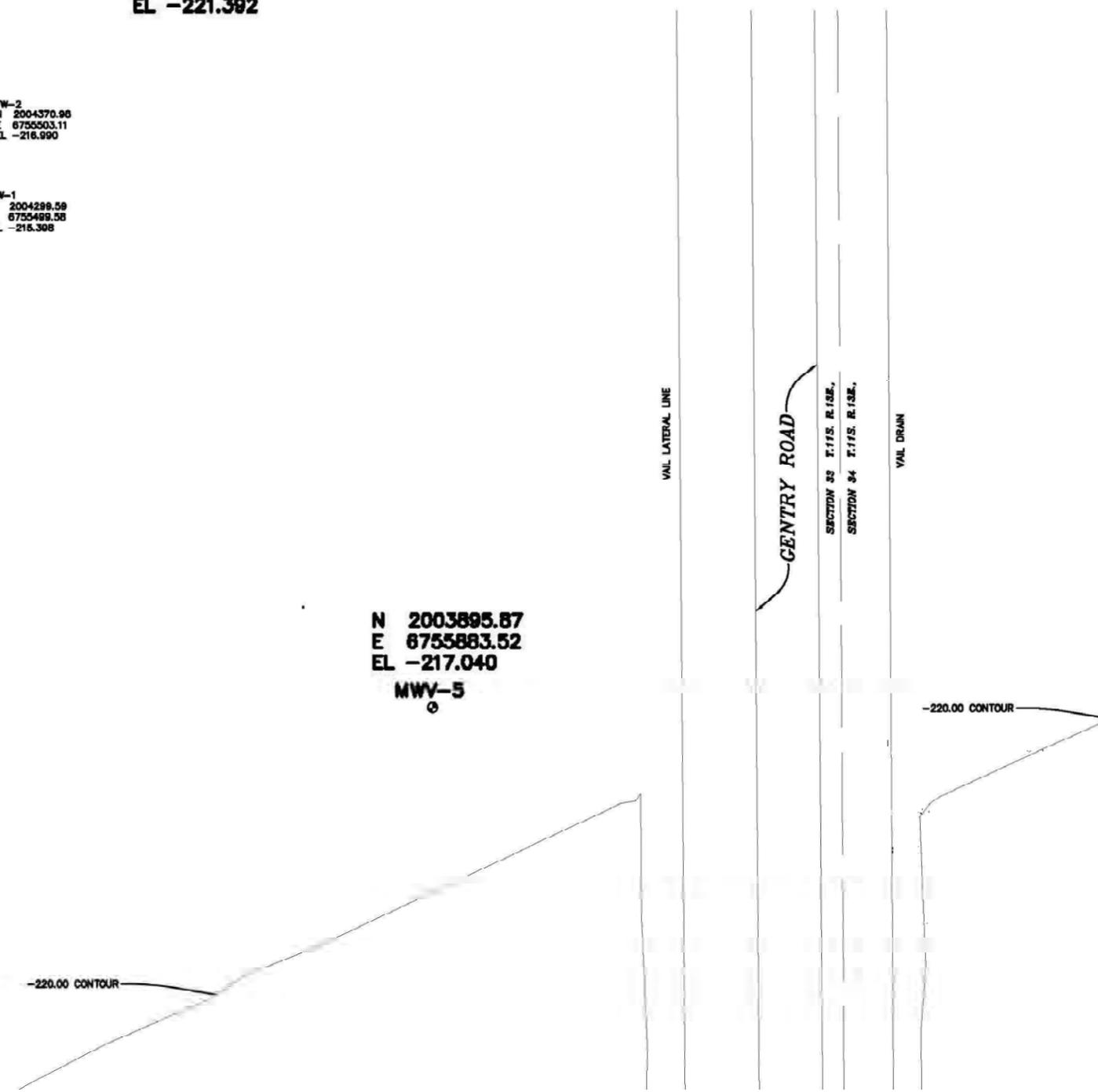
N 2003781.34
E 6755285.30
EL -220.481
MWV - 4

MWV - 2
N 2003773.70
E 6754831.92
EL -217.397

MWV - 1
N 2003724.85
E 6755072.90
EL -218.898

LEACHATE COLLECTION
REMOVAL SYSTEM

VULCAN PLANT



TRI STATE SURVEYING, LTD
1925 E. PRATER WAY
SPARKS, NEVADA 89434
(775) 358-9491 • FAX 358-3664

MONITOR WELL SURVEY
RPP-07-57
CAL ENERGY OPERATING CORPORATION
SITUATE IN A PORTION OF SECTION 33
OF TOWNSHIP 11 SOUTH, RANGE 13 EAST,
IMPERIAL COUNTY CALIFORNIA

APPROVED BY: LHS DATE: 07/22/2008
CHECKED BY: BSL DATE: 07/22/2008
DRAWN BY: CWV
REVISIONS: 4

4 OF 6



EPA On-line Tools for Site Assessment Calculation

Hydraulic Gradient -- Magnitude and Direction

Gradient Calculation from fitting a plane to as many as thirty points

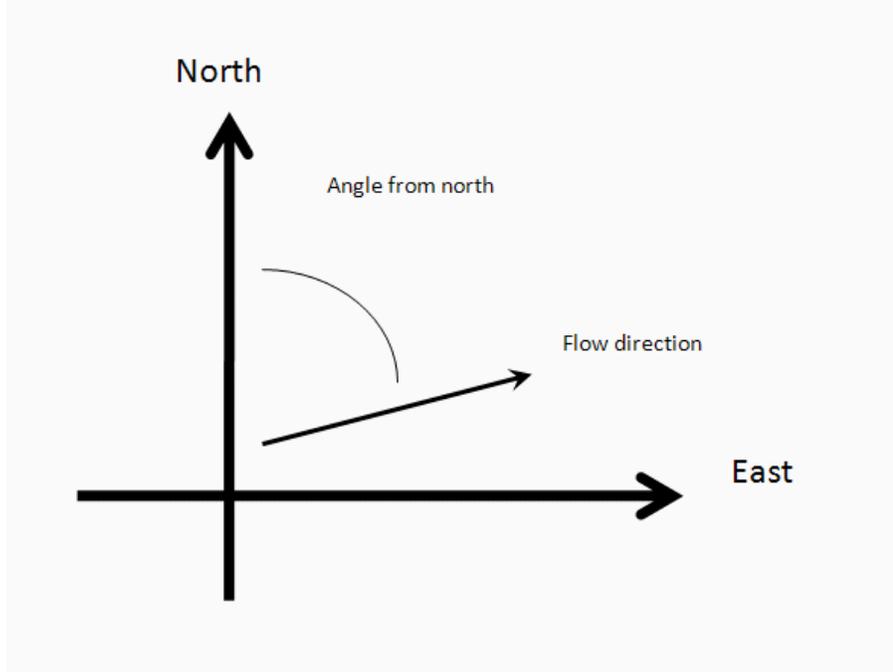
$$\begin{aligned}
 a x_1 + b y_1 + c &= h_1 \\
 a x_2 + b y_2 + c &= h_2 \\
 a x_3 + b y_3 + c &= h_3 \\
 &\dots \\
 a x_{30} + b y_{30} + c &= h_{30}
 \end{aligned}$$

where (x_i, y_i) are the coordinates of the well and h_i is the head

$i = 1, 2, 3, \dots, 30$

The coefficients a, b, and c are calculated by a least-squares fitting of the the data to a plane

The gradient is calculated from the square root of $(a^2 + b^2)$ and the angle from the arctangent of a/b or b/a depending on the quadrant



Inputs

Example Data Set 1 | Example Data Set 2 | Calculate | Clear

Save Data | Recall Data | Go Back

Site Name: Region 2 GW Monitoring

Date: 4/24/2024 | Current Date

Calculation basis: Head

Coordinates: ft

I.D.	x-coordinate	y-coordinate	head	ft
1) MWV-1	6755072.90	2003724.65	-230.44	
2) MWV-2	6754831.92	2003773.70	-230.51	
3) MWV-3	6755128.92	2003893.14	-231.06	
4) MWV-4	6755265.30	2003781.34	-230.48	
5) MWV-5	6755883.52	2003895.87	-229.09	
6) MWV-6	6755631.45	2004496.91	-231.00	
7) MWV-7	6755383.75	2004502.22	-231.41	
8)				
9)				
10)				
11)				
12)				
13)				
14)				
15)				
16)				

17)				
18)				
19)				
20)				
21)				
22)				
23)				
24)				
25)				
26)				
27)				
28)				
29)				
30)				

Results

Number of Points Used in Calculation	7
Max. Difference Between Head Values	0.7071
Gradient Magnitude (i)	0.002723
Flow direction as degrees from North (positive y axis)	318.5
Coefficient of Determination (R ²)	0.854

Attachment C

Field Testing Results

Ground Water Sampling Record

Logbook # 30

Quality Control Section

pH Calibration Logbook: 15 pg 24
 Conductivity Calibration Logbook: 7 pg 8
 Turbidity Calibration Logbook: 3 pg 17

Sampler/Analyst: R Lee
 Date: 4-22-24
 LIMS #: 2404029-001

Stability Criteria:

pH: ±0.10
 Temperature: ±2%
 Conductivity: ±2%
 Turbidity: Turbidity has been reduced to 10 NTUs or the lowest practical achievable.

Facility: Vol R2
 Well Type: Monitor Well
 Well Number: MWV-1

Starting Water Level (ft TOC): 11.54
 Ending Water Level (ft TOC): 12.59
 Total Depth (ft TOC): 24.59

Sampling Measurements

Time	Vol. (gal)	Temp. (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Dissolved Oxy. (mg/L)	ORP (mV)	Density (g/cm³)
1059	Start Purge							
1104	0.5	31.3	6.60	21,840	13.9			
1109	1.0	31.5	6.58	22,900	7.84			
1114	1.5	31.8	6.61	23,000	1.89	3.69	102.5	1.0066
RPD								
QC Check								
QC Rec.								

Sample Inventory

Sample Collection Time	Volume (ml)	Bottle Type	Quantity	Preserved	Preserved with	Filtered w/ 0.45 µm	Sample Appearance	
							Color	Turbidity & Sediments
1114	1000	Amber		Yes	HCl	No	Clear	NONE
	1000	Glass	1	Yes	HCl	No		
	1000	Plastic		No	-	No		
	500	Plastic	1	Yes	HNO ₃	Yes		
	250	Plastic		Yes	HNO ₃	Yes		
	500 250	Plastic	2	No	-	No		
	40	Vial		Yes	HCl	No		

Purging Equipment: Peristaltic Pump
 Sampling Equipment: Peristaltic Pump
 Disposal of Discharge Water: Brine Pond

Observations/Comments: _____

Supervisor Signature: [Signature]

Ground Water Sampling Record

Logbook # 30

Quality Control Section

pH Calibration Logbook: 15 pg 24
 Conductivity Calibration Logbook: 7 pg 8
 Turbidity Calibration Logbook: 3 pg 17

Sampler/Analyst: R. Lee
 Date: 4-22-24
 LIMS #: 2404029-002 / 2404029-001
~~2404029-008~~ DUP DJ
 Facility: UOI R2
 Well Type: Monitor Well
 Well Number: MWV-2

Stability Criteria:

pH: ±0.10
 Temperature: ±2%
 Conductivity: ±2%
 Turbidity: Turbidity has been reduced to 10 NTUs or the lowest practical achievable.

Starting Water Level (ft TOC): 13.11
 Ending Water Level (ft TOC): 14.28
 Total Depth (ft TOC): 24.64

Sampling Measurements

Time	Vol. (gal)	Temp. (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Dissolved Oxy. (mg/L)	ORP (mV)	Density (g/cm³)
<u>940 Start Purge</u>								
<u>945</u>	<u>0.5</u>	<u>30.9</u>	<u>6.53</u>	<u>23,400</u>	<u>11.2</u>			
<u>950</u>	<u>1.0</u>	<u>30.8</u>	<u>6.71</u>	<u>23,500</u>	<u>6.99</u>			
<u>955</u>	<u>1.5</u>	<u>30.7</u>	<u>6.70</u>	<u>23,200</u>	<u>4.85</u>	<u>4.66</u>	<u>109.5</u>	<u>1.0068</u>
<u>955 DUP</u>	<u>1.5</u>	<u>30.7</u>	<u>6.71</u>	<u>23,200</u>	<u>4.70</u>	<u>5.01</u>	<u>109.4</u>	<u>1.0067</u>
RPD		<u>0</u>	<u>0.1</u>	<u>0</u>	<u>3.1</u>	<u>7.2</u>	<u>0.1</u>	<u>0.0</u>
QC Check								
QC Rec.								

Sample Inventory

Sample Collection Time	Volume (mL)	Bottle Type	Quantity	Preserved	Preserved with	Filtered w/ 0.45 µm	Sample Appearance	
							Color	Turbidity & Sediments
<u>955</u>	<u>1000</u>	<u>Amber</u>		<u>Yes</u>	<u>HCl</u>	<u>No</u>	<u>Clear</u>	<u>NONE</u>
	<u>1000</u>	<u>Glass</u>	<u>1 IDUP</u>	<u>Yes</u>	<u>HCl</u>	<u>No</u>		
	<u>1000</u>	<u>Plastic</u>		<u>No</u>	<u>-</u>	<u>No</u>		
	<u>500</u>	<u>Plastic</u>	<u>1 IDUP</u>	<u>Yes</u>	<u>HNO3</u>	<u>Yes</u>		
	<u>250</u>	<u>Plastic</u>		<u>Yes</u>	<u>HNO3</u>	<u>Yes</u>		
	<u>500</u> 250	<u>Plastic</u>	<u>2 2DUP</u>	<u>No</u>	<u>-</u>	<u>No</u>		
	<u>40</u>	<u>Vial</u>		<u>Yes</u>	<u>HCl</u>	<u>No</u>		

Purging Equipment: Peristaltic Pump
 Sampling Equipment: Peristaltic Pump
 Disposal of Discharge Water: Brine Pond

Observations/Comments: ORP = 224.6 19.6°C
PO-CAL pass 8.98 19.1°C
Density = 0.9980 g/cm³
Blank collected @ 805

Supervisor Signature: [Signature]

Ground Water Sampling Record

Logbook # 30

Quality Control Section

pH Calibration Logbook: 15 pg 29
 Conductivity Calibration Logbook: 7 pg 8
 Turbidity Calibration Logbook: 3 pg 17

Sampler/Analyst: R. Lee
 Date: 4-22-24
 LIMS #: 2404029-003

Stability Criteria:

pH: ±0.10
 Temperature: ±2%
 Conductivity: ±2%
 Turbidity: Turbidity has been reduced to 10 NTUs or the lowest practical achievable.

Facility: Vol R2
 Well Type: Monitor Well
 Well Number: MWU-3

Starting Water Level (ft TOC): 10.23
 Ending Water Level (ft TOC): 11.06
 Total Depth (ft TOC): 25.40

Sampling Measurements

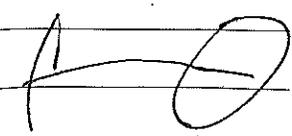
Time	Vol. (gal)	Temp. (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Dissolved Oxy. (mg/L)	ORP (mv)	Density (g/cm³)
238	start purge							
243	0.5	34.1	6.71	32,300	8.52			
248	1.0	32.4	6.73	32,000	6.60			
253	1.5	33.0	6.71	32,100	4.47	5.83	-57.6	1.0118
RPD								
QC Check		21.4	7.05	10,060	10.4	8.90	225.2	1.0011
QC Rec.			100.7	100.6	104			100.1

Sample Inventory

Sample Collection Time	Volume (mL)	Bottle Type	Quantity	Preserved	Preserved with	Filtered w/ 0.45 µm	Sample Appearance	
							Color	Turbidity & Sediments
253	1000	Amber		Yes	HCl	No	Clear	NONE
	1000	Glass	1	Yes	HCl	No		
	1000	Plastic		No	-	No		
	500	Plastic	1	Yes	HNO ₃	Yes		
	250	Plastic		Yes	HNO ₃	Yes		
	500 250	Plastic	2	No	-	No		
	40	Vial		Yes	HCl	No		

Purging Equipment: Peristaltic Pump
 Sampling Equipment: Peristaltic Pump
 Disposal of Discharge Water: Brine Pond

Observations/Comments: _____

Supervisor Signature: 

Ground Water Sampling Record

Logbook # 30

Quality Control Section

pH Calibration Logbook: 15 pg 24
 Conductivity Calibration Logbook: 7 pg 8
 Turbidity Calibration Logbook: 3 pg 17

Sampler/Analyst: R Lee
 Date: 7-22-24
 LIMS #: 2404029-004

Stability Criteria:

pH: ±0.10
 Temperature: ±2%
 Conductivity: ±2%
 Turbidity: Turbidity has been reduced to 10 NTUs or the lowest practical achievable.

Facility: Vul R2
 Well Type: Monitor Well
 Well Number: MWV-4

Starting Water Level (ft TOC): 10.02
 Ending Water Level (ft TOC): 11.30
 Total Depth (ft TOC): 20.28

Sampling Measurements

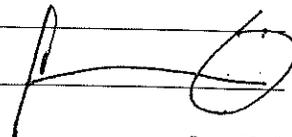
Time	Vol. (gal)	Temp. (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Dissolved Oxy. (mg/L)	ORP (mV)	Density (g/cm³)
1250	Start Purge							
1255	0.5	34.0	6.50	56,200	15.8			
1300	1.0	34.2	6.50	56,000	13.1			
1305	1.5	32.9	6.49	57,600	4.74	6.17	-59.4	1.0245
RPD								
QC Check								
QC Rec.								

Sample Inventory

Sample Collection Time	Volume (mL)	Bottle Type	Quantity	Preserved	Preserved with	Filtered w/ 0.45 µm	Sample Appearance	
							Color	Turbidity & Sediments
1305	1000	Amber		Yes	HCl	No	orangish	none
	1000	Glass	1	Yes	HCl	No		
	1000	Plastic		No	-	No		
	500	Plastic	1	Yes	HNO ₃	Yes		
	250	Plastic		Yes	HNO ₃	Yes		
	500 250	Plastic	2	No	-	No		
	40	Vial		Yes	HCl	No		

Purging Equipment: Peristaltic Pump
 Sampling Equipment: Peristaltic Pump
 Disposal of Discharge Water: Brine Pond

Observations/Comments: _____

Supervisor Signature: 

Ground Water Sampling Record

Logbook # 30

Quality Control Section

pH Calibration Logbook: 15 pg 24
 Conductivity Calibration Logbook: 7 pg 8
 Turbidity Calibration Logbook: 3 pg 17

Sampler/Analyst: R. Lee
 Date: 4-24-24
 LIMS #: 2404029-005

Stability Criteria:

pH: ±0.10
 Temperature: ±2%
 Conductivity: ±2%
 Turbidity: Turbidity has been reduced to 10 NTUs or the lowest practical achievable.

Facility: R2 HOCH
 Well Type: Monitor Well
 Well Number: MWU-5

Starting Water Level (ft TOC): 12.05
 Ending Water Level (ft TOC): 13.61
 Total Depth (ft TOC): 28.63

Sampling Measurements

Time	Vol. (gal)	Temp. (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Dissolved Oxy. (mg/L)	ORP (mV)	Density (g/cm³)
945	<u>Start Purge</u>							
950	<u>0.5</u>	<u>30.4</u>	<u>6.71</u>	<u>12,100</u>	<u>6.96</u>			
955	<u>1.0</u>	<u>30.1</u>	<u>6.68</u>	<u>12,080</u>	<u>5.02</u>			
1000	<u>1.5</u>	<u>29.2</u>	<u>6.76</u>	<u>12,020</u>	<u>3.86</u>	<u>5.84</u>	<u>222.3</u>	<u>1.0019</u>
RPD								
QC Check								
QC Rec.								

Sample Inventory

Sample Collection Time	Volume (mL)	Bottle Type	Quantity	Preserved	Preserved with	Filtered w/ 0.45 µm	Sample Appearance	
							Color	Turbidity & Sediments
<u>1000</u>	1000	Amber		Yes	HCl	No		
	1000	Glass	<u>1</u>	Yes	HCl	No		
	1000	Plastic		No	-	No		
	500	Plastic	<u>1</u>	Yes	HNO ₃	Yes		
	250	Plastic		Yes	HNO ₃	Yes		
	<u>500</u> 250	Plastic	<u>2</u>	No	-	No		
	40	Vial		Yes	HCl	No		

Purging Equipment: Peristaltic Pump
 Sampling Equipment: Peristaltic Pump
 Disposal of Discharge Water: Brine Pond

Observations/Comments: Density - 1.0014
ORP - 224.5 20.5
DO - 8.80 20.9
Blank collected @ 740

Supervisor Signature: [Signature]

Ground Water Sampling Record

Logbook # 30

Quality Control Section

pH Calibration Logbook: 15 pg 29
 Conductivity Calibration Logbook: 7 pg 8
 Turbidity Calibration Logbook: 3 pg 17

Sampler/Analyst: R. Lee
 Date: 4-24-24
 LIMS #: 2404029-006/009 Dup
 Facility: R2 HOLT
 Well Type: Monitor well
 Well Number: MWU-6

Stability Criteria:

pH: ±0.10
 Temperature: ±2%
 Conductivity: ±2%
 Turbidity: Turbidity has been reduced to 10 NTUs or the lowest practical achievable.

Starting Water Level (ft TOC): 9.61
 Ending Water Level (ft TOC): 10.42
 Total Depth (ft TOC): 20.13

Sampling Measurements

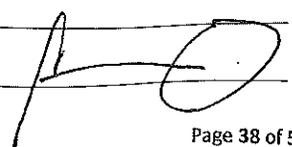
Time	Vol. (gal)	Temp. (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Dissolved Oxy. (mg/L)	ORP (mV)	Density (g/cm³)
1055	Start	Purge						
1100	0.5	28.6	7.02	10,130	475			
1105	1.0	28.1	7.08	10,090	400	3.49	169.2	1.0024
1110	1.5	28.0	7.12	10,080	336	3.36	170.1	1.0024
1110 Dup	1.5	28.0	7.11	10,090	339	3.43	163.6	1.0023
RPD		0	0.1	0.1	0.9	2.1	3.9	0.0
QC Check								
QC Rec.								

Sample Inventory

Sample Collection Time	Volume (mL)	Bottle Type	Quantity	Preserved	Preserved with	Filtered w/ 0.45 µm	Sample Appearance	
							Color	Turbidity & Sediments
1110	1000	Amber		Yes	HCl	No	Brownish	Yes
	1000	Glass	1 Dup	Yes	HCl	No		
	1000	Plastic		No	-	No		
	500	Plastic	1 Dup	Yes	HNO ₃	Yes		
	250	Plastic		Yes	HNO ₃	Yes		
	500 250	Plastic	2 Dup	No	-	No		
	40	Vial		Yes	HCl	No		

Purging Equipment: Peristaltic Pump
 Sampling Equipment: Peristaltic Pump
 Disposal of Discharge Water: Brine Pond

Observations/Comments: _____

Supervisor Signature: 

Ground Water Sampling Record

Logbook # 30

Quality Control Section

pH Calibration Logbook: 15 pg 24
 Conductivity Calibration Logbook: 7 pg 8
 Turbidity Calibration Logbook: 3 pg 17

Sampler/Analyst: R. Lee
 Date: 4-24-24
 LIMS #: 2404029-007

Stability Criteria:

pH: ±0.10
 Temperature: ±2%
 Conductivity: ±2%
 Turbidity: Turbidity has been reduced to 10 NTUs or the lowest practical achievable.

Facility: R2 HOCH
 Well Type: Monitor Well
 Well Number: MWU-7

Starting Water Level (ft TOC): 9.51
 Ending Water Level (ft TOC): 10.74
 Total Depth (ft TOC): 21.57

Sampling Measurements

Time	Vol. (gal)	Temp. (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Dissolved Oxy. (mg/L)	ORP (mV)	Density (g/cm³)
1215	Start	Purge						
1220	0.5	28.7	6.53	37,000	23.3			
1225	1.0	28.3	6.65	37,400	26.1			
1230	1.5	28.1	6.58	37,500	28.6	3.95	11.0	1.0154
RPD								
QC Check		22.4	7.06	10,140	10.7	8.57	221.4	1.0010
QC Rec.			100.9	101.4	107			100.1

Sample Inventory

Sample Collection Time	Volume (mL)	Bottle Type	Quantity	Preserved	Preserved with	Filtered w/ 0.45 µm	Sample Appearance	
							Color	Turbidity & Sediments
1230	1000	Amber		Yes	HCl	No	Misty clear	Slight
	1000	Glass	1	Yes	HCl	No		
	1000	Plastic		No	-	No		
	500	Plastic	1	Yes	HNO ₃	Yes		
	250	Plastic		Yes	HNO ₃	Yes		
500	250	Plastic	2	No	-	No		
	40	Vial		Yes	HCl	No		

Purging Equipment: Peristaltic Pump
 Sampling Equipment: Peristaltic Pump
 Disposal of Discharge Water: Brine Pond

Observations/Comments: _____

Supervisor Signature: [Signature]

Attachment D

Semi-Annual Groundwater Monitoring Results and Data Trends

Region 2 (Vulcan & Hoch) Background and Monitor Wells 1SA2024

Board Order Number R7-2022-0011

Sampler: Ricky Lee

Constituents	Unit	Monitoring Wells							Field Dup		Method
		MWV-1	MWV-2	MWV-3	MWV-4	MWV-6	MWV-7	MWV-5	MWV-6 Duplicate	MWV-2 Duplicate	
Date Sampled		4/22/2024	4/22/2024	4/22/2024	4/22/2024	4/24/2024	4/24/2024	4/24/2024	4/24/2024	4/22/2024	
Groundwater Elevation from top of casing	Feet	11.54	13.11	10.23	10.02	9.61	9.51	12.05	9.61	13.11	SOP AS100v01
Groundwater Elevation	Feet	-230.44	-230.51	-231.06	-230.48	-231.00	-231.41	-229.09	-231.00	-230.51	
Temp °C	°C	31.80	30.70	33.00	32.90	28.00	28.10	29.20	28.00	30.70	EPA 170.1
pH		6.61	6.70	6.71	6.49	7.12	6.58	6.76	7.11	6.71	SM 4500 H-B
Specific Conductance	µS/cm	23000	23200	32100	57600	10080	37500	12020	10090	23200	SM 2510 B
Turbidity	NTU	1.89	4.85	4.47	4.74	336.00	28.60	3.86	339.00	4.70	EPA 180.1
Dissolved Oxygen	mg/L	3.69	4.66	5.83	6.17	3.36	3.95	5.84	3.43	5.01	SM360.1
ORP	mV	102.5	109.5	-57.6	-59.4	170.1	11.0	222.3	163.6	109.4	SM2580A
Density	Kg/L	1.0066	1.0068	1.0118	1.0245	1.0024	1.0154	1.0019	1.0023	1.0067	ASTM D4052
TDS	mg/L	16570	16020	22130	41520	7660	27390	8575	7460	16240	SM 2540 C
Oil & Grease	mg/L	<4.0	<4.0	<4.0	<4.8	<4.0	<4.0	<4.0	<4.0	<4.5	EPA 1664A
Arsenic	mg/L	0.00190	0.00115	0.00277	0.03050	0.00662	0.000975	0.00213	0.00701	0.00105	EPA 200.8
Barium	mg/L	0.08430	0.07820	0.04590	0.30300	0.07760	0.05690	0.29900	0.07800	0.07780	EPA 200.8
Cadmium	mg/L	0.000537	0.00121	0.00052	0.01220	<0.00040*	0.00126	0.00431	<0.00040*	0.00116	EPA 200.8
Lead	mg/L	<0.00040*	0.00548	0.00071	0.25400	<0.00040*	0.000584	0.000489	<0.00040*	0.00525	EPA 200.8
Zinc	mg/L	0.01490	0.07570	0.01440	2.19000	0.00677	0.01580	0.14700	0.00573	0.07740	EPA 200.8

Analysis by:

Weck Laboratories, Inc ELAP Certificate # 1132

CalEnergy Operating Corporation, ELAP Certificate #2612

*"Trace result". - Estimate of constituent concentration falls between the MDL and PQL.

Please refer to the complete analytical report in the attachment.

Notes: "<" = less than °C = degrees Centigrade N /A: Not applicable



CalEnergy Operating Corporation
7030 Gentry Road
Calipatria, CA 92233
TEL: (760) 348-4200 FAX: (760) 348-4222
Website: www.calenergy.com

May 17, 2024

Anoop Sukumaran
CalEnergy
CalEnergy Operating Corporation
7030 Gentry Road
Calipatria, CA 92233
TEL:
FAX:

RE: Semi-Annual Monitor Wells

Order No.: 2404029

Dear Anoop Sukumaran:

CalEnergy Operating Corporation received 9 sample(s) on 4/24/2024 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative. Analytical results designated with a "J" qualifier are estimated and represent a detection above the Method Detection Limit (MDL) and less than the Reporting Limit (PQL). These analytes are not reviewed nor narrated as to whether they are laboratory artifacts.

Quality control data is within laboratory defined or method specified acceptance limits except if noted.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

A handwritten signature in black ink that reads "Yanqiu Wu".

Yanqiu Wu
Director, Engineering & Laboratory Service
7030 Gentry Road
Calipatria, CA 92233



CalEnergy Operating Corporation
7030 Gentry Road
Calipatria, CA 92233
TEL: (760) 348-4200 FAX: (760) 348-4222
Website: www.calenergy.com

Case Narrative

WO#: 2404029
Date: 5/17/2024

CLIENT: CalEnergy

Project: Semi-Annual Monitor Wells

This report in its entirety consists of the documents listed below. All documents contain the CalEnergy Operating Corporation Work Order Number assigned to this report.

1. Paginated Report including: Case Narrative, Analytical Results and Applicable Quality Control Summary Reports.
2. A Cover Letter that immediately precedes the Paginated Report.
3. Paginated copies of the Chain of Custody Documents supplied with this sample set.

Concentrations reported with a J flag in the Qual field are values below the reporting limit (RL) but greater than the established method detection limit (MDL). There is greater uncertainty associated with these results and data should be considered as estimated.

Concentrations reported with an E flag in the Qual field are values that exceed the upper quantification range. There is greater uncertainty associated with these results and data should be considered as estimated.

Any comments or problems with the analytical events associated with this report are noted below.



CalEnergy Operating Corporation
 7030 Gentry Road
 Calipatria, CA 92233
 TEL: (760) 348-4200 FAX: (760) 348-4222
 Website: www.calenergy.com

Analytical Report

(consolidated)

WO#: 2404029

Date Reported: 5/17/2024

CLIENT: CalEnergy **Collection Date:** 4/22/2024 11:14:00 AM
Project: Semi-Annual Monitor Wells
Lab ID: 2404029-001 **Matrix:** GROUNDWATER
Client Sample ID: MWV-1

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SEMI-ANNUAL MW MEASUREMENT OF CONDUCTANCE @ 25° C				A2510B		Analyst: RL	
Specific Conductivity	23000	10.00	10.00		µmhos/cm	1	04/24/24 4:28 PM
PH IN WATER BY POTENTIOMETRY				A4500-H+B		Analyst: RL	
pH	6.61	1.00	1.00		pH Units	1	04/24/24 4:28 PM
Temp	31.8	0	0		DEG C	1	04/24/24 4:28 PM
SEMI-ANNUAL MW TURBIDITY (NEPHELOMETRIC)				E180.1		Analyst: RL	
Turbidity	1.89	0.0200	0.0200		NTU	1	04/24/24 4:28 PM
SEMI-ANNUAL MW DETERMINATION OF TOXIC CHEMICAL ELEMENTS IN WATER				E200.8		Analyst: RV	
Arsenic	1.90	0.280	0.840		µg/L	2	05/02/24 11:10 AM
Barium	84.3	0.120	0.600		µg/L	2	05/02/24 11:10 AM
Cadmium	0.537	0.0800	0.400		µg/L	2	05/02/24 11:10 AM
Lead	0.213	0.0800	0.400	J	µg/L	2	05/02/24 11:10 AM
Zinc	14.9	0.300	1.50		µg/L	2	05/02/24 11:10 AM
SEMI-ANNUAL MW GRAVIMETRIC DETERMINATION OF FILTERABLE RESIDUE				A2540C		Analyst: RV	
Residue, Dissolved	16570	10.00	10.00		mg/L	1	04/26/24 12:00 PM

Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit
 PL Permit Limit RL Reporting Detection Limit
 U Samples with CalcVal < MDL W Sample container temperature is out of limit as specified at testcode



CalEnergy Operating Corporation
 7030 Gentry Road
 Calipatria, CA 92233
 TEL: (760) 348-4200 FAX: (760) 348-4222
 Website: www.calenergy.com

Analytical Report

(consolidated)

WO#: 2404029

Date Reported: 5/17/2024

CLIENT: CalEnergy **Collection Date:** 4/22/2024 9:55:00 AM
Project: Semi-Annual Monitor Wells
Lab ID: 2404029-002 **Matrix:** GROUNDWATER
Client Sample ID MWV-2

Analyses	Result	MDL	PQL	Qual Units	DF	Date Analyzed
SEMI-ANNUAL MW MEASUREMENT OF CONDUCTANCE @ 25° C						
				A2510B	Analyst: RL	
Specific Conductivity	23200	10.00	10.00	µmhos/cm	1	04/24/24 4:28 PM
PH IN WATER BY POTENTIOMETRY						
				A4500-H+B	Analyst: RL	
pH	6.70	1.00	1.00	pH Units	1	04/24/24 4:28 PM
Temp	30.7	0	0	DEG C	1	04/24/24 4:28 PM
SEMI-ANNUAL MW TURBIDITY (NEPHELOMETRIC)						
				E180.1	Analyst: RL	
Turbidity	4.85	0.0200	0.0200	NTU	1	04/24/24 4:28 PM
SEMI-ANNUAL MW DETERMINATION OF TOXIC CHEMICAL ELEMENTS IN WATER						
				E200.8	Analyst: RV	
Arsenic	1.15	0.280	0.840	µg/L	2	05/02/24 11:24 AM
Barium	78.2	0.120	0.600	µg/L	2	05/02/24 11:24 AM
Cadmium	1.21	0.0800	0.400	µg/L	2	05/02/24 11:24 AM
Lead	5.48	0.0800	0.400	µg/L	2	05/02/24 11:24 AM
Zinc	75.7	0.300	1.50	µg/L	2	05/02/24 11:24 AM
SEMI-ANNUAL MW GRAVIMETRIC DETERMINATION OF FILTERABLE RESIDUE						
				A2540C	Analyst: RV	
Residue, Dissolved	16020	10.00	10.00	mg/L	1	04/26/24 12:00 PM

Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit
 PL Permit Limit RL Reporting Detection Limit
 U Samples with CalcVal < MDL W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 2404029

Date Reported: 5/17/2024

CLIENT: CalEnergy **Collection Date:** 4/22/2024 2:53:00 PM
Project: Semi-Annual Monitor Wells
Lab ID: 2404029-003 **Matrix:** GROUNDWATER
Client Sample ID: MWV-3

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SEMI-ANNUAL MW MEASUREMENT OF CONDUCTANCE @ 25° C **A2510B** Analyst: **RL**

Specific Conductivity	32100	10.00	10.00		µmhos/cm	1	04/24/24 4:28 PM
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PH IN WATER BY POTENTIOMETRY **A4500-H+B** Analyst: **RL**

pH	6.71	1.00	1.00		pH Units	1	04/24/24 4:28 PM
Temp	33.0	0	0		DEG C	1	04/24/24 4:28 PM

SEMI-ANNUAL MW TURBIDITY (NEPHELOMETRIC) **E180.1** Analyst: **RL**

Turbidity	4.47	0.0200	0.0200		NTU	1	04/24/24 4:28 PM
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SEMI-ANNUAL MW DETERMINATION OF TOXIC CHEMICAL ELEMENTS IN WATER **E200.8** Analyst: **RV**

Arsenic	2.77	0.280	0.840		µg/L	2	05/02/24 11:33 AM
Barium	45.9	0.120	0.600		µg/L	2	05/02/24 11:33 AM
Cadmium	0.520	0.0800	0.400		µg/L	2	05/02/24 11:33 AM
Lead	0.711	0.0800	0.400		µg/L	2	05/02/24 11:33 AM
Zinc	14.4	0.300	1.50		µg/L	2	05/02/24 11:33 AM

SEMI-ANNUAL MW GRAVIMETRIC DETERMINATION OF FILTERABLE RESIDUE **A2540C** Analyst: **RV**

Residue, Dissolved	22130	10.00	10.00		mg/L	1	04/26/24 12:00 PM
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Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit
 PL Permit Limit RL Reporting Detection Limit
 U Samples with CalcVal < MDL W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 2404029

Date Reported: 5/17/2024

CLIENT: CalEnergy **Collection Date:** 4/22/2024 1:05:00 PM
Project: Semi-Annual Monitor Wells
Lab ID: 2404029-004 **Matrix:** GROUNDWATER
Client Sample ID MWV-4

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SEMI-ANNUAL MW MEASUREMENT OF CONDUCTANCE @ 25° C **A2510B** Analyst: **RL**

Specific Conductivity	57600	10.00	10.00		µmhos/cm	1	04/24/24 4:28 PM
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PH IN WATER BY POTENTIOMETRY **A4500-H+B** Analyst: **RL**

pH	6.49	1.00	1.00		pH Units	1	04/24/24 4:28 PM
Temp	32.9	0	0		DEG C	1	04/24/24 4:28 PM

SEMI-ANNUAL MW TURBIDITY (NEPHELOMETRIC) **E180.1** Analyst: **RL**

Turbidity	4.74	0.0200	0.0200		NTU	1	04/24/24 4:28 PM
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SEMI-ANNUAL MW DETERMINATION OF TOXIC CHEMICAL ELEMENTS IN WATER **E200.8** Analyst: **RV**

Arsenic	30.5	0.280	0.840		µg/L	2	05/02/24 11:52 AM
Barium	303	0.120	0.600		µg/L	2	05/02/24 11:52 AM
Cadmium	12.2	0.0800	0.400		µg/L	2	05/02/24 11:52 AM
Lead	254	0.0800	0.400		µg/L	2	05/02/24 11:52 AM
Zinc	2190	1.50	7.50		µg/L	10	05/02/24 12:33 PM

SEMI-ANNUAL MW GRAVIMETRIC DETERMINATION OF FILTERABLE RESIDUE **A2540C** Analyst: **RV**

Residue, Dissolved	41520	10.00	10.00		mg/L	1	04/26/24 12:00 PM
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Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit
 PL Permit Limit RL Reporting Detection Limit
 U Samples with CalcVal < MDL W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 2404029

Date Reported: 5/17/2024

CLIENT: CalEnergy **Collection Date:** 4/24/2024 10:00:00 AM
Project: Semi-Annual Monitor Wells
Lab ID: 2404029-005 **Matrix:** GROUNDWATER
Client Sample ID MWV-5

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SEMI-ANNUAL MW MEASUREMENT OF CONDUCTANCE @ 25° C **A2510B** Analyst: **RL**

Specific Conductivity	12020	10.00	10.00		µmhos/cm	1	04/24/24 4:28 PM
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PH IN WATER BY POTENTIOMETRY **A4500-H+B** Analyst: **RL**

pH	6.76	1.00	1.00		pH Units	1	04/24/24 4:28 PM
Temp	29.2	0	0		DEG C	1	04/24/24 4:28 PM

SEMI-ANNUAL MW TURBIDITY (NEPHELOMETRIC) **E180.1** Analyst: **RL**

Turbidity	3.86	0.0200	0.0200		NTU	1	04/24/24 4:28 PM
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SEMI-ANNUAL MW DETERMINATION OF TOXIC CHEMICAL ELEMENTS IN WATER **E200.8** Analyst: **RV**

Arsenic	2.13	0.280	0.840		µg/L	2	05/02/24 12:01 PM
Barium	299	0.120	0.600		µg/L	2	05/02/24 12:01 PM
Cadmium	4.31	0.0800	0.400		µg/L	2	05/02/24 12:01 PM
Lead	0.489	0.0800	0.400		µg/L	2	05/02/24 12:01 PM
Zinc	147	0.300	1.50		µg/L	2	05/02/24 12:01 PM

SEMI-ANNUAL MW GRAVIMETRIC DETERMINATION OF FILTERABLE RESIDUE **A2540C** Analyst: **RV**

Residue, Dissolved	8575	10.00	10.00		mg/L	1	04/26/24 12:00 PM
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Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit
 PL Permit Limit RL Reporting Detection Limit
 U Samples with CalcVal < MDL W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 2404029

Date Reported: 5/17/2024

CLIENT: CalEnergy **Collection Date:** 4/24/2024 11:10:00 AM
Project: Semi-Annual Monitor Wells
Lab ID: 2404029-006 **Matrix:** GROUNDWATER
Client Sample ID: MWV-6

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SEMI-ANNUAL MW MEASUREMENT OF CONDUCTANCE @ 25° C **A2510B** Analyst: **RL**

Specific Conductivity	10080	10.00	10.00		µmhos/cm	1	04/24/24 4:28 PM
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PH IN WATER BY POTENTIOMETRY **A4500-H+B** Analyst: **RL**

pH	7.12	1.00	1.00		pH Units	1	04/24/24 4:28 PM
Temp	28.0	0	0		DEG C	1	04/24/24 4:28 PM

SEMI-ANNUAL MW TURBIDITY (NEPHELOMETRIC) **E180.1** Analyst: **RL**

Turbidity	336	0.0200	0.0200		NTU	1	04/24/24 4:28 PM
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SEMI-ANNUAL MW DETERMINATION OF TOXIC CHEMICAL ELEMENTS IN WATER **E200.8** Analyst: **RV**

Arsenic	6.62	0.280	0.840		µg/L	2	05/02/24 12:15 PM
Barium	77.6	0.120	0.600		µg/L	2	05/02/24 12:15 PM
Cadmium	0.118	0.0800	0.400	J	µg/L	2	05/02/24 12:15 PM
Lead	0.216	0.0800	0.400	J	µg/L	2	05/02/24 12:15 PM
Zinc	6.77	0.300	1.50		µg/L	2	05/02/24 12:15 PM

SEMI-ANNUAL MW GRAVIMETRIC DETERMINATION OF FILTERABLE RESIDUE **A2540C** Analyst: **RV**

Residue, Dissolved	7660	10.00	10.00		mg/L	1	04/26/24 12:00 PM
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Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit
 PL Permit Limit RL Reporting Detection Limit
 U Samples with CalcVal < MDL W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 2404029

Date Reported: 5/17/2024

CLIENT: CalEnergy **Collection Date:** 4/24/2024 12:30:00 PM
Project: Semi-Annual Monitor Wells
Lab ID: 2404029-007 **Matrix:** GROUNDWATER
Client Sample ID MWV-7

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SEMI-ANNUAL MW MEASUREMENT OF CONDUCTANCE @ 25° C **A2510B** Analyst: **RL**

Specific Conductivity	37500	10.00	10.00		µmhos/cm	1	04/24/24 4:28 PM
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PH IN WATER BY POTENTIOMETRY **A4500-H+B** Analyst: **RL**

pH	6.58	1.00	1.00		pH Units	1	04/24/24 4:28 PM
Temp	28.1	0	0		DEG C	1	04/24/24 4:28 PM

SEMI-ANNUAL MW TURBIDITY (NEPHELOMETRIC) **E180.1** Analyst: **RL**

Turbidity	28.6	0.0200	0.0200		NTU	1	04/24/24 4:28 PM
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SEMI-ANNUAL MW DETERMINATION OF TOXIC CHEMICAL ELEMENTS IN WATER **E200.8** Analyst: **RV**

Arsenic	0.975	0.280	0.840		µg/L	2	05/02/24 12:24 PM
Barium	56.9	0.120	0.600		µg/L	2	05/02/24 12:24 PM
Cadmium	1.26	0.0800	0.400		µg/L	2	05/02/24 12:24 PM
Lead	0.584	0.0800	0.400		µg/L	2	05/02/24 12:24 PM
Zinc	15.8	0.300	1.50		µg/L	2	05/02/24 12:24 PM

SEMI-ANNUAL MW GRAVIMETRIC DETERMINATION OF FILTERABLE RESIDUE **A2540C** Analyst: **RV**

Residue, Dissolved	27390	10.00	10.00		mg/L	1	04/26/24 12:00 PM
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Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit
 PL Permit Limit RL Reporting Detection Limit
 U Samples with CalcVal < MDL W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 2404029

Date Reported: 5/17/2024

CLIENT: CalEnergy **Collection Date:** 4/22/2024 9:55:00 AM
Project: Semi-Annual Monitor Wells
Lab ID: 2404029-008 **Matrix:** GROUNDWATER
Client Sample ID MWM-2 DUP

Analyses	Result	MDL	PQL	Qual Units	DF	Date Analyzed
SEMI-ANNUAL MW MEASUREMENT OF CONDUCTANCE @ 25° C						
				A2510B	Analyst: RL	
Specific Conductivity	23200	10.00	10.00	µmhos/cm	1	04/24/24 4:28 PM
PH IN WATER BY POTENTIOMETRY						
				A4500-H+B	Analyst: RL	
pH	6.71	1.00	1.00	pH Units	1	04/24/24 4:28 PM
Temp	30.7	0	0	DEG C	1	04/24/24 4:28 PM
SEMI-ANNUAL MW TURBIDITY (NEPHELOMETRIC)						
				E180.1	Analyst: RL	
Turbidity	4.70	0.0200	0.0200	NTU	1	04/24/24 4:28 PM
SEMI-ANNUAL MW DETERMINATION OF TOXIC CHEMICAL ELEMENTS IN WATER						
				E200.8	Analyst: RV	
Arsenic	1.05	0.280	0.840	µg/L	2	05/02/24 11:29 AM
Barium	77.8	0.120	0.600	µg/L	2	05/02/24 11:29 AM
Cadmium	1.16	0.0800	0.400	µg/L	2	05/02/24 11:29 AM
Lead	5.25	0.0800	0.400	µg/L	2	05/02/24 11:29 AM
Zinc	77.4	0.300	1.50	µg/L	2	05/02/24 11:29 AM
SEMI-ANNUAL MW GRAVIMETRIC DETERMINATION OF FILTERABLE RESIDUE						
				A2540C	Analyst: RV	
Residue, Dissolved	16240	10.00	10.00	mg/L	1	04/26/24 12:00 PM

Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit
 PL Permit Limit RL Reporting Detection Limit
 U Samples with CalcVal < MDL W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 2404029

Date Reported: 5/17/2024

CLIENT: CalEnergy **Collection Date:** 4/24/2024 11:10:00 AM
Project: Semi-Annual Monitor Wells
Lab ID: 2404029-009 **Matrix:** GROUNDWATER
Client Sample ID MWV-6 DUP

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SEMI-ANNUAL MW MEASUREMENT OF CONDUCTANCE @ 25° C							A2510B Analyst: RL
Specific Conductivity	10090	10.00	10.00		µmhos/cm	1	04/24/24 4:28 PM
PH IN WATER BY POTENTIOMETRY							A4500-H+B Analyst: RL
pH	7.11	1.00	1.00		pH Units	1	04/24/24 4:28 PM
Temp	28.0	0	0		DEG C	1	04/24/24 4:28 PM
SEMI-ANNUAL MW TURBIDITY (NEPHELOMETRIC)							E180.1 Analyst: RL
Turbidity	339	0.0200	0.0200		NTU	1	04/24/24 4:28 PM
SEMI-ANNUAL MW DETERMINATION OF TOXIC CHEMICAL ELEMENTS IN WATER							E200.8 Analyst: RV
Arsenic	7.01	0.280	0.840		µg/L	2	05/02/24 12:20 PM
Barium	78.0	0.120	0.600		µg/L	2	05/02/24 12:20 PM
Cadmium	0.139	0.0800	0.400	J	µg/L	2	05/02/24 12:20 PM
Lead	0.205	0.0800	0.400	J	µg/L	2	05/02/24 12:20 PM
Zinc	5.73	0.300	1.50		µg/L	2	05/02/24 12:20 PM
SEMI-ANNUAL MW GRAVIMETRIC DETERMINATION OF FILTERABLE RESIDUE							A2540C Analyst: RV
Residue, Dissolved	7460	10.00	10.00		mg/L	1	04/26/24 12:00 PM

Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit
 PL Permit Limit RL Reporting Detection Limit
 U Samples with CalcVal < MDL W Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 2404029

17-May-24

Client: CalEnergy
Project: Semi-Annual Monitor Wells

TestCode: 2510B_CONDUCTIVITY

Sample ID: 2404029-002ADUP	SampType: DUP	TestCode: 2510B_COND	Units: µmhos/cm	Prep Date:	RunNo: 41447						
Client ID: MWV-2	Batch ID: R41447	TestNo: A2510B		Analysis Date: 4/24/2024	SeqNo: 441406						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductivity	23200	10.00		0	0			23200	0	2	

Sample ID: 2404029-006ADUP	SampType: DUP	TestCode: 2510B_COND	Units: µmhos/cm	Prep Date:	RunNo: 41447						
Client ID: MWV-6	Batch ID: R41447	TestNo: A2510B		Analysis Date: 4/24/2024	SeqNo: 441411						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductivity	10090	10.00		0	0			10080	0.0992	2	

TestCode: 4500-H+B

Sample ID: 2404029-002ADUP	SampType: DUP	TestCode: 4500-H+B	Units: pH Units	Prep Date:	RunNo: 41447						
Client ID: MWV-2	Batch ID: R41447	TestNo: A4500-H+B		Analysis Date: 4/24/2024	SeqNo: 441393						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.71	1.00						6.700	0.149	5	
Temp	30.7	0						30.70	0	0	

Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit PL Permit Limit
 RL Reporting Detection Limit S MBLK Samptype result is greater than 1/2 PQL. S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 2404029

17-May-24

Client: CalEnergy
Project: Semi-Annual Monitor Wells

Sample ID: 2404029-006ADUP	SampType: DUP	TestCode: 4500-H+B	Units: pH Units	Prep Date:	RunNo: 41447						
Client ID: MWV-6	Batch ID: R41447	TestNo: A4500-H+B	Analysis Date: 4/24/2024	SeqNo: 441398							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.11	1.00						7.120	0.141	5	
Temp	28.0	0						28.00	0	0	

TestCode: EPA_180.1

Sample ID: 2404029-002ADUP	SampType: DUP	TestCode: EPA_180.1	Units: NTU	Prep Date:	RunNo: 41447						
Client ID: MWV-2	Batch ID: R41447	TestNo: E180.1	Analysis Date: 4/24/2024	SeqNo: 441419							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	4.70	0.0200						4.850	3.14	15	

Sample ID: 2404029-006ADUP	SampType: DUP	TestCode: EPA_180.1	Units: NTU	Prep Date:	RunNo: 41447						
Client ID: MWV-6	Batch ID: R41447	TestNo: E180.1	Analysis Date: 4/24/2024	SeqNo: 441424							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	339	0.0200						336.0	0.889	15	

TestCode: EPA_200.8_MW

Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit PL Permit Limit
 RL Reporting Detection Limit S MBLK Samptype result is greater than 1/2 PQL. S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode



CalEnergy Operating Corporation
 7030 Gentry Road
 Calipatria, CA 92233
 TEL: (760) 348-4200 FAX: (760) 348-4222
 Website: www.calenergy.com

QC SUMMARY REPORT

WO#: 2404029

17-May-24

Client: CalEnergy
Project: Semi-Annual Monitor Wells

Sample ID: LCS	SampType: LCS	TestCode: EPA_200.8_M	Units: µg/L	Prep Date:	RunNo: 41475						
Client ID: LCSW	Batch ID: R41475	TestNo: E200.8	Analysis Date: 5/2/2024	SeqNo: 442114							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	50.9	0.420	50.00	0	102	85	115				
Barium	51.8	0.300	50.00	0	104	85	115				
Cadmium	52.1	0.200	50.00	0	104	85	115				
Lead	51.9	0.200	50.00	0	104	85	115				
Zinc	51.9	0.750	50.00	0	104	85	115				

Sample ID: FB-1	SampType: FB	TestCode: EPA_200.8_M	Units: µg/L	Prep Date:	RunNo: 41475						
Client ID: BatchQC	Batch ID: R41475	TestNo: E200.8	Analysis Date: 5/2/2024	SeqNo: 442116							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.420									U
Barium	0.275	0.300									J
Cadmium	ND	0.200									U
Lead	0.0438	0.200									J
Zinc	1.68	0.750									

Sample ID: 2404029-001AMS	SampType: MS	TestCode: EPA_200.8_M	Units: µg/L	Prep Date:	RunNo: 41475						
Client ID: MWV-1	Batch ID: R41475	TestNo: E200.8	Analysis Date: 5/2/2024	SeqNo: 442118							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	101	0.840	100.0	1.904	99.3	70	130				
Barium	190	0.600	100.0	84.34	106	70	130				
Cadmium	95.0	0.400	100.0	0.5373	94.4	70	130				

Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit PL Permit Limit
 RL Reporting Detection Limit S MBLK Samptype result is greater than 1/2 PQL. S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 2404029

17-May-24

Client: CalEnergy
Project: Semi-Annual Monitor Wells

Sample ID: 2404029-001AMS	SampType: MS	TestCode: EPA_200.8_M	Units: µg/L	Prep Date:	RunNo: 41475						
Client ID: MWV-1	Batch ID: R41475	TestNo: E200.8	Analysis Date: 5/2/2024	SeqNo: 442118							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	103	0.400	100.0	0.2128	103	70	130				
Zinc	102	1.50	100.0	14.86	86.7	70	130				

Sample ID: 2404029-001AMSD	SampType: MSD	TestCode: EPA_200.8_M	Units: µg/L	Prep Date:	RunNo: 41475						
Client ID: MWV-1	Batch ID: R41475	TestNo: E200.8	Analysis Date: 5/2/2024	SeqNo: 442119							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	101	0.840	100.0	1.904	99.4	70	130	101.2	0.0681	15	
Barium	191	0.600	100.0	84.34	106	70	130	190.0	0.385	15	
Cadmium	96.1	0.400	100.0	0.5373	95.5	70	130	94.95	1.17	15	
Lead	105	0.400	100.0	0.2128	105	70	130	103.3	1.71	15	
Zinc	101	1.50	100.0	14.86	86.4	70	130	101.5	0.266	15	

Sample ID: 2404029-003ADUP	SampType: DUP	TestCode: EPA_200.8_M	Units: mg/L	Prep Date:	RunNo: 41475						
Client ID: MWV-3	Batch ID: R41475	TestNo: E200.8	Analysis Date: 5/2/2024	SeqNo: 442123							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	2.66	0.840						2.774	4.29	0	
Barium	46.5	0.600						45.91	1.30	0	
Cadmium	0.574	0.400						0.5198	9.97	0	
Lead	0.712	0.400						0.7112	0.185	0	
Zinc	14.7	1.50						14.39	2.40	0	

Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit PL Permit Limit
 RL Reporting Detection Limit S MBLK Samptype result is greater than 1/2 PQL. S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 2404029

17-May-24

Client: CalEnergy
Project: Semi-Annual Monitor Wells

Sample ID: FB-2	SampType: FB	TestCode: EPA_200.8_M	Units: µg/L	Prep Date:	RunNo: 41475						
Client ID: BatchQC	Batch ID: R41475	TestNo: E200.8	Analysis Date: 5/2/2024	SeqNo: 442127							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.420									U
Barium	0.246	0.300									J
Cadmium	ND	0.200									U
Lead	0.111	0.200									J
Zinc	1.75	0.750									

Sample ID: 2404029-005AMS	SampType: MS	TestCode: EPA_200.8_M	Units: µg/L	Prep Date:	RunNo: 41475						
Client ID: MWV-5	Batch ID: R41475	TestNo: E200.8	Analysis Date: 5/2/2024	SeqNo: 442129							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	102	0.840	100.0	2.128	99.9	70	130				
Barium	401	0.600	100.0	299.2	102	70	130				
Cadmium	100	0.400	100.0	4.305	95.8	70	130				
Lead	102	0.400	100.0	0.4894	102	70	130				
Zinc	235	1.50	100.0	147.5	87.7	70	130				

Sample ID: 2404029-005AMSD	SampType: MSD	TestCode: EPA_200.8_M	Units: µg/L	Prep Date:	RunNo: 41475						
Client ID: MWV-5	Batch ID: R41475	TestNo: E200.8	Analysis Date: 5/2/2024	SeqNo: 442130							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	104	0.840	100.0	2.128	102	70	130	102.0	1.73	15	
Barium	402	0.600	100.0	299.2	103	70	130	400.9	0.337	15	
Cadmium	101	0.400	100.0	4.305	96.3	70	130	100.2	0.439	15	

Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit PL Permit Limit
 RL Reporting Detection Limit S MBLK Samptype result is greater than 1/2 PQL. S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 2404029

17-May-24

Client: CalEnergy
Project: Semi-Annual Monitor Wells

Sample ID: 2404029-005AMSD	SampType: MSD	TestCode: EPA_200.8_M	Units: µg/L	Prep Date:	RunNo: 41475						
Client ID: MWV-5	Batch ID: R41475	TestNo: E200.8	Analysis Date: 5/2/2024	SeqNo: 442130							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	103	0.400	100.0	0.4894	103	70	130	102.5	0.676	15	
Zinc	234	1.50	100.0	147.5	86.0	70	130	235.2	0.707	15	

Sample ID: 2404029-007ADUP	SampType: DUP	TestCode: EPA_200.8_M	Units: mg/L	Prep Date:	RunNo: 41475						
Client ID: MWV-7	Batch ID: R41475	TestNo: E200.8	Analysis Date: 5/2/2024	SeqNo: 442134							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.50	0.840						0.9748	87.7	0	
Barium	56.8	0.600						56.89	0.176	0	
Cadmium	1.13	0.400						1.264	11.6	0	
Lead	0.633	0.400						0.5844	7.98	0	
Zinc	16.0	1.50						15.81	1.00	0	

TestCode: TDS

Sample ID: FB-R40632	SampType: FB	TestCode: TDS	Units: mg/L	Prep Date:	RunNo: 41455						
Client ID: BatchQC	Batch ID: R41455	TestNo: A2540C	Analysis Date: 4/26/2024	SeqNo: 441625							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Dissolved	38.00	10.00									

Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit PL Permit Limit
 RL Reporting Detection Limit S MBLK Samptype result is greater than 1/2 PQL. S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 2404029

17-May-24

Client: CalEnergy
Project: Semi-Annual Monitor Wells

Sample ID: 2404029-001ADUP	SampType: DUP	TestCode: TDS	Units: mg/L	Prep Date:	RunNo: 41455						
Client ID: MWV-1	Batch ID: R41455	TestNo: A2540C	Analysis Date: 4/26/2024	SeqNo: 441627							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Dissolved	16700	10.00						16570	0.781	5	

Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit PL Permit Limit
 RL Reporting Detection Limit S MBLK Samptype result is greater than 1/2 PQL. S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

Work Orders: 4D26079

Project: Vulcan Monitoring Wells 1SA24: Region 2

Attn: Mahesh Kaur

Client: CalEnergy Corporation
7030 Gentry Rd.
Calipatria, CA 92233

Report Date: 5/13/2024

Received Date: 4/26/2024

Turnaround Time: Normal

Phones: (760) 348-4294

Fax: (760) 348-4222

P.O. #:

Billing Code:

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143 • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. The report may include analytes that are not currently accreditable by some state agencies or accrediting bodies. This analytical report must be reproduced in its entirety.

Dear Mahesh Kaur,

Enclosed are the results of analyses for samples received 4/26/24 with the Chain-of-Custody document. The samples were received in good condition, at 2.4 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:



Ryan J. Gasio
Project Manager



CalEnergy Corporation
7030 Gentry Rd.
Calipatria, CA 92233

Project Number: Vulcan Monitoring Wells 1SA24: Region 2

Reported:
05/13/2024 17:40

Project Manager: Mahesh Kaur

Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
MWV-1	R. Lee	4D26079-01	Water	04/22/24 11:14	
MWV-2	R. Lee	4D26079-02	Water	04/22/24 09:55	
MWV-2 DUP	R. Lee	4D26079-03	Water	04/22/24 09:55	
MWV-3	R. Lee	4D26079-04	Water	04/22/24 14:53	
MWV-4	R. Lee	4D26079-05	Water	04/22/24 13:05	
BLANK	R. Lee	4D26079-06	Water	04/22/24 08:05	
BLANK	R. Lee	4D26079-07	Water	04/24/24 07:40	
MWV-5	R. Lee	4D26079-08	Water	04/24/24 10:00	
MWV-6	R. Lee	4D26079-09	Water	04/24/24 11:10	
MWV-6 DUP	R. Lee	4D26079-10	Water	04/24/24 11:10	
MWV-7	R. Lee	4D26079-11	Water	04/24/24 12:30	

CalEnergy Corporation
7030 Gentry Rd.
Calipatria, CA 92233

Project Number: Vulcan Monitoring Wells 1SA24: Region 2
Project Manager: Mahesh Kaur

Reported:
05/13/2024 17:40

Sample Results

Sample: MWV-1

Sampled: 04/22/24 11:14 by R. Lee

4D26079-01 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods						
Method: EPA 1664B						
Batch ID: W4E0238	Preparation: EPA 1664					
Oil & Grease (HEM)	ND	4.0	mg/l	1	05/03/24	

Instr: SPE15

Prepared: 05/03/24 07:27

Analyst: jam

Sample Results

Sample: MWV-2

Sampled: 04/22/24 9:55 by R. Lee

4D26079-02 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods						
Method: EPA 1664B						
Batch ID: W4E0238	Preparation: EPA 1664					
Oil & Grease (HEM)	ND	4.0	mg/l	1	05/03/24	

Instr: SPE15

Prepared: 05/03/24 07:27

Analyst: jam

Sample Results

Sample: MWV-2 DUP

Sampled: 04/22/24 9:55 by R. Lee

4D26079-03 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods						
Method: EPA 1664B						
Batch ID: W4E0238	Preparation: EPA 1664					
Oil & Grease (HEM)	ND	4.5	mg/l	1	05/03/24	

Instr: SPE15

Prepared: 05/03/24 07:27

Analyst: jam

Sample Results

Sample: MWV-3

Sampled: 04/22/24 14:53 by R. Lee

4D26079-04 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods						
Method: EPA 1664B						
Batch ID: W4E0238	Preparation: EPA 1664					
Oil & Grease (HEM)	ND	4.0	mg/l	1	05/03/24	

Instr: SPE15

Prepared: 05/03/24 07:27

Analyst: jam

CalEnergy Corporation
7030 Gentry Rd.
Calipatria, CA 92233

Project Number: Vulcan Monitoring Wells 1SA24: Region 2
Project Manager: Mahesh Kaur

Reported:
05/13/2024 17:40

Sample Results

(Continued)

Sample: MWV-4

Sampled: 04/22/24 13:05 by R. Lee

4D26079-05 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods						
Method: EPA 1664B						
Batch ID: W4E0238	Preparation: EPA 1664					
Oil & Grease (HEM)	ND	4.8	mg/l	1	05/03/24	

Instr: SPE15

Prepared: 05/03/24 07:27

Analyst: jam

Sample Results

(Continued)

Sample: BLANK

Sampled: 04/22/24 8:05 by R. Lee

4D26079-06 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods						
Method: EPA 1664B						
Batch ID: W4E0238	Preparation: EPA 1664					
Oil & Grease (HEM)	ND	4.0	mg/l	1	05/03/24	

Instr: SPE15

Prepared: 05/03/24 07:27

Analyst: jam

Sample Results

(Continued)

Sample: BLANK

Sampled: 04/24/24 7:40 by R. Lee

4D26079-07 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods						
Method: EPA 1664B						
Batch ID: W4E0238	Preparation: EPA 1664					
Oil & Grease (HEM)	ND	4.0	mg/l	1	05/03/24	

Instr: SPE15

Prepared: 05/03/24 07:27

Analyst: jam

Sample Results

(Continued)

Sample: MWV-5

Sampled: 04/24/24 10:00 by R. Lee

4D26079-08 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods						
Method: EPA 1664B						
Batch ID: W4E0238	Preparation: EPA 1664					
Oil & Grease (HEM)	ND	4.0	mg/l	1	05/03/24	

Instr: SPE15

Prepared: 05/03/24 07:27

Analyst: jam

CalEnergy Corporation
7030 Gentry Rd.
Calipatria, CA 92233

Project Number: Vulcan Monitoring Wells 1SA24: Region 2
Project Manager: Mahesh Kaur

Reported:
05/13/2024 17:40

Sample Results

(Continued)

Sample: MWV-6

Sampled: 04/24/24 11:10 by R. Lee

4D26079-09 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods						
Method: EPA 1664B						
Batch ID: W4E0238	Preparation: EPA 1664					
Oil & Grease (HEM)	ND	4.0	mg/l	1	05/03/24	

Instr: SPE15

Prepared: 05/03/24 07:27

Analyst: jam

Sample Results

(Continued)

Sample: MWV-6 DUP

Sampled: 04/24/24 11:10 by R. Lee

4D26079-10 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods						
Method: EPA 1664B						
Batch ID: W4E0238	Preparation: EPA 1664					
Oil & Grease (HEM)	ND	4.0	mg/l	1	05/03/24	

Instr: SPE15

Prepared: 05/03/24 07:27

Analyst: jam

Sample Results

(Continued)

Sample: MWV-7

Sampled: 04/24/24 12:30 by R. Lee

4D26079-11 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods						
Method: EPA 1664B						
Batch ID: W4E0238	Preparation: EPA 1664					
Oil & Grease (HEM)	ND	4.0	mg/l	1	05/03/24	

Instr: SPE15

Prepared: 05/03/24 07:27

Analyst: jam

CalEnergy Corporation
7030 Gentry Rd.
Calipatria, CA 92233

Project Number: Vulcan Monitoring Wells 1SA24: Region 2

Reported:
05/13/2024 17:40

Project Manager: Mahesh Kaur

Quality Control Results

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit	Qualifier
Batch: W4E0238 - EPA 1664B										
Blank (W4E0238-BLK1)										
Oil & Grease (HEM)	ND	4.0	mg/l							
Prepared & Analyzed: 05/03/24										
LCS (W4E0238-BS1)										
Oil & Grease (HEM)	15.3	4.0	mg/l	16.8		91	78-114			
Prepared & Analyzed: 05/03/24										
LCS Dup (W4E0238-BSD1)										
Oil & Grease (HEM)	15.7	4.0	mg/l	16.8		93	78-114	3	18	

CalEnergy Corporation
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Calipatria, CA 92233

Project Number: Vulcan Monitoring Wells 1SA24: Region 2

Reported:
05/13/2024 17:40

Project Manager: Mahesh Kaur

Notes and Definitions

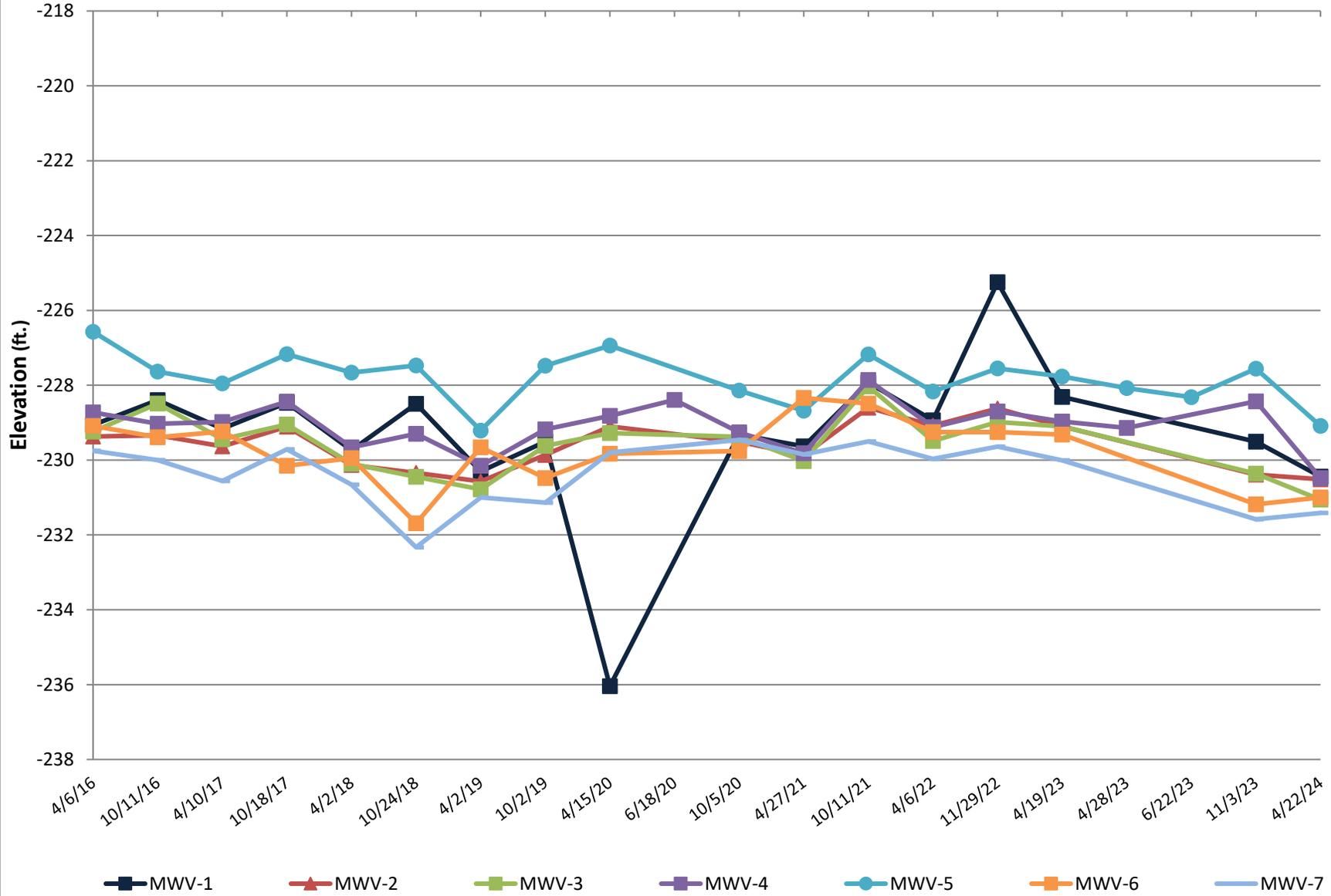
Item	Definition
%REC	Percent Recovery
Dil	Dilution
MRL	Method Reporting Limit (MRL) is the minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

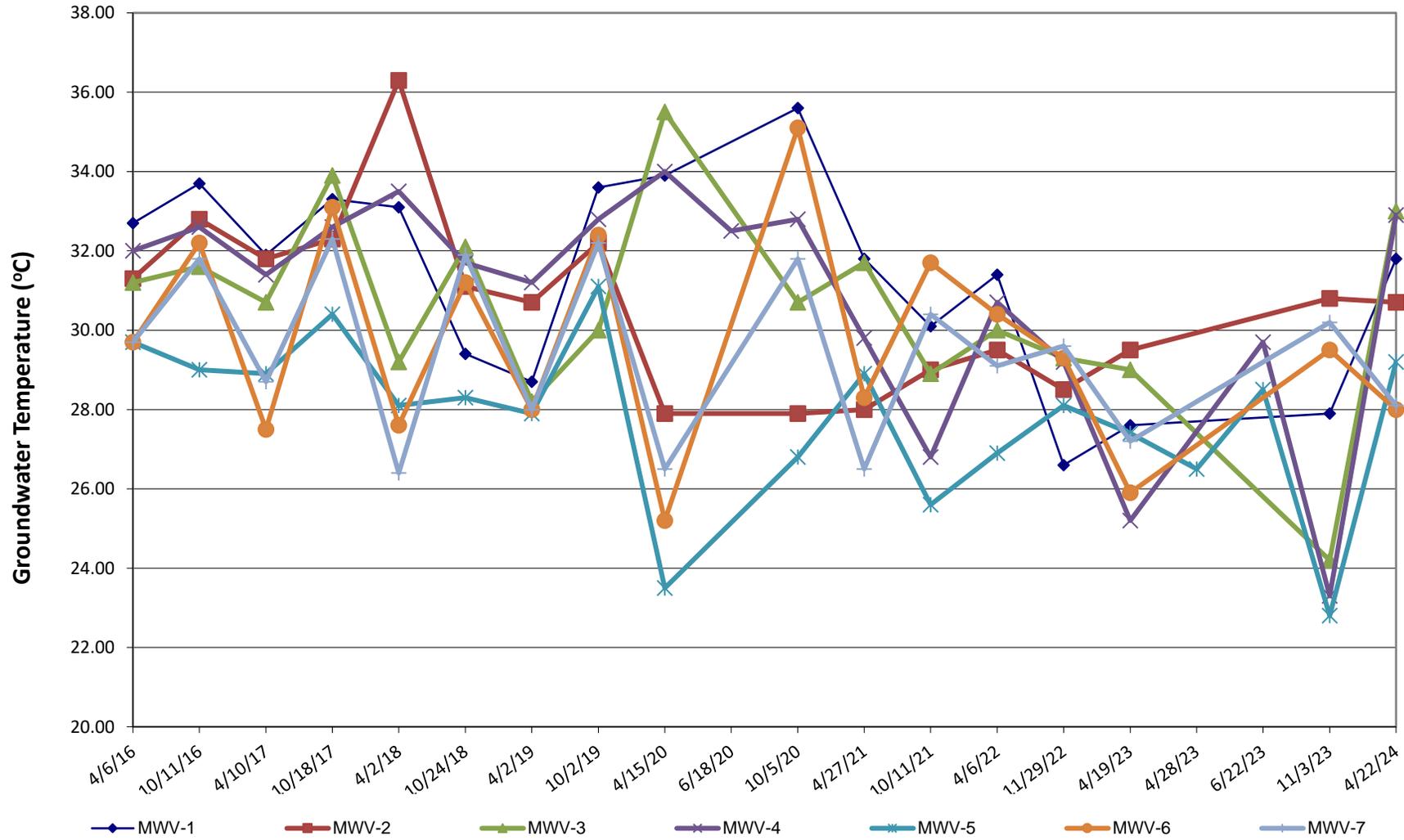
All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Region 2 Monitoring Wells Groundwater Elevation

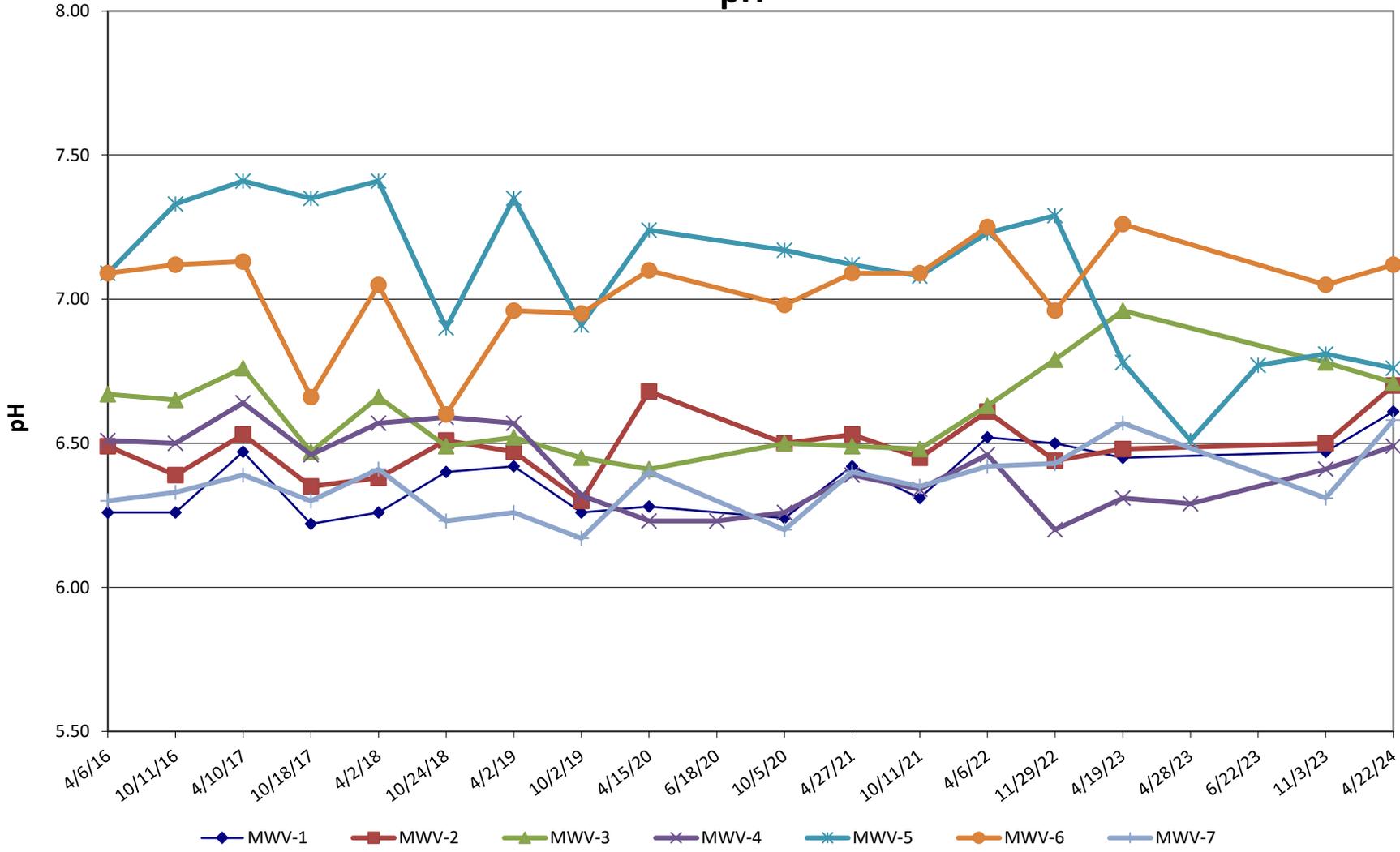


Region 2 Monitoring Wells Groundwater Temperature

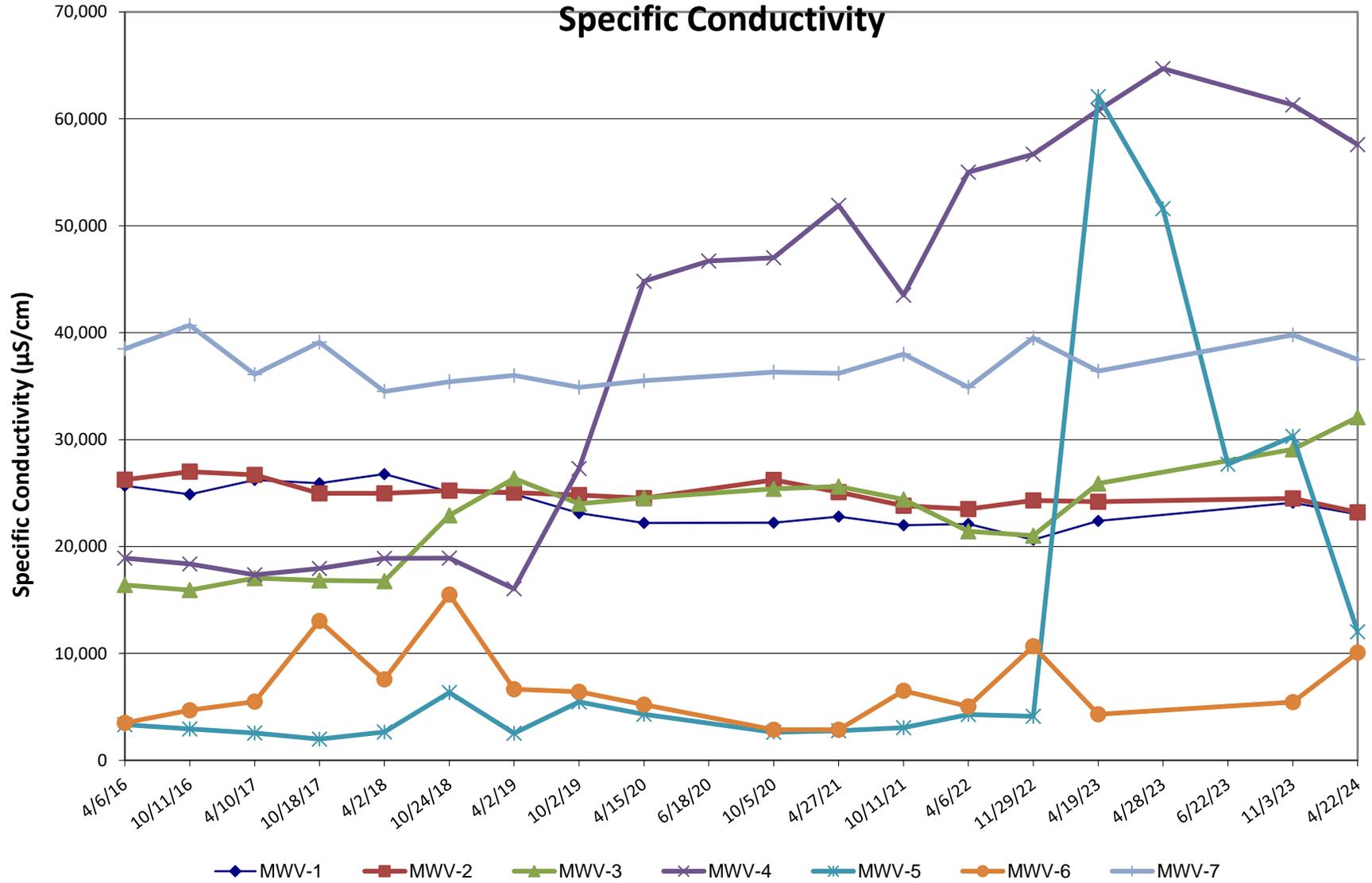


Region 2 Monitoring Wells

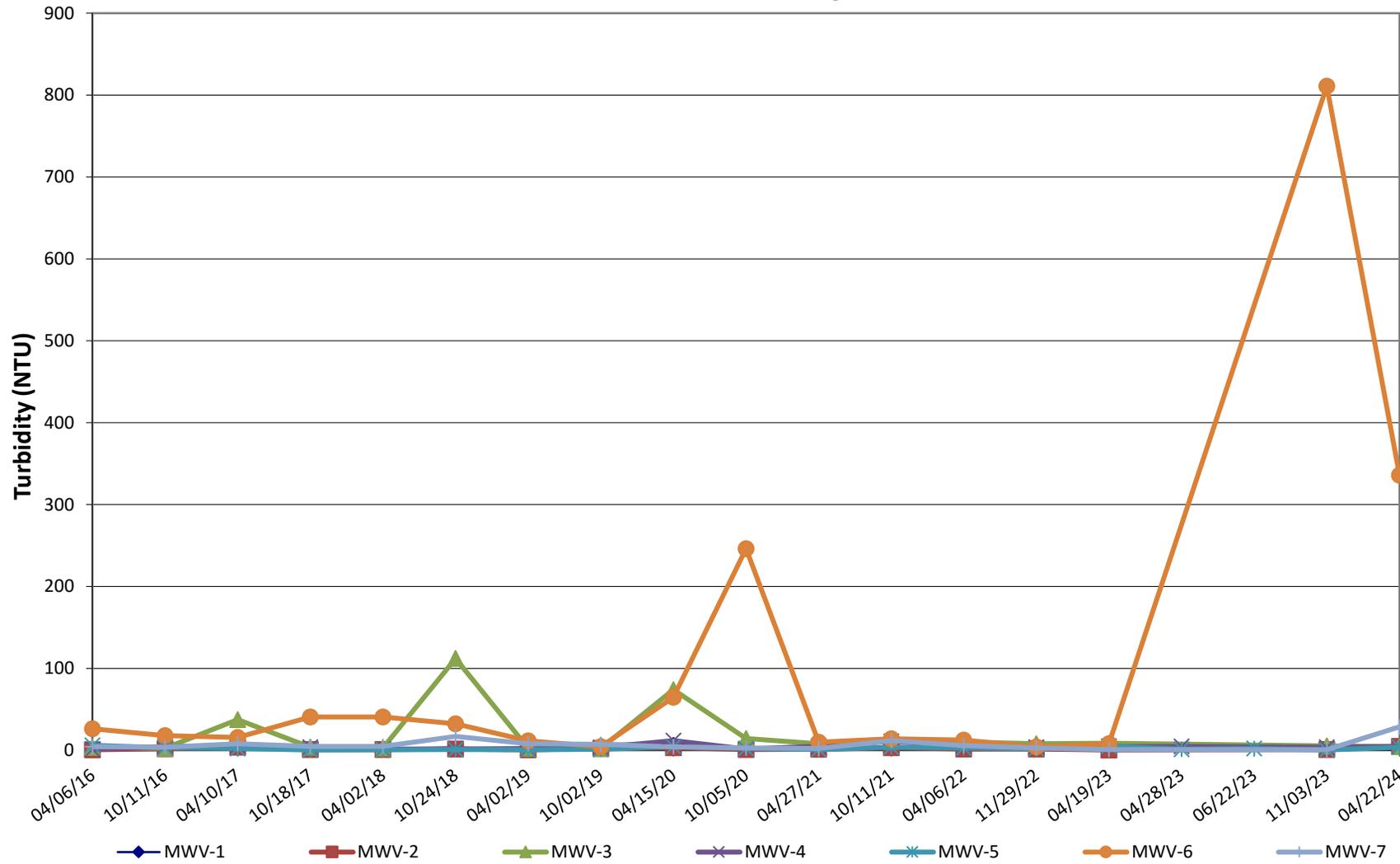
pH



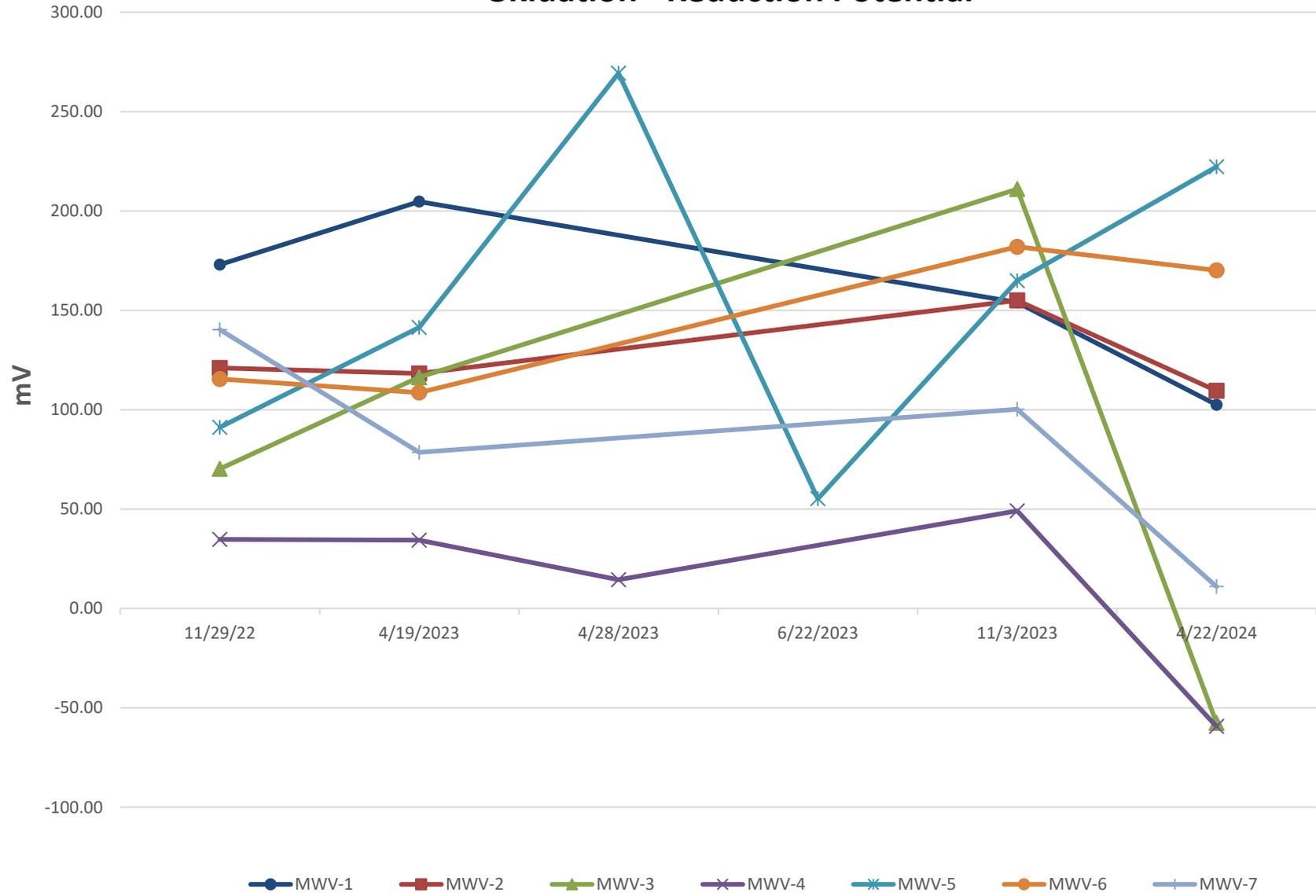
Region 2 Monitoring Wells Specific Conductivity



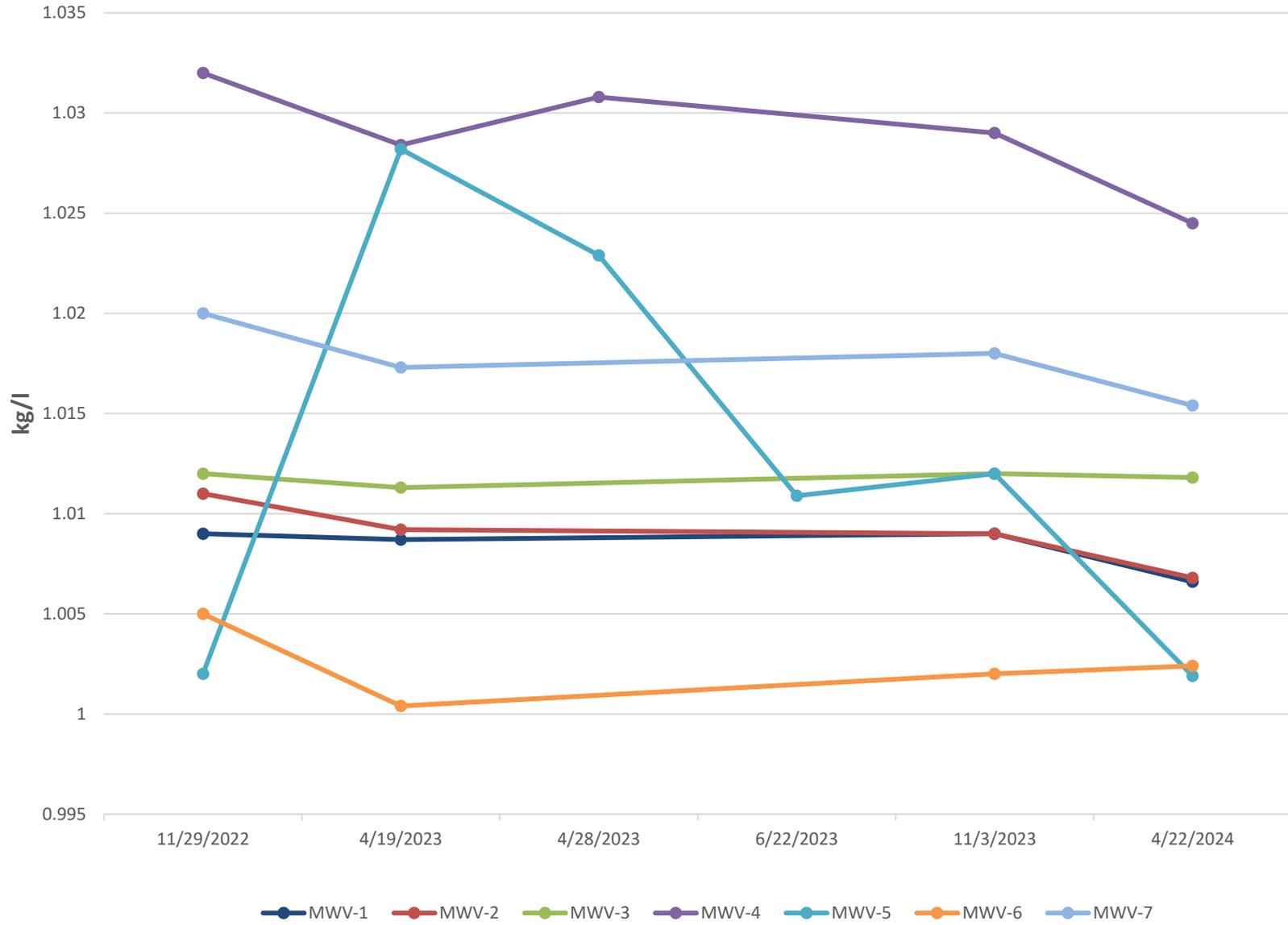
Region 2 Monitoring Wells Turbidity



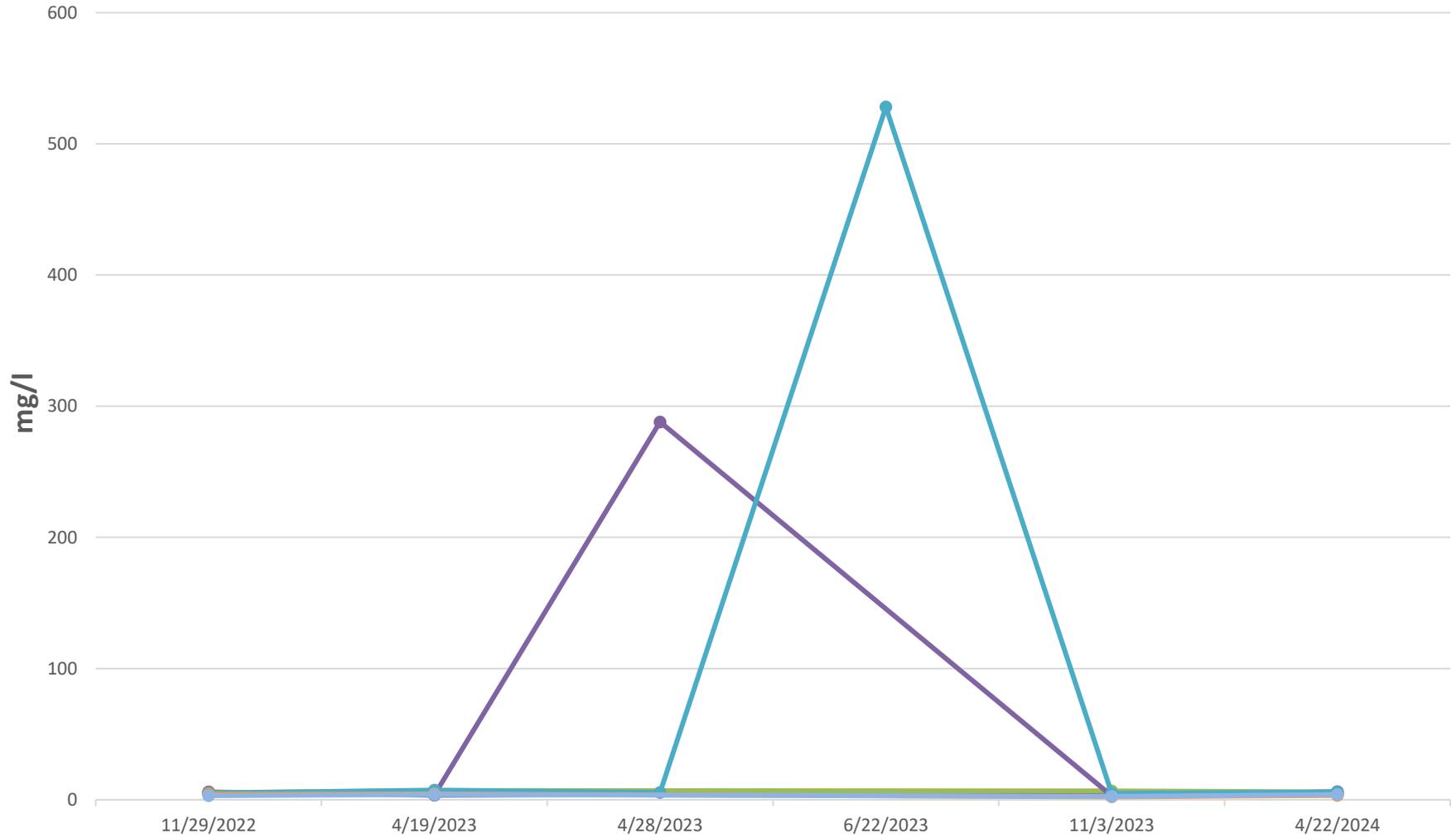
Region 2 Monitoring Wells Oxidation - Reduction Potential



Region 2 Monitoring Wells Density

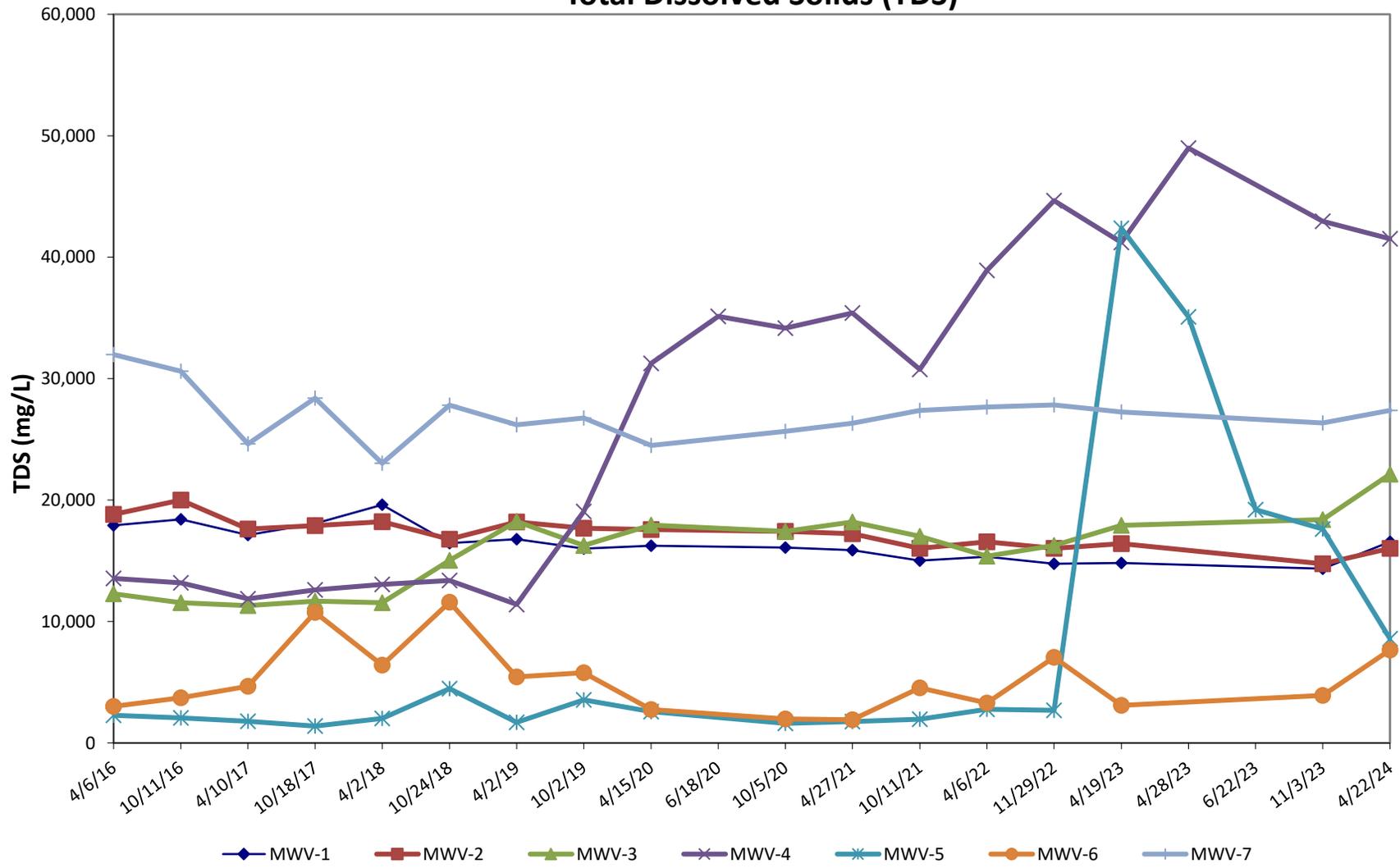


Region 2 Monitoring Wells Dissolved Oxygen

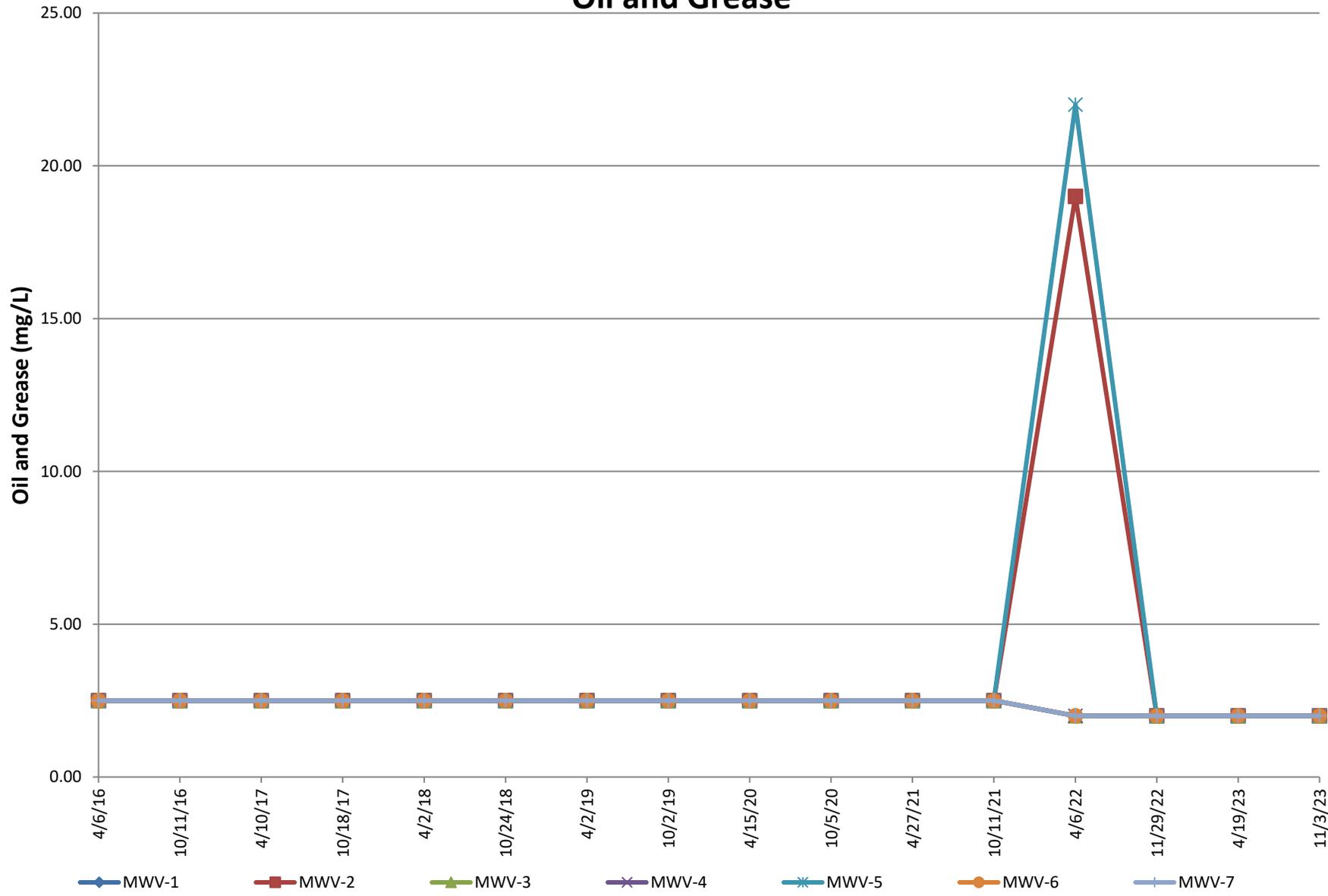


MWV-1 MWV-2 MWV-3 MWV-4 MWV-5 MWV-6 MWV-7

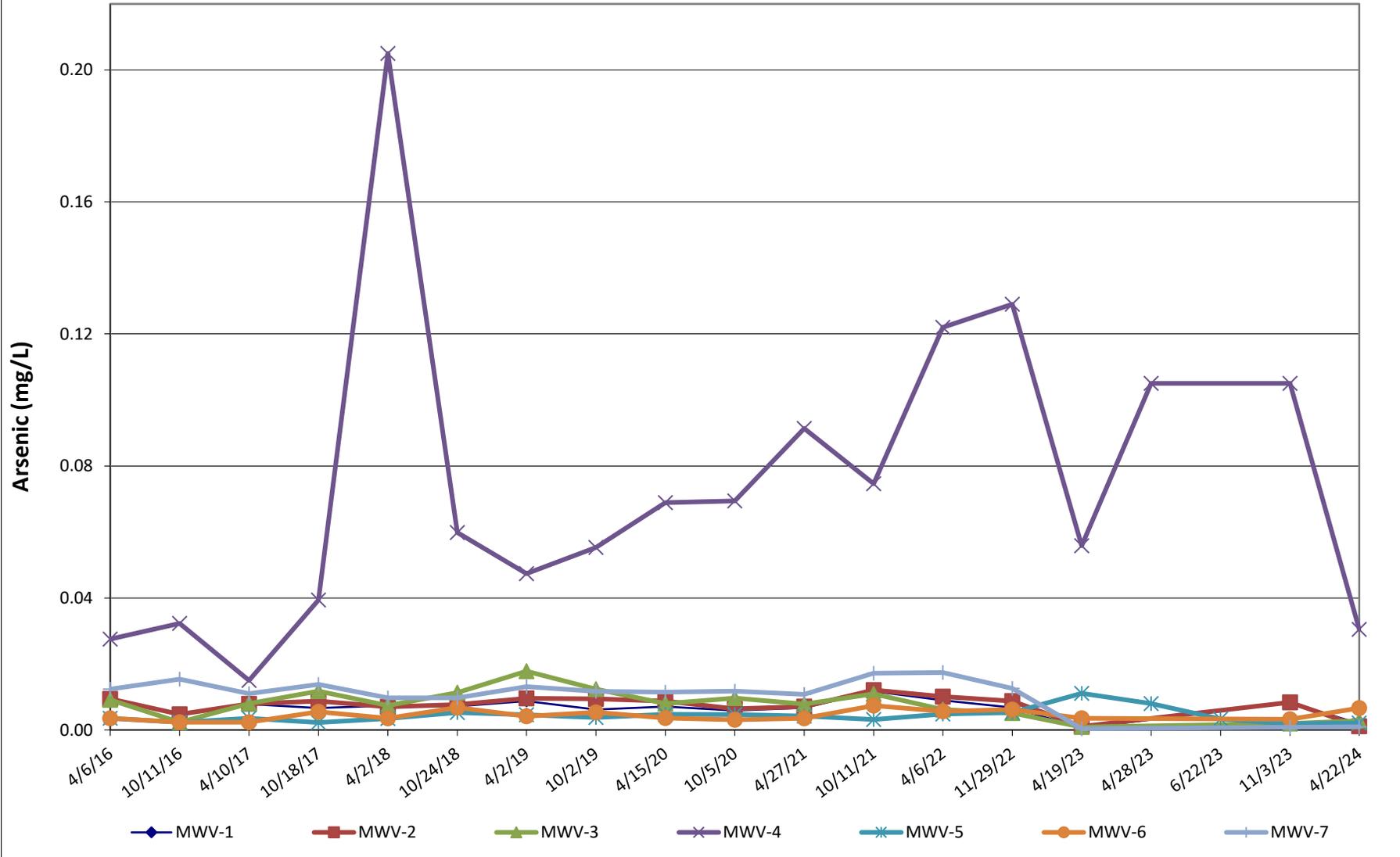
Region 2 Background and Monitoring Wells Total Dissolved Solids (TDS)



Region 2 Background and Monitoring Wells Oil and Grease

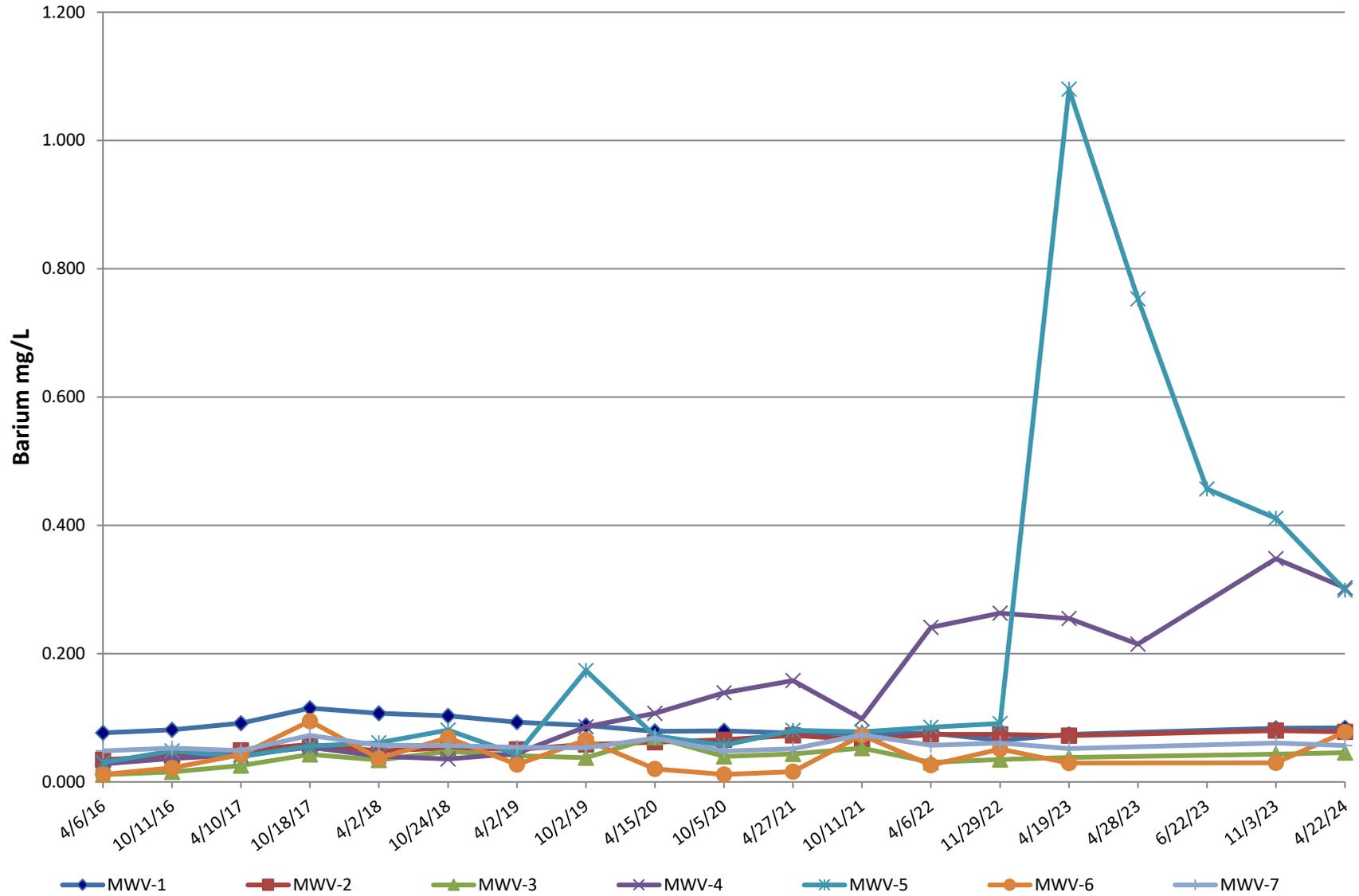


Region 2 Background and Monitoring Wells Arsenic

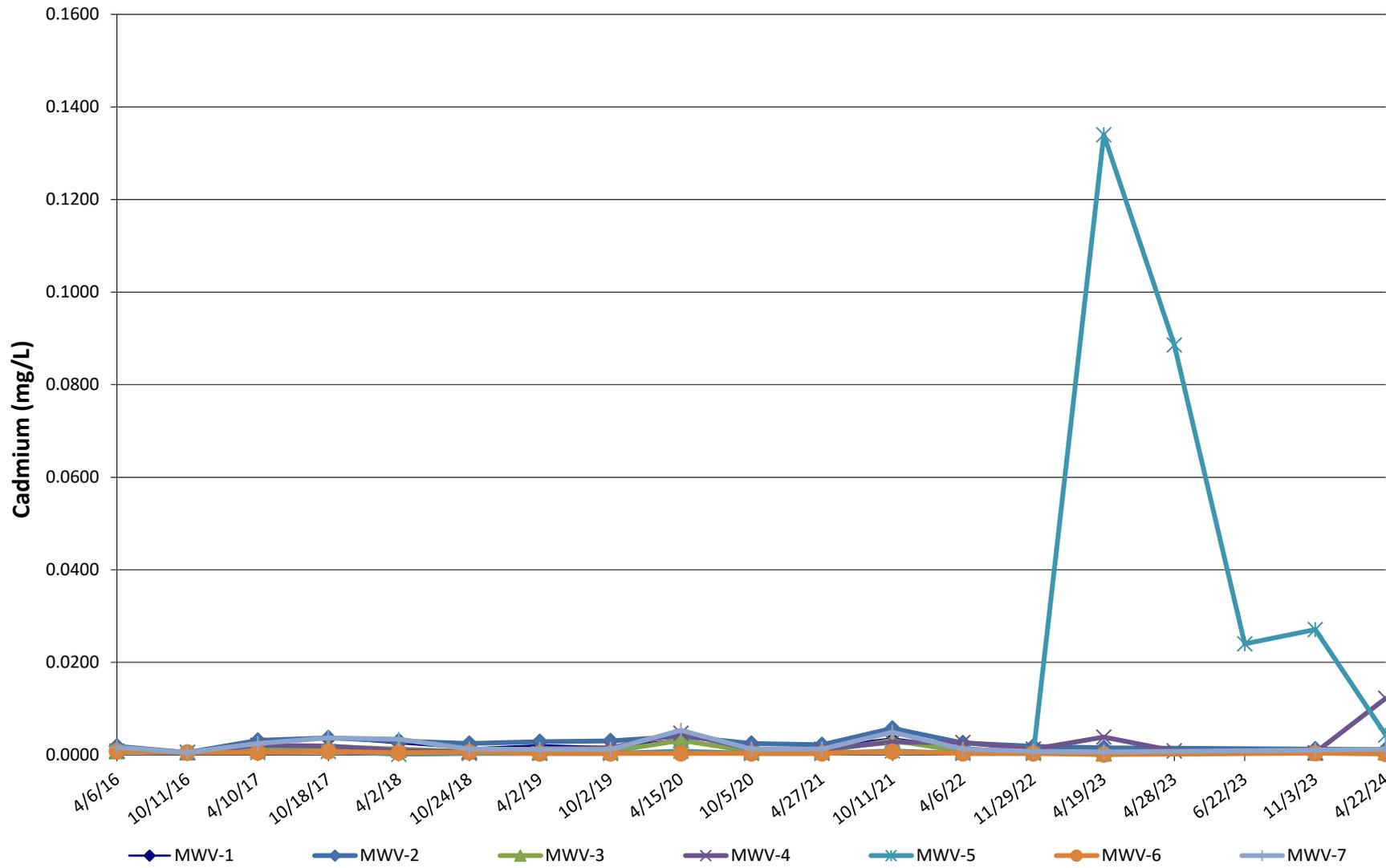


Region 2 Background and Monitoring Wells

Barium

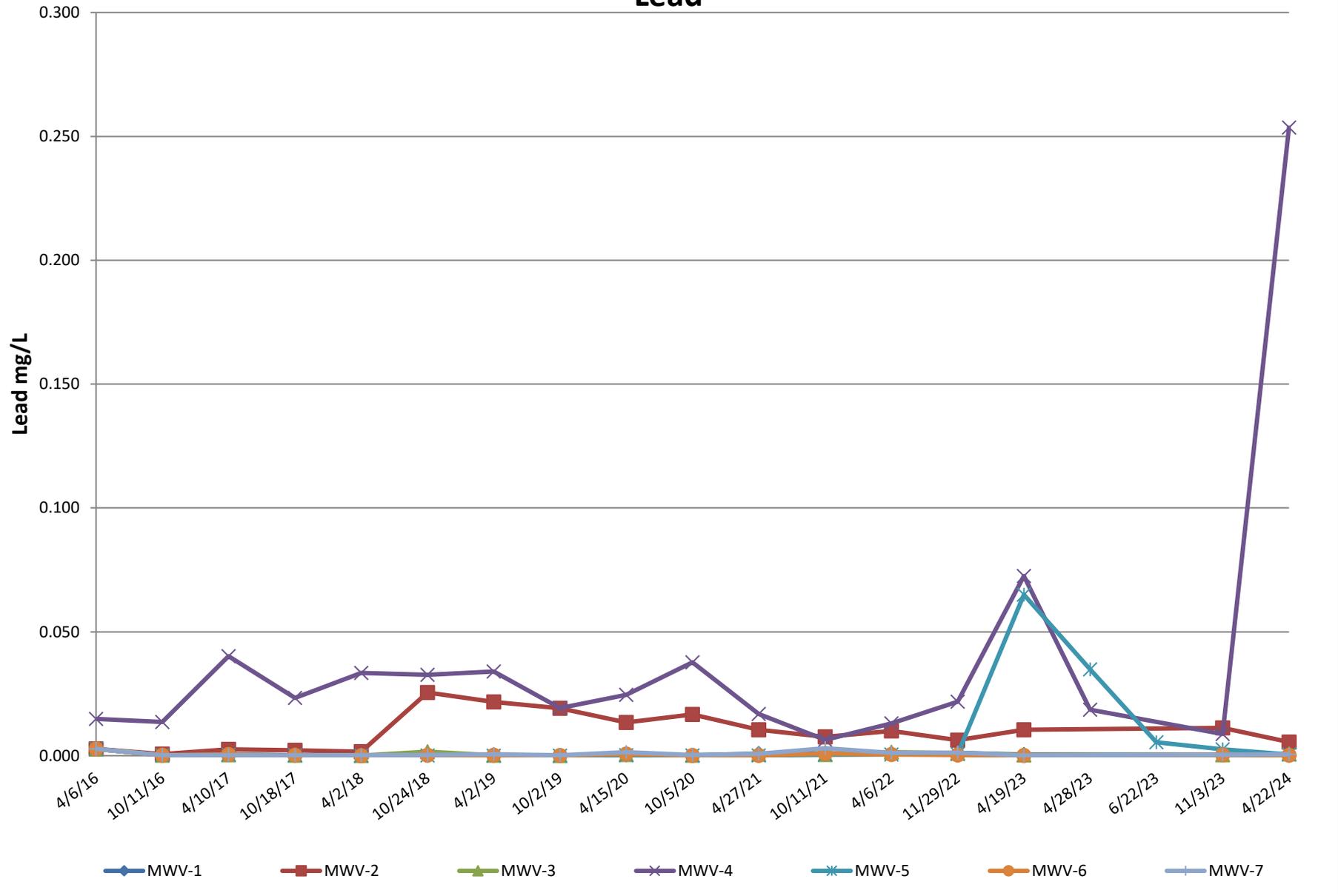


Region 2 Background and Monitoring Wells Cadmium



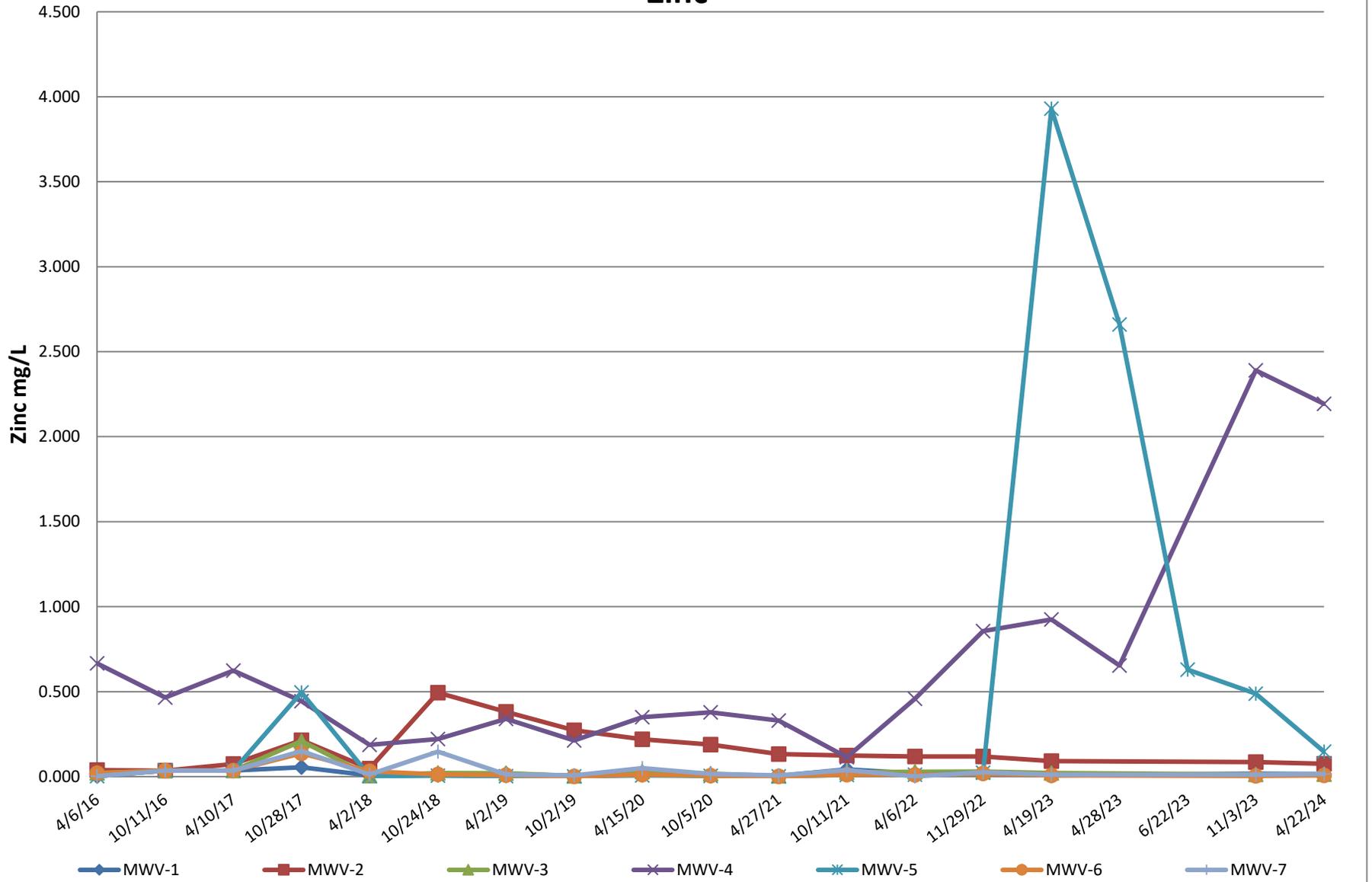
Region 2 Background and Monitoring Wells

Lead



Region 2 Background and Monitoring Wells

Zinc



Attachment E

Leachate Collection and Retrieval System Lab Data and
Inspection Sheets

General Information		
Date & Time: 1-5-24 8:40	Facility: OK	Vulcan
Personnel Conducting Manual Removal of Leachate: Cesar Diaz Mario M.		

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	4 ft	8:40 - 9:00	0

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	4 ft	10:00/10:20	0	0

Wildlife present (Yes/No) - No

Notes:

General Information		<i>OK</i>
Date & Time: <i>1-12-24 8:10</i>	Facility:	Vulcan
Personnel Conducting Manual Removal of Leachate: <i>Cesar Diaz, Mario Morales</i>		

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	<i>4 ft</i>	<i>8:10 - 8:40</i>	<i>5</i>

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	<i>4 ft</i>	<i>10:00 / 10:30</i>	<i>0</i>	<i>0.71 gals./day</i>

Wildlife present (Yes/No) - *NO*

Notes:

Brine Pond Leachate Sump Monitoring Form - Vulcan

General Information		OK
Date & Time:	1/19/24	Facility: Vulcan
Personnel Conducting Manual Removal of Leachate: <i>Mario Morales</i>		

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	6 ¹ / ₂ feet 6" inch	8:30 - 9:15	1

Second Measurement - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
Sampling Port	6 ft, 6" inch	11:30 - 12:15	0	0.14 gals./day

Notes:

Wildlife Present: NO

General Information	
Date & Time: 1-26-29 8:00 am	Facility: Vulcan
Personnel Conducting Manual Removal of Leachate: Mario Morales OK	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	5' feet 6" inches	8:00 - 9:00	0

Second Measurement LCRS - Return to each location 1 -2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
		11:45 - 12:45	0	0

Wildlife present (Yes/No) -

Notes:

0 Gallons Total

General Information	
Date & Time: 2-2-24	Facility: Vulcan
Personnel Conducting Manual Removal of Leachate: Cesar Diaz OK	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	3ft 5in	8:20 - 8:50	10

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	3ft 5in	10:10 / 10:10	0	1.43 gals./day

Wildlife present (Yes/No) - NO

Notes:

Brine Pond Leachate Sump Monitoring Form - Vulcan

General Information	
Date & Time: 2-9-24 8:45	Facility: Vulcan
Personnel Conducting Manual Removal of Leachate: Mario Morales	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	6' feet	8:45 - 9:45	0

Second Measurement - Return to each location 1 -2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
Sampling Port	6' feet	12:15 - 1:15	11:15 0 gallons	0

Notes:

General Information

Date & Time: <i>2/19/24</i>	Facility: Vulcan
Personnel Conducting Manual Removal of Leachate: <i>Maia Morales</i>	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	<i>6' feet 6" inches</i>	<i>8:15 - 9:00</i>	<i>0</i>

Second Measurement LCRS - Return to each location 1 -2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	<i>6' feet 6" inches</i>	<i>11:15 - 11:40</i>	<i>0</i>	<i>0</i>

Wildlife present (Yes/No) - *(No)*

Notes:

Brine Pond Leachate Sump Monitoring Form - Vulcan

General Information

Date & Time: 7-23-24 Facility: Vulcan

Personnel Conducting Manual Removal of Leachate: Mario Morales

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	<u>5' feet 2" inches</u>	<u>7:50 - 8:25</u>	<u>0</u>

Second Measurement - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
Sampling Port	<u>5' feet 2" inches</u>	<u>12:00 - 12:20</u>	<u>0</u>	<u>0</u>

Notes:

0 Gallons
Total

Brine Pond Leachate Sump Monitoring Form - Vulcan

General Information	
Date & Time: 3/1/24	Facility: Vulcan
Personnel Conducting Manual Removal of Leachate: Mario Morales	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	10' Feet	8:00 - 8:20	0

Second Measurement - Return to each location 1 -2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
Sampling Port	10' Feet	11:20 - 11:30	0	0

Notes:

0
Gallons Total

Brine Pond Leachate Sump Monitoring Form - Vulcan

General Information	
Date & Time: 7-8-24 8:00	Facility: Vulcan
Personnel Conducting Manual Removal of Leachate: Cesar Diaz	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port		8:00 8:20	0

Second Measurement - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	6 ^{ft} 8 ⁱⁿ			
Sampling Port	4.00	9:40/10:00	0	0

Notes:

Brine Pond Leachate Sump Monitoring Form - Vulcan

General Information	
Date & Time: 3-15-24 6:40	Facility: Vulcan
Personnel Conducting Manual Removal of Leachate: Cesar Diaz	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	6 ft	6:40/8:00	0

Second Measurement - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
Sampling Port	6 ft	9:00/9:20	0	0

Notes:

General Information	
Date & Time: 3-22-21 7:30	Facility: Vulcan
Personnel Conducting Manual Removal of Leachate: Cesar Diaz	OK

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	4 ft. 9 in	7:30 - 8:00	0

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
		10:25 10:50	0	0

Wildlife present (Yes/No) -

Notes:

Brine Pond Leachate Sump Monitoring Form - Vulcan

General Information	
Date & Time: 3-29-24 800	Facility: Vulcan
Personnel Conducting Manual Removal of Leachate: Casey Dier	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	4 ft 6 in	8:00 / 8:25	0

Second Measurement - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
Sampling Port	4 ft 6 in	10:00 10:20	0	0

Notes:

General Information	
Date & Time: 4-5-24 7:30	Facility: Vulcan
Personnel Conducting Manual Removal of Leachate: Cesar Diaz	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	6 ft 2 in	7:30 - 7:50	0

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	6 ft 2 in	9:50/10:10	0	0

Wildlife present (Yes/No) - No

Notes:

General Information

Date & Time: 4-12-24	Facility: Vulcan
Personnel Conducting Manual Removal of Leachate: Cesar Diaz	OK

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping		Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)			
Sampling Port	5ft 8" in		7:50 - 8:30	60

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	5ft 8" in	10:00 10:20	0	8.57 gals./day

Wildlife present (Yes/No) No

Notes:

Changed Pump 04/08/2024

General Information

Date & Time: 4-19-24 7:30	Facility: Vulcan
Personnel Conducting Manual Removal of Leachate: Cesar, Mario	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	6 ft 3 in	7:30 - 7:50	50

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	6 ft 3 in	11:50 12:10	0	7.14 gals./day

Wildlife present (Yes/No) No

Notes:

Brine Pond Leachate Sump Monitoring Form - Vulcan

General Information	
Date & Time: 4-26-24 8:00	Facility: Vulcan
Personnel Conducting Manual Removal of Leachate: Cesar, Mario	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	5ft 3"	8:00 - 8:30	90

Second Measurement - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
Sampling Port	5ft 3"	10:00 10:20	5	12.96 gals./day

Notes:

General Information	
Date & Time: 5-8-24 - 7:25	Facility: Vulcan OK
Personnel Conducting Manual Removal of Leachate: Cesar Diaz	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	6 ft	7:25 / 7:40	10

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	6 ft	8:20 8:40 8:35 8:50	0	1.43 gals./day

Wildlife present (Yes/No) -

Notes:

General Information	
Date & Time: 5-10-24 8:00	Facility: Vulcan
Personnel Conducting Manual Removal of Leachate: Cesar Perez	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	4 ft 8 in	8:00 - 8:20	20

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	4 ft 8 in	9:30/9:50	9:30 - 9 0	2.86 gals./day

Wildlife present (Yes/No) No

Notes:

General Information

Date & Time: 5-17-24	Facility: Vulcan
Personnel Conducting Manual Removal of Leachate: Mario Morales	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	6 ft	7:40 - 8:10	70

Second Measurement LCRS - Return to each location 1 -2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
Sampling Port	6 ft	12:00-12:50	30 Gal	14.29 gals./day

Wildlife present (Yes/No) -

Notes:

General Information

Date & Time: 5-24-21 8:00	Facility: Vulcan
Personnel Conducting Manual Removal of Leachate: Cesar Diaz	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	2ft 3in	8:00 - 8:30	10

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	2ft 3in	9:30 10:00	0	1.43 gals./day

Wildlife present (Yes/No) - No

Notes:

General Information

Date & Time: 5-31-24 7:40	Facility: Vulcan
Personnel Conducting Manual Removal of Leachate: Cesar Diaz	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	1ft 5"	7:40 - 8:20	120

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	1ft 5"	9:45 10:20	15	19.29 gals./day

Wildlife present (Yes/No) -

Notes:

General Information

Date & Time: 6-7-20 2:00 Facility: Vulcan

Personnel Conducting Manual Removal of Leachate: CESW Div 2

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping		Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)			
Sampling Port	2ft 5in		8:00 - 8:30	75

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	2ft 5in	9:10/10:00	0	10.71 gals./day

Wildlife present (Yes/No) No

Notes:

General Information	
Date & Time: 6-14-24	Facility: Vulcan
Personnel Conducting Manual Removal of Leachate: Cesar Diaz	OK

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	2ft	7:40 - 8:20	130

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	2ft	10:00 10:25	10	20 gals./day

Wildlife present (Yes/No) No

Notes:

General Information

Date & Time: 6/21/24 8:30 am

Facility:

Vulcan

Personnel Conducting Manual Removal of Leachate:

*Marta Morales***First Measurement** - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	4' 8" inches	8:30 - 9:00 am	5

Second Measurement LCRS - Return to each location 1 -2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
				0.71 gals./day

Wildlife present (Yes/No) -

Notes:

* Pump failed shortly after start up.

General Information

Date & Time: 6-28-24 7:50	Facility: Vulcan
Personnel Conducting Manual Removal of Leachate: Cesar / Mario	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	4 ft	7:50 - 8:40	125

Second Measurement LCRS - Return to each location 1 -2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	4 ft	12:00 12:40	60	26.43 gals./day

Wildlife present (Yes/No) -

Notes:

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information	
Date & Time: 1-5-24 7:00	Facility: OR. Hoch
Personnel Conducting Manual Removal of Leachate: Cesar Diaz Mario Morales	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	5 ft 6 in	7:10 - 8:00	100

Second Measurement LCRS - Return to each location 1 -2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	5 ft 6 in	11:00/11:30	5	15 gals./day

Wildlife present (Yes/No) - NO

Notes:

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information	
Date & Time: 1-12-24 7:00	Facility: Hoch
Personnel Conducting Manual Removal of Leachate: Cesar Diaz Mario Morales	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	3ft 6"	7:00 - 8:00	115

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	3ft 6"	11:00 - 11:20	0	16.43 gals./day

Wildlife present (Yes/No) - NO

Notes:

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information

Date & Time: <i>1/18/2011</i>	Facility: Hoch
Personnel Conducting Manual Removal of Leachate: <i>Mario Morales</i>	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	<i>6' feet</i>	<i>7:20 - 8:20</i>	<i>90</i>

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	<i>6' feet</i>	<i>9:20-10:20</i>	<i>5 gal. - 95 Total</i>	<i>13.57 gals./day</i>

Wildlife present (Yes/No) - No

Notes:

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information	
Date & Time: 1-26-24 7am	Facility: Hoch
Personnel Conducting Manual Removal of Leachate: Mario Morales OK	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	6' feet	7:00 - 8:00	110

Second Measurement LCRS - Return to each location 1 -2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	6' feet	9:15-10:15	9:15 - 5	16.43 gals./day

Wildlife present (Yes/No) -

Notes:

Total Gallons
115

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information	
Date & Time: 2-2-24 7:10	Facility: Hoch
Personnel Conducting Manual Removal of Leachate: Cesar Diaz OK	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	8 in	7:10 - 8:10	180

Second Measurement LCRS - Return to each location 1 -2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	8 in	11:00/11:30	25	29.29 gals./day

Wildlife present (Yes/No) - NO

Notes:

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information	
Date & Time: 2-9-24 7:30 am	Facility: Hoch
Personnel Conducting Manual Removal of Leachate: Mario Morales	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	6' feet 6" inches	7:30 am - 8:30	190

Second Measurement LCRS - Return to each location 1 -2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
			15 gallons	
	6' feet 6" inches	11:10	(205 Total)	29.29 gals./day

Wildlife present (Yes/No) -

Notes:

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information	
Date & Time: <i>2/19/24</i> <i>7:00</i>	Facility: Hoch
Personnel Conducting Manual Removal of Leachate: <i>Mario Morales</i>	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	<i>3' feet</i>	<i>7:00 - 8:00</i>	<i>215</i>

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
<i>Sampling Port</i>	<i>3' feet</i>	<i>9:15-10:</i>	██████████ <i>- 20 Gallons</i>	<i>23.50 gals./day</i>

Wildlife present (Yes/No) - No

Notes:

235 Gallons Total

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information	
Date & Time: 2/23/24	Facility: Hoch
Personnel Conducting Manual Removal of Leachate: Maria Novales	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	7' Feet	8:45 - 9:45	145 Gal

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	7' Feet	12:00 - 12:30	10 Gallons	38.75 gals./day

Wildlife present (Yes/No) No

Notes:

155 Gallons
Total

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information	
Date & Time: 3/1/24	Facility: Hoch
Personnel Conducting Manual Removal of Leachate: <i>Mark M... ..</i>	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	8' Feet 4" inches	7:50 - 8:50	190

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	8' Feet 4" inches	12:00	90	28.57 gals./day

Wildlife present (Yes/No) - No

Notes:

200
Gallons Total

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information	
Date & Time: 3-8-24 7:00	Facility: Hoch
Personnel Conducting Manual Removal of Leachate: Cesar Diaz	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	8 ft 5 in	7:00 - 7:10	125

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	8 ft 5 in	9:00 - 10:20	0	17.86 gals./day

Wildlife present (Yes/No) No

Notes:

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information	
Date & Time: 3-15-24 7:00	Facility: Hoch
Personnel Conducting Manual Removal of Leachate: CESW D102	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	5 ft	7:00 - 7:40	125

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	5 ft	10:00 10:20	20	20.71 gals./day

Wildlife present (Yes/No) No

Notes:

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information	
Date & Time: 3-22-24 6:40	Facility: Hoch
Personnel Conducting Manual Removal of Leachate: Cesar Diaz OK	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	5 ft 7 in	6:40 6:40 - 7:20	100

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	5 ft 7 in	8:30 8:50	10	15.71 gals./day

Wildlife present (Yes/No) - No

Notes:

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information	
Date & Time: 3-29-24 7:30	Facility: Hoch
Personnel Conducting Manual Removal of Leachate: Cesar Diaz	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	5ft 2"	7:30 - 8:00	125

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	5ft 2"	9:20 9:40	0	17.86 gals./day

Wildlife present (Yes/No) No

Notes:

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information	
Date & Time: 4-5-24 6:50	Facility: Hoch
Personnel Conducting Manual Removal of Leachate: Cesar Diaz	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	4 ft 8 in	6:50 7:20	150

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	4 ft 8 in	9:20-9:40	10	21.43 gals./day

Wildlife present (Yes/No) -

Notes:

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information	
Date & Time: 4-12-24 7:00	Facility: Hoch
Personnel Conducting Manual Removal of Leachate: Cesar Diaz OK	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	4 ft 2 in	7:00 7:40	110

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	4 ft 2 in	9:30 9:50	10	17.14 gals./day

Wildlife present (Yes/No) -

Notes:

General Information

Date & Time: 4-19-24 6:50 Facility: Hoch Vulcan
 Personnel Conducting Manual Removal of Leachate: CESU, Mario

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	4 ft	6:50 - 7:20	125

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	4 ft	11:00 11:40	10	19.29 gals./day

Wildlife present (Yes/No) No

Notes:

General Information 4-26-24

Date & Time: 4-26-24 7:00 Facility: Hoch ~~Vulcan~~

Personnel Conducting Manual Removal of Leachate: Cosu, Mario

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	3ft 5 in	7:00 7:40	140

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	3ft 5 in	9:30/9:50	0	20.00 gals./day

Wildlife present (Yes/No) -

Notes:

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information	
Date & Time: 5-3-24 6:40	Facility: Hoch OK
Personnel Conducting Manual Removal of Leachate: Cesar Diaz	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	3 ft 4 in	6:40 - 7:15	180

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	3 ft 4 in	8:20 8:35	10	27.14 gals./day

Wildlife present (Yes/No) No

Notes:

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information	
Date & Time: 5-10-21 7:00	Facility: Hoch
Personnel Conducting Manual Removal of Leachate: Cesar Diaz	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	5 ft 8 in	7:10 - 7:50	175

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	5 ft 8 in			25.00 gals./day

Wildlife present (Yes/No) No

Notes:

Unable to do Second Measurement due to a leak on one of the houses

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information	
Date & Time: 8/17/24	Facility: Hoch
Personnel Conducting Manual Removal of Leachate: Maria Morales	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	3 rd 6' in.	9:00 - 10:00	160 Gal.

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	3 rd 6' in.	11:30 - 12:00	20 Gal	25.71 gals./day

Wildlife present (Yes/No) -

Notes:

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information

Date & Time: 5-21-24 7:00	Facility: Hoch
Personnel Conducting Manual Removal of Leachate: Cesar Diaz	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	6ft 3in	7:00 - 7:40	150

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/Accumulation Rate (Environmental Services)
	6ft 3in	9:00 9:20	150 - 20	24.29 gals./day

Wildlife present (Yes/No) No

Notes:

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information	
Date & Time: 5-31-24 6:50	Facility: Hoch
Personnel Conducting Manual Removal of Leachate: CSU Diaz	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	4ft 8in	6:50-7:30	120

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	4ft 8in	9:00 9:30	10	18.57 gals./day

Wildlife present (Yes/No) -

Notes:

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information	
Date & Time: 6-7-21 7:10	Facility: Hoch
Personnel Conducting Manual Removal of Leachate: Cesar Diaz	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	2 ft	7:10 - 7:50	125

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	2 ft	9:10/9:30	10	19.29 gals./day

Wildlife present (Yes/No) No

Notes:

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information	
Date & Time: 6-14-24 6:50	Facility: Hoch
Personnel Conducting Manual Removal of Leachate: Casw Diaz OK	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping		Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)			
Sampling Port	10.1		6:50 - 7:30	175

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	10.1	9:30 9:50	25	28.57 gals./day

Wildlife present (Yes/No) - No

Notes:

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information	
Date & Time: 6/21/24 7:20 am	Facility: Hoch
Personnel Conducting Manual Removal of Leachate: Mario Morales	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	7' Feet	7:25 - 8:25	125 Gal

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
Sampling Port	7' Feet	11:15-12	10 Gal. 10 Gal.	19.29 gals./day

Wildlife present (Yes/No) No

Notes:

135 Gal Total

Brine Pond Leachate Sump Monitoring Form - Hoch

General Information	
Date & Time: 6-28-24 7:00	Facility: Hoch
Personnel Conducting Manual Removal of Leachate: CS&I / M6W10	

First Measurement - Record pond and sump water levels prior to pumping. Pump until all liquid has been removed from sump or for 1 hour (if unable to remove all liquid with continuous pumping).

Location	Before Pumping	Pump Start and End Time	Volume Removed (gallons)
	Pond Level (measured from below free-board marker)		
Sampling Port	4ft 3"	7:00 7:40	100

Second Measurement LCRS - Return to each location 1-2 hours after pumping at that location stopped. Record the pond and amount of leachate removed.

Location	Brine Pond Level	Pump Start and End Time	Volume Removed (gallons)	Daily Leakage/ Accumulation Rate (Environmental Services)
	4ft 3"	11:30 / 12:00	100 30	18.57 gals./day

Wildlife present (Yes/No) - No

Notes:

Attachment F

Brine Pond Solids and Liquids Monitoring

Region 2 Surface Impoundment Monitoring Brine Pond Solids & Liquids (1SA24)

Board Order Number R7-2022-0011

Sampler(s): Ricky Lee

Constituents	Units	Vulcan Brine Pond Solid	Hoch Brine Pond Solid	Method
Date Sampled		2/16/2024	2/16/2024	SOP AS 813v01
Arsenic	ug/kg	375,000	954,000	EPA 6010B
Barium	ug/kg	738,000	2,340,000	EPA 6010B
Cadmium	ug/kg	5,010	2,880	EPA 6010B
Lead	ug/kg	141,000	248,000	EPA 6010B
Zinc	ug/kg	218,000	468,000	EPA 6010B

Constituents	Units	Vulcan Brine Pond Liquid	Hoch Brine Pond Liquid	Method
Date Sampled		2/23/2024	2/23/2024	SOP AS 813v01
Arsenic	µg/L	<1020	135	EPA 200.7
Barium	µg/L	19,600	928	EPA 200.7
Cadmium	µg/L	319	22	EPA 200.7
Lead	µg/L	<700	<35.0	EPA 200.7
Zinc	µg/L	25,900	3,550	EPA 200.7
pH	Units	6.20	7.24	SM 4500 H+B
Specific Conductance	µS/cm	74,700	12,750	SM 2510 C
Total Dissolved Solids	mg/L	55,000	6,690	SM 2540 C
Chloride	mg/L	40,000	3,900	SM 4500-Cl-C
Sulfate	mg/L	460.0	260	EPA 300.0
Total Alkalinity	mg/L	<20.0	330	SM 2320B
Bicarbonate Alkalinity	mg/L	<24.0	400	SM 2320B
Carbonate Alkalinity	mg/L	<20.0	<20.0	SM 2320B
Calcium	mg/L	5,150	621	EPA 200.7
Magnesium	mg/L	17.1	9.84	EPA 200.7
Sodium	mg/L	11,000	1,400	EPA 200.7
Potassium	mg/L	2,780	383	EPA 200.7

Please refer to the complete analytical report in the attachment.

Analysis by: CalEnergy Operating Corporation, ELAP Certificate #2612

Weck Laboratories Inc, ELAP Certificate # 1132

EPA = Environmental Protection Agency

SM = Standard Methods

Vulcan Monthly Brine Pond Monitoring and Leachate Collection and Retrieval System (LCRS) Summary Report - WDR: R7-2022-0011						
	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24
Freeboard Measurement:						
Date:	1/19/2024	2/21/2024	3/20/2024	4/22/2024	5/22/2024	6/26/2024
Percent solids at surface (%)	30%	20%	30%	40%	55%	50%
Freeboard (ft.)	2.6	2	5	4	4	4
Wildlife Present: (Yes / No)	No	No	No	No	No	No
Leak Detection System (LDS) Monitoring						
Date:	1/19/2024	2/21/2024	3/20/2024	4/22/2024	5/22/2024	6/26/2024
Liquid Present: (Yes / No)	No	No	No	No	No	No
Average & Maximum monthly volume of waste water discharged into the brine pond	Please refer to Part IV, Section A.1.i and A.1.j. of the report					
Average & Maximum daily volume of waste water removed from the brine pond	Please refer to Part IV, Section A.1.i and A.1.j. of the report					
Observations: Is there evidence of settlement, and or subsidence along the visible areas of the surface impoundments e.g. top of berm, outer slopes, & upper region of the inner slope.	Please refer to Part IV, Section A.1.i and A.1.j. of the report					
Name of inspector: Norma Perez (Associate Environmental Coordinator)/Brianna Ramirez (Senior Environmental Coordinator)						

Hoch Monthly Brine Pond Monitoring and Leachate Collection and Retrieval System (LCRS) Summary Report - Board Order R7-2022-0011						
	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24
Freeboard Measurement:						
Date:	1/19/2024	2/21/2024	3/20/2024	4/22/2024	5/22/2024	6/26/2024
Percent solids at surface (%)	80%	50%	50%	50%	50%	45%
Freeboard (ft.)	5ft	2	5	3	5	5
Wildlife Present: (Yes / No)	No	No	No	No	No	No
Leak Collection & Removal System						
Date:	1/19/2024	2/21/2024	3/20/2024	4/22/2024	5/22/2024	6/26/2024
Liquid Present: (Yes / No)						
TW-1	Yes	Yes	Yes	Yes	Yes	Yes
TW-2	No	No	No	No	No	No
TW-3	No	No	No	No	No	No
TW-4	No	No	No	No	No	No
TW-5	No	No	No	No	No	No
Average & Maximum monthly volume of waste water discharged into the brine pond	Please refer to Part IV, Section A.1.i and A.1.j. of the report					
Average & Maximum daily volume of waste water removed from the brine pond	Please refer to Part IV, Section A.1.i and A.1.j. of the report					
Observations: Is there evidence of settlement, and or subsidence along the visible areas of the surface impoundments e.g. top of berm, outer slopes, & upper region of the inner slope.	Please refer to Part IV, Section A.1.i and A.1.j. of the report					
Name of inspector: Norma Perez (Associate Environmental Coordinator)/Brianna Ramirez (Senior Environmental Coordinator)						



CalEnergy Operating Corporation
7030 Gentry Road
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Website: www.calenergy.com

March 22, 2024

Anoop Sukumaran
CalEnergy Operating Corporation
7030 Gentry Road
Calipatria, CA 92233

RE: Brine Pond

Order No.: 2402033

Dear Anoop Sukumaran:

CalEnergy Operating Corporation received 6 sample(s) on 2/23/2024 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative. Analytical results designated with a "J" qualifier are estimated and represent a detection above the Method Detection Limit (MDL) and less than the Reporting Limit (PQL). These analytes are not reviewed nor narrated as to whether they are laboratory artifacts.

Quality control data is within laboratory defined or method specified acceptance limits except if noted.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

A handwritten signature in black ink that reads "Yanqiu Wu".

Yanqiu Wu
Director, Engineering & Laboratory Services
7030 Gentry Road
Calipatria, CA 92233



CalEnergy Operating Corporation
7030 Gentry Road
Calipatria, CA 92233
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Case Narrative

WO#: 2402033
Date: 3/22/2024

CLIENT: CalEnergy
Project: Brine Pond

This report in its entirety consists of the documents listed below. All documents contain the CalEnergy Operating Corporation Work Order Number assigned to this report.

1. Paginated Report including: Case Narrative, Analytical Results and Applicable Quality Control Summary Reports.
2. A Cover Letter that immediately precedes the Paginated Report.
3. Paginated copies of the Chain of Custody Documents supplied with this sample set.

Concentrations reported with a J flag in the Qual field are values below the reporting limit (RL) but greater than the established method detection limit (MDL). There is greater uncertainty associated with these results and data should be considered as estimated.

Concentrations reported with an E flag in the Qual field are values that exceed the upper quantification range. There is greater uncertainty associated with these results and data should be considered as estimated.

Any comments or problems with the analytical events associated with this report are noted below.



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Analytical Report

(consolidated)

WO#: 2402033

Date Reported: 3/22/2024

CLIENT: CalEnergy **Collection Date:** 2/23/2024 9:50:00 AM
Project: Brine Pond
Lab ID: 2402033-001 **Matrix:** LIQUID
Client Sample ID: Region 1 Brine Pond - Liquid

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PH IN WATER BY POTENTIOMETRY					A4500-H+B	Analyst: RL
pH	4.86	1.00		pH Units	1	2/23/2024 2:39:00 PM
Temp	32.3	0		DEG C	1	2/23/2024 2:39:00 PM
BRINE POND GRAVIMETRIC DETERMINATION OF FILTERABLE RESIDUE					A2540C	Analyst: EAM
Residue, Dissolved	81400	10.00		mg/L	1	2/26/2024 2:20:00 PM
BRINE POND MEASUREMENT OF CONDUCTANCE @ 25° C					A2510B	Analyst: RL
Specific Conductivity	100200	10.00		µmhos/cm	1	2/23/2024 2:39:00 PM
TRACE ELEMENTS IN WATER AND WASTES BY ICP-OES					E200.7 BP	Analyst: ACJR
Arsenic	0.560	1.02	J	mg/L	20	3/20/2024 1:33:34 PM
Barium	18.9	0.240		mg/L	20	3/20/2024 1:33:34 PM
Cadmium	0.371	0.200		mg/L	20	3/20/2024 1:33:34 PM
Lead	17.2	0.700		mg/L	20	3/20/2024 1:33:34 PM
Zinc	88.9	0.200		mg/L	20	3/20/2024 1:33:34 PM
TRACE ELEMENTS IN WATER AND WASTES BY ICP-OES					E200.7	Analyst: RV
Calcium	8340	14.0		mg/L	400	3/15/2024 12:14:30 PM
Magnesium	27.3	0.600		mg/L	20	3/15/2024 12:36:25 PM
Potassium	4270	88.8		mg/L	400	3/15/2024 12:14:30 PM
Sodium	17400	48.8		mg/L	400	3/15/2024 12:14:30 PM

Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit
 PL Permit Limit RL Reporting Detection Limit
 U Samples with CalcVal < MDL W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 2402033

Date Reported: 3/22/2024

CLIENT: CalEnergy **Collection Date:** 2/23/2024 12:00:00 PM
Project: Brine Pond
Lab ID: 2402033-002 **Matrix:** LIQUID
Client Sample ID: Vulcan Brine Pond - Liquid

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PH IN WATER BY POTENTIOMETRY					A4500-H+B	Analyst: RL
pH	6.20	1.00		pH Units	1	2/23/2024 2:39:00 PM
Temp	28.3	0		DEG C	1	2/23/2024 2:39:00 PM
BRINE POND GRAVIMETRIC DETERMINATION OF FILTERABLE RESIDUE					A2540C	Analyst: EAM
Residue, Dissolved	55000	10.00		mg/L	1	2/26/2024 2:20:00 PM
BRINE POND MEASUREMENT OF CONDUCTANCE @ 25° C					A2510B	Analyst: RL
Specific Conductivity	74700	10.00		µmhos/cm	1	2/23/2024 2:39:00 PM
TRACE ELEMENTS IN WATER AND WASTES BY ICP-OES					E200.7 BP	Analyst: ACJR
Arsenic	ND	1.02	U	mg/L	20	3/20/2024 1:36:55 PM
Barium	19.6	0.240		mg/L	20	3/20/2024 1:36:55 PM
Cadmium	0.319	0.200		mg/L	20	3/20/2024 1:36:55 PM
Lead	ND	0.700	U	mg/L	20	3/20/2024 1:36:55 PM
Zinc	25.9	0.200		mg/L	20	3/20/2024 1:36:55 PM
TRACE ELEMENTS IN WATER AND WASTES BY ICP-OES					E200.7	Analyst: RV
Calcium	5150	7.00		mg/L	200	3/15/2024 12:16:27 PM
Magnesium	17.1	0.600		mg/L	20	3/15/2024 12:38:38 PM
Potassium	2780	44.4		mg/L	200	3/15/2024 12:16:27 PM
Sodium	11000	24.4		mg/L	200	3/15/2024 12:16:27 PM

Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit
 PL Permit Limit RL Reporting Detection Limit
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Analytical Report

(consolidated)

WO#: 2402033

Date Reported: 3/22/2024

CLIENT: CalEnergy **Collection Date:** 2/23/2024 11:30:00 AM
Project: Brine Pond
Lab ID: 2402033-003 **Matrix:** LIQUID
Client Sample ID: Hoch Brine Pond - Liquid

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PH IN WATER BY POTENTIOMETRY			A4500-H+B		Analyst: RL	
pH	7.24	1.00		pH Units	1	2/23/2024 2:39:00 PM
Temp	23.4	0		DEG C	1	2/23/2024 2:39:00 PM
BRINE POND GRAVIMETRIC DETERMINATION OF FILTERABLE RESIDUE			A2540C		Analyst: EAM	
Residue, Dissolved	6690	10.00		mg/L	1	2/26/2024 2:20:00 PM
BRINE POND MEASUREMENT OF CONDUCTANCE @ 25° C			A2510B		Analyst: RL	
Specific Conductivity	12750	10.00		µmhos/cm	1	2/23/2024 2:39:00 PM
TRACE ELEMENTS IN WATER AND WASTES BY ICP-OES			E200.7 BP		Analyst: ACJR	
Arsenic	0.135	0.0510		mg/L	1	3/20/2024 1:41:17 PM
Barium	0.928	0.0120		mg/L	1	3/20/2024 1:41:17 PM
Cadmium	0.0220	0.0100		mg/L	1	3/20/2024 1:41:17 PM
Lead	ND	0.0350	U	mg/L	1	3/20/2024 1:41:17 PM
Zinc	3.55	0.0100		mg/L	1	3/20/2024 1:41:17 PM
TRACE ELEMENTS IN WATER AND WASTES BY ICP-OES			E200.7		Analyst: RV	
Calcium	621	3.50		mg/L	100	3/15/2024 12:18:40 PM
Magnesium	9.84	0.600		mg/L	20	3/15/2024 12:40:50 PM
Potassium	383	22.2		mg/L	100	3/15/2024 12:18:40 PM
Sodium	1400	12.2		mg/L	100	3/15/2024 12:18:40 PM

Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit
 PL Permit Limit RL Reporting Detection Limit
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Analytical Report

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WO#: 2402033

Date Reported: 3/22/2024

CLIENT: CalEnergy **Collection Date:** 2/23/2024 1:55:00 PM
Project: Brine Pond
Lab ID: 2402033-004 **Matrix:** LIQUID
Client Sample ID: Elmore Brine Pond - Liquid

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PH IN WATER BY POTENTIOMETRY					A4500-H+B	Analyst: RL
pH	5.37	1.00		pH Units	1	2/23/2024 2:39:00 PM
Temp	29.5	0		DEG C	1	2/23/2024 2:39:00 PM
BRINE POND GRAVIMETRIC DETERMINATION OF FILTERABLE RESIDUE					A2540C	Analyst: EAM
Residue, Dissolved	162200	10.00		mg/L	1	2/26/2024 2:20:00 PM
BRINE POND MEASUREMENT OF CONDUCTANCE @ 25° C					A2510B	Analyst: RL
Specific Conductivity	183800	10.00		µmhos/cm	1	2/23/2024 2:39:00 PM
TRACE ELEMENTS IN WATER AND WASTES BY ICP-OES					E200.7 BP	Analyst: ACJR
Arsenic	1.67	1.02		mg/L	20	3/20/2024 1:38:00 PM
Barium	39.5	0.240		mg/L	20	3/20/2024 1:38:00 PM
Cadmium	1.28	0.200		mg/L	20	3/20/2024 1:38:00 PM
Lead	29.2	0.700		mg/L	20	3/20/2024 1:38:00 PM
Zinc	203	0.200		mg/L	20	3/20/2024 1:38:00 PM
TRACE ELEMENTS IN WATER AND WASTES BY ICP-OES					E200.7	Analyst: RV
Calcium	16300	35.0		mg/L	1000	3/15/2024 12:25:08 PM
Magnesium	38.0	0.600		mg/L	20	3/15/2024 12:47:21 PM
Potassium	8750	222		mg/L	1000	3/15/2024 12:25:08 PM
Sodium	33700	122		mg/L	1000	3/15/2024 12:25:08 PM

Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit
 PL Permit Limit RL Reporting Detection Limit
 U Samples with CalcVal < MDL W Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 2402033

Date Reported: 3/22/2024

CLIENT: CalEnergy **Collection Date:** 2/23/2024 1:30:00 PM
Project: Brine Pond
Lab ID: 2402033-005 **Matrix:** LIQUID
Client Sample ID: Leathers Brine Pond - Liquid

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PH IN WATER BY POTENTIOMETRY					A4500-H+B	Analyst: RL
pH	4.62	1.00		pH Units	1	2/23/2024 2:39:00 PM
Temp	23.7	0		DEG C	1	2/23/2024 2:39:00 PM
BRINE POND GRAVIMETRIC DETERMINATION OF FILTERABLE RESIDUE					A2540C	Analyst: EAM
Residue, Dissolved	165200	10.00		mg/L	1	2/26/2024 2:20:00 PM
BRINE POND MEASUREMENT OF CONDUCTANCE @ 25° C					A2510B	Analyst: RL
Specific Conductivity	183500	10.00		µmhos/cm	1	2/23/2024 2:39:00 PM
TRACE ELEMENTS IN WATER AND WASTES BY ICP-OES					E200.7 BP	Analyst: ACJR
Arsenic	ND	1.02	U	mg/L	20	3/20/2024 1:39:07 PM
Barium	21.9	0.240		mg/L	20	3/20/2024 1:39:07 PM
Cadmium	1.33	0.200		mg/L	20	3/20/2024 1:39:07 PM
Lead	26.6	0.700		mg/L	20	3/20/2024 1:39:07 PM
Zinc	190	0.200		mg/L	20	3/20/2024 1:39:07 PM
TRACE ELEMENTS IN WATER AND WASTES BY ICP-OES					E200.7	Analyst: RV
Calcium	16900	35.0		mg/L	1000	3/15/2024 12:27:18 PM
Magnesium	106	0.600		mg/L	20	3/15/2024 12:49:32 PM
Potassium	9120	222		mg/L	1000	3/15/2024 12:27:18 PM
Sodium	33100	122		mg/L	1000	3/15/2024 12:27:18 PM

Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit
 PL Permit Limit RL Reporting Detection Limit
 U Samples with CalcVal < MDL W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: **2402033**

Date Reported: **3/22/2024**

CLIENT: CalEnergy **Collection Date:** 2/23/2024 9:50:00 AM
Project: Brine Pond
Lab ID: 2402033-006 **Matrix:** LIQUID
Client Sample ID: Region 1 Dup Brine Pond - Liquid

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PH IN WATER BY POTENTIOMETRY					A4500-H+B	Analyst: RL
pH	4.83	1.00		pH Units	1	2/23/2024 2:39:00 PM
Temp	32.2	0		DEG C	1	2/23/2024 2:39:00 PM
BRINE POND GRAVIMETRIC DETERMINATION OF FILTERABLE RESIDUE					A2540C	Analyst: EAM
Residue, Dissolved	84400	10.00		mg/L	1	2/26/2024 2:20:00 PM
BRINE POND MEASUREMENT OF CONDUCTANCE @ 25° C					A2510B	Analyst: RL
Specific Conductivity	100400	10.00		µmhos/cm	1	2/23/2024 2:39:00 PM
TRACE ELEMENTS IN WATER AND WASTES BY ICP-OES					E200.7 BP	Analyst: ACJR
Arsenic	ND	1.02	U	mg/L	20	3/20/2024 1:40:12 PM
Barium	19.2	0.240		mg/L	20	3/20/2024 1:40:12 PM
Cadmium	0.404	0.200		mg/L	20	3/20/2024 1:40:12 PM
Lead	17.4	0.700		mg/L	20	3/20/2024 1:40:12 PM
Zinc	90.2	0.200		mg/L	20	3/20/2024 1:40:12 PM
TRACE ELEMENTS IN WATER AND WASTES BY ICP-OES					E200.7	Analyst: RV
Calcium	8280	14.0		mg/L	400	3/15/2024 12:29:27 PM
Magnesium	28.6	0.600		mg/L	20	3/15/2024 12:51:45 PM
Potassium	4230	88.8		mg/L	400	3/15/2024 12:29:27 PM
Sodium	17500	48.8		mg/L	400	3/15/2024 12:29:27 PM

Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit
 PL Permit Limit RL Reporting Detection Limit
 U Samples with CalcVal < MDL W Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 2402033

22-Mar-24

Client: CalEnergy
Project: Brine Pond

TestCode: 2510B_CONDUCTIVITY

Sample ID: 2402033-001BDUP	SampType: DUP	TestCode: 2510B_COND	Units: µmhos/cm	Prep Date:	RunNo: 41151						
Client ID: Region 1 Brine Pon	Batch ID: R41151	TestNo: A2510B		Analysis Date: 2/23/2024	SeqNo: 434992						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductivity	100400	10.00		0	0			100200	0.199	2	

TestCode: 4500-H+B

Sample ID: 2402033-001BDUP	SampType: DUP	TestCode: 4500-H+B	Units: pH Units	Prep Date:	RunNo: 41151						
Client ID: Region 1 Brine Pon	Batch ID: R41151	TestNo: A4500-H+B		Analysis Date: 2/23/2024	SeqNo: 434983						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	4.83	1.00						4.860	0.619	5	
Temp	32.2	0						32.30	0.310	0	

TestCode: EPA_200.7 - 5

Sample ID: LCS	SampType: LCS	TestCode: EPA_200.7 -	Units: mg/L	Prep Date:	RunNo: 41267						
Client ID: LCSW	Batch ID: R41267	TestNo: E200.7 BP		Analysis Date: 3/20/2024	SeqNo: 437701						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.97	0.0510	2.000	0	98.6	90	110				
Barium	2.00	0.0120	2.000	0	100	90	110				
Cadmium	1.99	0.0100	2.000	0	99.6	90	110				
Lead	1.99	0.0350	2.000	0	99.7	90	110				

Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit PL Permit Limit
 RL Reporting Detection Limit S MBLK Samptype result is greater than 1/2 PQL S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 2402033

22-Mar-24

Client: CalEnergy
Project: Brine Pond

Sample ID: LCS	SampType: LCS	TestCode: EPA_200.7 -	Units: mg/L	Prep Date:	RunNo: 41267						
Client ID: LCSW	Batch ID: R41267	TestNo: E200.7 BP	Analysis Date: 3/20/2024	SeqNo: 437701							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Zinc	1.99	0.0100	2.000	0	99.5	90	110				
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Sample ID: FB	SampType: FB	TestCode: EPA_200.7 -	Units: mg/L	Prep Date:	RunNo: 41267						
Client ID: BatchQC	Batch ID: R41267	TestNo: E200.7 BP	Analysis Date: 3/20/2024	SeqNo: 437703							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	0.0184	0.0510									J
Barium	ND	0.0120									U
Cadmium	ND	0.0100									U
Lead	ND	0.0350									U
Zinc	ND	0.0100									U

Sample ID: 2402033-001AMS	SampType: MS	TestCode: EPA_200.7 -	Units: mg/L	Prep Date:	RunNo: 41267						
Client ID: Region 1 Brine Pon	Batch ID: R41267	TestNo: E200.7 BP	Analysis Date: 3/20/2024	SeqNo: 437705							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	44.1	1.02	40.00	0.5599	109	75	125				
Barium	57.4	0.240	40.00	18.93	96.2	75	125				
Cadmium	44.3	0.200	40.00	0.3713	110	75	125				
Lead	55.6	0.700	40.00	17.20	96.0	75	125				
Zinc	127	0.200	40.00	88.93	94.1	75	125				

Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit PL Permit Limit
 RL Reporting Detection Limit S MBLK Samptype result is greater than 1/2 PQL. S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 2402033

22-Mar-24

Client: CalEnergy
Project: Brine Pond

Sample ID: 2402033-001AMSD	SampType: MSD	TestCode: EPA_200.7 -	Units: mg/L	Prep Date:	RunNo: 41267						
Client ID: Region 1 Brine Pon	Batch ID: R41267	TestNo: E200.7 BP	Analysis Date: 3/20/2024	SeqNo: 437706							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	43.8	1.02	40.00	0.5599	108	75	125	44.11	0.691	15	
Barium	57.3	0.240	40.00	18.93	95.9	75	125	57.43	0.217	15	
Cadmium	44.3	0.200	40.00	0.3713	110	75	125	44.33	0.157	15	
Lead	55.6	0.700	40.00	17.20	95.9	75	125	55.60	0.0567	15	
Zinc	126	0.200	40.00	88.93	93.2	75	125	126.6	0.279	15	

Sample ID: 2402033-003AMS	SampType: MS	TestCode: EPA_200.7 -	Units: mg/L	Prep Date:	RunNo: 41267						
Client ID: Hoch Brine Pond - L	Batch ID: R41267	TestNo: E200.7 BP	Analysis Date: 3/20/2024	SeqNo: 437712							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.41	0.0510	2.000	0.1345	114	75	125				
Barium	2.82	0.0120	2.000	0.9285	94.6	75	125				
Cadmium	2.26	0.0100	2.000	0.02199	112	75	125				
Lead	1.86	0.0350	2.000	0	92.8	75	125				
Zinc	5.33	0.0100	2.000	3.549	89.0	75	125				

Sample ID: 2402033-003AMSD	SampType: MSD	TestCode: EPA_200.7 -	Units: mg/L	Prep Date:	RunNo: 41267						
Client ID: Hoch Brine Pond - L	Batch ID: R41267	TestNo: E200.7 BP	Analysis Date: 3/20/2024	SeqNo: 437715							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.38	0.0510	2.000	0.1345	112	75	125	2.408	1.35	15	
Barium	2.80	0.0120	2.000	0.9285	93.4	75	125	2.821	0.864	15	
Cadmium	2.24	0.0100	2.000	0.02199	111	75	125	2.256	0.526	15	

Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit PL Permit Limit
 RL Reporting Detection Limit S MBLK Samptype result is greater than 1/2 PQL S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode



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 Website: www.calenergy.com

QC SUMMARY REPORT

WO#: 2402033

22-Mar-24

Client: CalEnergy
Project: Brine Pond

Sample ID: 2402033-003AMSD	SampType: MSD	TestCode: EPA_200.7 -	Units: mg/L	Prep Date:	RunNo: 41267
Client ID: Hoch Brine Pond - L	Batch ID: R41267	TestNo: E200.7 BP		Analysis Date: 3/20/2024	SeqNo: 437715

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1.84	0.0350	2.000	0	91.9	75	125	1.857	0.975	15	
Zinc	5.27	0.0100	2.000	3.549	86.1	75	125	5.328	1.07	15	

TestCode: EPA_200.7 Na,K,Ca,Mg

Sample ID: LCS	SampType: LCS	TestCode: EPA_200.7 N	Units: mg/L	Prep Date:	RunNo: 41259
Client ID: LCSW	Batch ID: R41259	TestNo: E200.7		Analysis Date: 3/15/2024	SeqNo: 437513

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9.81	0.0350	10.00	0	98.1	90	110				
Magnesium	9.89	0.0300	10.00	0	98.9	90	110				
Potassium	9.72	0.222	10.00	0	97.2	90	110				
Sodium	9.74	0.122	10.00	0	97.4	90	110				

Sample ID: FB	SampType: FB	TestCode: EPA_200.7 N	Units: mg/L	Prep Date:	RunNo: 41259
Client ID: BatchQC	Batch ID: R41259	TestNo: E200.7		Analysis Date: 3/15/2024	SeqNo: 437515

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.0350									U
Magnesium	ND	0.0300									U
Potassium	ND	0.222									U
Sodium	ND	0.122									U

Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit PL Permit Limit
 RL Reporting Detection Limit S MBLK Samptype result is greater than 1/2 PQL S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode



CalEnergy Operating Corporation
 7030 Gentry Road
 Calipatria, CA 92233
 TEL: (760) 348-4200 FAX: (760) 348-4222
 Website: www.calenergy.com

QC SUMMARY REPORT

WO#: 2402033

22-Mar-24

Client: CalEnergy
Project: Brine Pond

Sample ID: 2402033-003AMS	SampType: MS	TestCode: EPA_200.7 N	Units: mg/L	Prep Date:	RunNo: 41259						
Client ID: Hoch Brine Pond - L	Batch ID: R41259	TestNo: E200.7	Analysis Date: 3/15/2024	SeqNo: 437519							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Calcium	1590	3.50	1000	621.1	97.1	75	125				
Potassium	1350	22.2	1000	382.7	96.9	75	125				
Sodium	2320	12.2	1000	1404	91.7	75	125				

Sample ID: 2402033-003AMSD	SampType: MSD	TestCode: EPA_200.7 N	Units: mg/L	Prep Date:	RunNo: 41259						
Client ID: Hoch Brine Pond - L	Batch ID: R41259	TestNo: E200.7	Analysis Date: 3/15/2024	SeqNo: 437520							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Calcium	1570	3.50	1000	621.1	94.5	75	125	1592	1.63	15	
Potassium	1330	22.2	1000	382.7	94.8	75	125	1352	1.58	15	
Sodium	2290	12.2	1000	1404	88.2	75	125	2321	1.52	15	

Sample ID: 2402033-003AMS	SampType: MS	TestCode: EPA_200.7 N	Units: mg/L	Prep Date:	RunNo: 41259						
Client ID: Hoch Brine Pond - L	Batch ID: R41259	TestNo: E200.7	Analysis Date: 3/15/2024	SeqNo: 437529							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Magnesium	207	0.600	200.0	10.80	98.0	75	125				
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Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit PL Permit Limit
 RL Reporting Detection Limit S MBLK Samptype result is greater than 1/2 PQL. S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 2402033

22-Mar-24

Client: CalEnergy
Project: Brine Pond

Sample ID: 2402033-003AMSD	SampType: MSD	TestCode: EPA_200.7 N	Units: mg/L	Prep Date:	RunNo: 41259						
Client ID: Hoch Brine Pond - L	Batch ID: R41259	TestNo: E200.7	Analysis Date: 3/15/2024	SeqNo: 437530							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	206	0.600	200.0	10.80	97.7	75	125	206.7	0.285	15	

TestCode: TDS

Sample ID: FB-R41138	SampType: FB	TestCode: TDS	Units: mg/L	Prep Date:	RunNo: 41150						
Client ID: BatchQC	Batch ID: R41150	TestNo: A2540C	Analysis Date: 2/26/2024	SeqNo: 435446							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Dissolved	22.00	10.00									

Sample ID: 2402033-002BDUP	SampType: DUP	TestCode: TDS	Units: mg/L	Prep Date:	RunNo: 41150						
Client ID: Vulcan Brine Pond -	Batch ID: R41150	TestNo: A2540C	Analysis Date: 2/26/2024	SeqNo: 435450							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Dissolved	56800	10.00						55000	3.22	5	

Qualifiers: J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit PL Permit Limit
 RL Reporting Detection Limit S MBLK Samptype result is greater than 1/2 PQL S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode



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March 13, 2024

Anoop Sukumaran
CalEnergy Operating Corporation
7030 Gentry Road
Calipatria, CA 92233

RE: Brine Pond solids

Order No.: 2402032

Dear Anoop Sukumaran:

CalEnergy Operating Corporation received 6 sample(s) on 2/26/2024 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative. Analytical results designated with a "J" qualifier are estimated and represent a detection above the Method Detection Limit (MDL) and less than the Reporting Limit (PQL). These analytes are not reviewed nor narrated as to whether they are laboratory artifacts.

Quality control data is within laboratory defined or method specified acceptance limits except if noted.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

A handwritten signature in black ink that reads "Yanqiu Wu".

Yanqiu Wu
Director, Engineering & Laboratory Services
7030 Gentry Road
Calipatria, CA 92233



CalEnergy Operating Corporation
7030 Gentry Road
Calipatria, CA 92233
TEL: (760) 348-4200 FAX: (760) 348-4222
Website: www.calenergy.com

Case Narrative

WO#: 2402032
Date: 3/13/2024

CLIENT: CalEnergy
Project: Brine Pond solids

This report in its entirety consists of the documents listed below. All documents contain the CalEnergy Operating Corporation Work Order Number assigned to this report.

1. Paginated Report including: Case Narrative, Analytical Results and Applicable Quality Control Summary Reports.
2. A Cover Letter that immediately precedes the Paginated Report.
3. Paginated copies of the Chain of Custody Documents supplied with this sample set.

Concentrations reported with a J flag in the Qual field are values below the reporting limit (RL) but greater than the established method detection limit (MDL). There is greater uncertainty associated with these results and data should be considered as estimated.

Concentrations reported with an E flag in the Qual field are values that exceed the upper quantification range. There is greater uncertainty associated with these results and data should be considered as estimated.

Any comments or problems with the analytical events associated with this report are noted below.



CalEnergy Operating Corporation
 7030 Gentry Road
 Calipatria, CA 92233
 TEL: (760) 348-4200 FAX: (760) 348-4222
 Website: www.calenergy.com

Analytical Report

(consolidated)

WO#: 2402032

Date Reported: 3/13/2024

CLIENT: CalEnergy **Collection Date:** 2/16/2024 8:43:00 AM
Project: Brine Pond solids
Lab ID: 2402032-001 **Matrix:** SOLID
Client Sample ID Region 1 Brine Pond - Solid

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
BRINE POND MONITORING 5 ANALYTE		SW6010B			Analyst: RV	
TTLIC BY ICP-OES						
Arsenic	1880	5.09	*	mg/Kg	1	2/27/2024 2:21:11 PM
Barium	1560	0.863		mg/Kg	1	2/27/2024 2:21:11 PM
Cadmium	4.55	0.547		mg/Kg	1	2/27/2024 2:21:11 PM
Lead	283	3.88		mg/Kg	1	2/27/2024 2:21:11 PM
Zinc	694	1.29		mg/Kg	1	2/27/2024 2:21:11 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	PL	Permit Limit
RL	Reporting Detection Limit	U	Samples with CalcVal < MDL
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 2402032

Date Reported: 3/13/2024

CLIENT: CalEnergy **Collection Date:** 2/16/2024 11:10:00 AM
Project: Brine Pond solids
Lab ID: 2402032-002 **Matrix:** SOLID
Client Sample ID Vulcan Brine Pond - Solid

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
BRINE POND MONITORING 5 ANALYTE				SW6010B		Analyst: RV
TTLIC BY ICP-OES						
Arsenic	375	4.84		mg/Kg	1	2/27/2024 2:26:16 PM
Barium	738	0.820		mg/Kg	1	2/27/2024 2:26:16 PM
Cadmium	5.01	0.520		mg/Kg	1	2/27/2024 2:26:16 PM
Lead	141	3.69		mg/Kg	1	2/27/2024 2:26:16 PM
Zinc	218	1.22		mg/Kg	1	2/27/2024 2:26:16 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	PL	Permit Limit
RL	Reporting Detection Limit	U	Samples with CalcVal < MDL
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 2402032

Date Reported: 3/13/2024

CLIENT: CalEnergy **Collection Date:** 2/16/2024 10:55:00 AM
Project: Brine Pond solids
Lab ID: 2402032-003 **Matrix:** SOLID
Client Sample ID Hoch Brine Pond - Solid

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
BRINE POND MONITORING 5 ANALYTE		SW6010B			Analyst: RV	
TTLIC BY ICP-OES						
Arsenic	954	4.87	*	mg/Kg	1	2/27/2024 2:28:10 PM
Barium	2340	0.826		mg/Kg	1	2/27/2024 2:28:10 PM
Cadmium	2.88	0.523		mg/Kg	1	2/27/2024 2:28:10 PM
Lead	248	3.71		mg/Kg	1	2/27/2024 2:28:10 PM
Zinc	468	1.23		mg/Kg	1	2/27/2024 2:28:10 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	PL	Permit Limit
RL	Reporting Detection Limit	U	Samples with CalcVal < MDL
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 2402032

Date Reported: 3/13/2024

CLIENT: CalEnergy **Collection Date:** 2/16/2024 11:45:00 AM
Project: Brine Pond solids
Lab ID: 2402032-004 **Matrix:** SOLID
Client Sample ID Elmore Brine Pond - Solid

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**BRINE POND MONITORING 5 ANALYTE
 TTLC BY ICP-OES**

SW6010B

Analyst: RV

Arsenic	538	5.29	*	mg/Kg	1	2/27/2024 2:29:49 PM
Barium	2670	0.896		mg/Kg	1	2/27/2024 2:29:49 PM
Cadmium	4.33	0.568		mg/Kg	1	2/27/2024 2:29:49 PM
Lead	240	4.03		mg/Kg	1	2/27/2024 2:29:49 PM
Zinc	353	1.34		mg/Kg	1	2/27/2024 2:29:49 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	PL	Permit Limit
RL	Reporting Detection Limit	U	Samples with CalcVal < MDL
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 2402032

Date Reported: 3/13/2024

CLIENT: CalEnergy **Collection Date:** 2/16/2024 11:20:00 AM
Project: Brine Pond solids
Lab ID: 2402032-005 **Matrix:** SOLID
Client Sample ID Leathers Brine Pond - Solid

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**BRINE POND MONITORING 5 ANALYTE
 TTLC BY ICP-OES**

SW6010B

Analyst: RV

Arsenic	417	4.89		mg/Kg	1	2/27/2024 2:41:59 PM
Barium	417	0.828		mg/Kg	1	2/27/2024 2:41:59 PM
Cadmium	3.58	0.524		mg/Kg	1	2/27/2024 2:41:59 PM
Lead	215	3.73		mg/Kg	1	2/27/2024 2:41:59 PM
Zinc	533	1.24		mg/Kg	1	2/27/2024 2:41:59 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	PL	Permit Limit
RL	Reporting Detection Limit	U	Samples with CalcVal < MDL
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: **2402032**

Date Reported: **3/13/2024**

CLIENT: CalEnergy **Collection Date:** 2/16/2024 8:43:00 AM
Project: Brine Pond solids
Lab ID: 2402032-006 **Matrix:** SOLID
Client Sample ID Region1 Brine Pond - Solid

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
BRINE POND MONITORING 5 ANALYTE					SW6010B	Analyst: RV
TTLIC BY ICP-OES						
Arsenic	1870	5.02	*	mg/Kg	1	2/27/2024 2:33:17 PM
Barium	1430	0.850		mg/Kg	1	2/27/2024 2:33:17 PM
Cadmium	5.04	0.539		mg/Kg	1	2/27/2024 2:33:17 PM
Lead	250	3.83		mg/Kg	1	2/27/2024 2:33:17 PM
Zinc	668	1.27		mg/Kg	1	2/27/2024 2:33:17 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	PL	Permit Limit
RL	Reporting Detection Limit	U	Samples with CalcVal < MDL
W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 2402032

13-Mar-24

Client: CalEnergy
Project: Brine Pond solids

TestCode: 6010B_S_OES - BP

Sample ID: LCS-30165	SampType: LCS	TestCode: 6010B_S_OE	Units: mg/Kg	Prep Date:	RunNo: 41148						
Client ID: LCSS	Batch ID: R41148	TestNo: SW6010B	Analysis Date: 2/27/2024	SeqNo: 435164							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	195	5.31	200.0	0	97.5	80	120				
Barium	197	0.900	200.0	0	98.7	80	120				
Cadmium	194	0.570	200.0	0	96.9	80	120				
Lead	195	4.05	200.0	0	97.4	80	120				
Zinc	201	1.34	200.0	0	100	80	120				

Sample ID: 2402032-005AMS	SampType: MS	TestCode: 6010B_S_OE	Units: mg/Kg	Prep Date:	RunNo: 41148						
Client ID: Leathers Brine Pond	Batch ID: R41148	TestNo: SW6010B	Analysis Date: 2/27/2024	SeqNo: 435175							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	600	4.89	184.0	417.3	99.0	75	125				
Barium	572	0.828	184.0	416.7	84.3	75	125				
Cadmium	191	0.524	184.0	3.581	102	75	125				
Lead	372	3.73	184.0	214.6	85.3	75	125				
Zinc	689	1.24	184.0	532.8	84.8	75	125				

Sample ID: 2402032-005AMSD	SampType: MSD	TestCode: 6010B_S_OE	Units: mg/Kg	Prep Date:	RunNo: 41148						
Client ID: Leathers Brine Pond	Batch ID: R41148	TestNo: SW6010B	Analysis Date: 2/27/2024	SeqNo: 435176							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	593	4.90	184.5	417.3	95.2	75	125	599.5	1.10	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
PL Permit Limit	RL Reporting Detection Limit	S MBLK Samptype result is greater than 1/2 PQL.
S Spike Recovery outside accepted recovery limits	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 2402032

13-Mar-24

Client: CalEnergy
Project: Brine Pond solids

Sample ID: 2402032-005AMSD	SampType: MSD	TestCode: 6010B_S_OE	Units: mg/Kg	Prep Date:	RunNo: 41148						
Client ID: Leathers Brine Pond	Batch ID: R41148	TestNo: SW6010B	Analysis Date: 2/27/2024	SeqNo: 435176							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	573	0.830	184.5	416.7	84.9	75	125	571.8	0.279	20	
Cadmium	191	0.526	184.5	3.581	102	75	125	190.6	0.250	20	
Lead	370	3.74	184.5	214.6	84.3	75	125	371.6	0.404	20	
Zinc	691	1.24	184.5	532.8	85.7	75	125	688.8	0.303	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
PL	Permit Limit	RL	Reporting Detection Limit	S	MBLK Samptype result is greater than 1/2 PQL.
S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		

Work Orders: 4B27030

Project: DVC MONITOR WELLS 1SA24

Attn: CalEnergy Corporation

Client: CalEnergy Corporation
7030 Gentry Rd.
Calipatria, CA 92233

Report Date: 3/21/2024

Received Date: 2/27/2024

Turnaround Time: Normal

Phones: (760) 348-4270

Fax: (760) 348-4222

P.O. #:

Billing Code:

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143 • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. The report may include analytes that are not currently accreditable by some state agencies or accrediting bodies. This analytical report must be reproduced in its entirety.

Dear CalEnergy Corporation,

Enclosed are the results of analyses for samples received 2/27/24 with the Chain-of-Custody document. The samples were received in good condition, at 5.9 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:



Ryan J. Gasio
Project Manager



CalEnergy Corporation
 7030 Gentry Rd.
 Calipatria, CA 92233

Project Number: DVC MONITOR WELLS 1SA24

Reported:
 03/21/2024 18:24

Project Manager: CalEnergy Corporation

Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
Region-1 Brine Pond Liquid	Ricky Lee/Joe Louis Martinez	4B27030-01	Water	02/23/24 09:50	
Region-1 Brine Pond Liquid Dup	Ricky Lee/Joe Louis Martinez	4B27030-02	Water	02/23/24 09:50	
Vulcan Brine Pond Liquid	Ricky Lee/Joe Louis Martinez	4B27030-03	Water	02/23/24 12:00	
Hoch Brine Pond Liquid	Ricky Lee/Joe Louis Martinez	4B27030-04	Water	02/23/24 11:30	
Elmore Brine Pond Liquid	Ricky Lee/Joe Louis Martinez	4B27030-05	Water	02/23/24 13:55	
Leathers Brine Pond Liquid	Ricky Lee/Joe Louis Martinez	4B27030-06	Water	02/23/24 13:30	
RI Blank	Ricky Lee/Joe Louis Martinez	4B27030-07	Water	02/23/24 07:45	

CalEnergy Corporation
7030 Gentry Rd.
Calipatria, CA 92233

Project Number: DVC MONITOR WELLS 1SA24
Project Manager: CalEnergy Corporation

Reported:
03/21/2024 18:24

Sample Results

Sample: Region-1 Brine Pond Liquid

Sampled: 02/23/24 9:50 by Ricky Lee/Joe
Louis Martinez

4B27030-01 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Anions by IC, EPA Method 300.0						
Method: EPA 300.0		Instr: LC12				
Batch ID: W4C0017		Preparation: _NONE (LC)		Prepared: 03/01/24 08:22		Analyst: CAM
Sulfate as SO4	ND	100	mg/l	200	03/01/24	M-05

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Method: SM 2320B		Instr: AA02				
Batch ID: W4B2404		Preparation: _NONE (WETCHEM)		Prepared: 02/28/24 17:06		Analyst: mes
Alkalinity as CaCO3	ND	20	mg/l	1	02/29/24	
Bicarbonate Alkalinity as HCO3	ND	24	mg/l	1	02/29/24	
Carbonate Alkalinity as CaCO3	ND	20	mg/l	1	02/29/24	
Hydroxide Alkalinity as CaCO3	ND	20	mg/l	1	02/29/24	

Sample Results

Sample: Region-1 Brine Pond Liquid

Sampled: 02/23/24 9:50 by Ricky Lee/Joe
Louis Martinez

4B27030-01RE2 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Anions by IC, EPA Method 300.0						
Method: EPA 300.0		Instr: LC12				
Batch ID: W4C0620		Preparation: _NONE (LC)		Prepared: 03/08/24 08:37		Analyst: CAM
Chloride, Total	39000	250	mg/l	500	03/08/24	

Sample Results

Sample: Region-1 Brine Pond Liquid Dup

Sampled: 02/23/24 9:50 by Ricky Lee/Joe
Louis Martinez

4B27030-02 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Anions by IC, EPA Method 300.0						
Method: EPA 300.0		Instr: LC12				
Batch ID: W4C0017		Preparation: _NONE (LC)		Prepared: 03/01/24 08:22		Analyst: CAM
Sulfate as SO4	ND	100	mg/l	200	03/01/24	M-05

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Method: SM 2320B		Instr: AA02				
Batch ID: W4B2404		Preparation: _NONE (WETCHEM)		Prepared: 02/28/24 17:06		Analyst: mes
Alkalinity as CaCO3	ND	20	mg/l	1	02/29/24	
Bicarbonate Alkalinity as HCO3	ND	24	mg/l	1	02/29/24	
Carbonate Alkalinity as CaCO3	ND	20	mg/l	1	02/29/24	
Hydroxide Alkalinity as CaCO3	ND	20	mg/l	1	02/29/24	

CalEnergy Corporation
7030 Gentry Rd.
Calipatria, CA 92233

Project Number: DVC MONITOR WELLS 1SA24
Project Manager: CalEnergy Corporation

Reported:
03/21/2024 18:24

Sample Results

(Continued)

Sample: Region-1 Brine Pond Liquid Dup

Sampled: 02/23/24 9:50 by Ricky Lee/Joe
Louis Martinez

4B27030-02RE2 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Anions by IC, EPA Method 300.0						
Method: EPA 300.0		Instr: LC12				
Batch ID: W4C0620		Preparation: _NONE (LC)		Prepared: 03/08/24 08:37		Analyst: CAM
Chloride, Total	47000	250	mg/l	500	03/08/24	

Sample Results

(Continued)

Sample: Vulcan Brine Pond Liquid

Sampled: 02/23/24 12:00 by Ricky Lee/Joe
Louis Martinez

4B27030-03 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Anions by IC, EPA Method 300.0						
Method: EPA 300.0		Instr: LC12				
Batch ID: W4C0017		Preparation: _NONE (LC)		Prepared: 03/01/24 08:22		Analyst: CAM
Chloride, Total	40000	200	mg/l	400	03/01/24	M-05
Sulfate as SO4	460	200	mg/l	400	03/01/24	M-05

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Method: SM 2320B						
Batch ID: W4B2404		Preparation: _NONE (WETCHEM)		Instr: AA02		Analyst: mes
Prepared: 02/28/24 17:06						
Alkalinity as CaCO3	ND	20	mg/l	1	02/29/24	
Bicarbonate Alkalinity as HCO3	ND	24	mg/l	1	02/29/24	
Carbonate Alkalinity as CaCO3	ND	20	mg/l	1	02/29/24	
Hydroxide Alkalinity as CaCO3	ND	20	mg/l	1	02/29/24	

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Project Manager: CalEnergy Corporation

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Sample Results

(Continued)

Sample: Hoch Brine Pond Liquid

Sampled: 02/23/24 11:30 by Ricky Lee/Joe
Louis Martinez

4B27030-04 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Anions by IC, EPA Method 300.0						
Method: EPA 300.0		Instr: LC12				
Batch ID: W4C0017		Preparation: _NONE (LC)		Prepared: 03/01/24 08:22		Analyst: CAM
Chloride, Total	3900	200	mg/l	400	03/01/24	M-05
Sulfate as SO4	260	200	mg/l	400	03/01/24	M-05

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Method: SM 2320B		Instr: AA02				
Batch ID: W4B2404		Preparation: _NONE (WETCHEM)		Prepared: 02/28/24 17:06		Analyst: mes
Alkalinity as CaCO3	330	20	mg/l	1	02/29/24	
Bicarbonate Alkalinity as HCO3	400	24	mg/l	1	02/29/24	
Carbonate Alkalinity as CaCO3	ND	20	mg/l	1	02/29/24	
Hydroxide Alkalinity as CaCO3	ND	20	mg/l	1	02/29/24	

Sample Results

(Continued)

Sample: Elmore Brine Pond Liquid

Sampled: 02/23/24 13:55 by Ricky Lee/Joe
Louis Martinez

4B27030-05 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Anions by IC, EPA Method 300.0						
Method: EPA 300.0		Instr: LC12				
Batch ID: W4C0017		Preparation: _NONE (LC)		Prepared: 03/01/24 08:22		Analyst: CAM
Sulfate as SO4	290	200	mg/l	400	03/01/24	M-05

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Method: SM 2320B		Instr: AA02				
Batch ID: W4B2404		Preparation: _NONE (WETCHEM)		Prepared: 02/28/24 17:06		Analyst: mes
Alkalinity as CaCO3	ND	20	mg/l	1	02/29/24	
Bicarbonate Alkalinity as HCO3	ND	24	mg/l	1	02/29/24	
Carbonate Alkalinity as CaCO3	ND	20	mg/l	1	02/29/24	
Hydroxide Alkalinity as CaCO3	ND	20	mg/l	1	02/29/24	

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Project Manager: CalEnergy Corporation

Sample Results

(Continued)

Sample: Elmore Brine Pond Liquid

Sampled: 02/23/24 13:55 by Ricky Lee/Joe
Louis Martinez

4B27030-05RE1 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Anions by IC, EPA Method 300.0						
Method: EPA 300.0		Instr: LC12				
Batch ID: W4C0017		Preparation: _NONE (LC)		Prepared: 03/01/24 08:22		Analyst: CAM
Chloride, Total	120000	800	mg/l	1600	03/01/24	M-05

Sample Results

(Continued)

Sample: Leathers Brine Pond Liquid

Sampled: 02/23/24 13:30 by Ricky Lee/Joe
Louis Martinez

4B27030-06 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Anions by IC, EPA Method 300.0						
Method: EPA 300.0		Instr: LC12				
Batch ID: W4C0017		Preparation: _NONE (LC)		Prepared: 03/01/24 08:22		Analyst: CAM
Sulfate as SO4	620	200	mg/l	400	03/01/24	M-05

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Method: SM 2320B		Instr: AA02				
Batch ID: W4B2404		Preparation: _NONE (WETCHEM)		Prepared: 02/28/24 17:06		Analyst: mes
Alkalinity as CaCO3	ND	20	mg/l	1	02/29/24	
Bicarbonate Alkalinity as HCO3	ND	24	mg/l	1	02/29/24	
Carbonate Alkalinity as CaCO3	ND	20	mg/l	1	02/29/24	
Hydroxide Alkalinity as CaCO3	ND	20	mg/l	1	02/29/24	

Sample Results

(Continued)

Sample: Leathers Brine Pond Liquid

Sampled: 02/23/24 13:30 by Ricky Lee/Joe
Louis Martinez

4B27030-06RE1 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Anions by IC, EPA Method 300.0						
Method: EPA 300.0		Instr: LC12				
Batch ID: W4C0017		Preparation: _NONE (LC)		Prepared: 03/01/24 08:22		Analyst: CAM
Chloride, Total	130000	800	mg/l	1600	03/01/24	M-05

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Reported:
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Project Manager: CalEnergy Corporation

Sample Results

(Continued)

Sample: RI Blank

Sampled: 02/23/24 7:45 by Ricky Lee/Joe
Louis Martinez

4B27030-07 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Anions by IC, EPA Method 300.0						
Method: EPA 300.0		Instr: LC12				
Batch ID: W4C0620		Preparation: _NONE (LC)		Prepared: 03/08/24 08:37		Analyst: CAM
Chloride, Total	ND	0.50	mg/l	1	03/08/24	
Sulfate as SO4	ND	0.50	mg/l	1	03/08/24	

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Method: SM 2320B		Instr: AA02				
Batch ID: W4B2404		Preparation: _NONE (WETCHEM)		Prepared: 02/28/24 17:06		Analyst: mes
Alkalinity as CaCO3	ND	20	mg/l	1	02/29/24	
Bicarbonate Alkalinity as HCO3	ND	24	mg/l	1	02/29/24	
Carbonate Alkalinity as CaCO3	ND	20	mg/l	1	02/29/24	
Hydroxide Alkalinity as CaCO3	ND	20	mg/l	1	02/29/24	

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Project Manager: CalEnergy Corporation

Quality Control Results

Anions by IC, EPA Method 300.0

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit	Qualifier
Batch: W4C0017 - EPA 300.0										
Blank (W4C0017-BLK1)										
Prepared & Analyzed: 03/01/24										
Chloride, Total	ND	0.50	mg/l							
Sulfate as SO4	ND	0.50	mg/l							
LCS (W4C0017-BS1)										
Prepared & Analyzed: 03/01/24										
Chloride, Total	20.4	0.50	mg/l	20.0		102	90-110			
Sulfate as SO4	20.3	0.50	mg/l	20.0		101	90-110			
Matrix Spike (W4C0017-MS1)										
Source: 4B22004-01										
Prepared & Analyzed: 03/01/24										
Chloride, Total	273	5.0	mg/l	200	62.2	105	76-118			
Sulfate as SO4	313	5.0	mg/l	200	100	107	78-111			
Matrix Spike (W4C0017-MS2)										
Source: 4B22004-02										
Prepared & Analyzed: 03/01/24										
Chloride, Total	330	5.0	mg/l	200	116	107	76-118			
Sulfate as SO4	431	5.0	mg/l	200	197	117	78-111			MS-01
Matrix Spike Dup (W4C0017-MSD1)										
Source: 4B22004-01										
Prepared & Analyzed: 03/01/24										
Chloride, Total	271	5.0	mg/l	200	62.2	104	76-118	0.7	20	
Sulfate as SO4	311	5.0	mg/l	200	100	105	78-111	0.8	20	
Matrix Spike Dup (W4C0017-MSD2)										
Source: 4B22004-02										
Prepared & Analyzed: 03/01/24										
Chloride, Total	332	5.0	mg/l	200	116	108	76-118	0.4	20	
Sulfate as SO4	433	5.0	mg/l	200	197	118	78-111	0.3	20	MS-01
Batch: W4C0620 - EPA 300.0										
Blank (W4C0620-BLK1)										
Prepared & Analyzed: 03/08/24										
Chloride, Total	ND	0.50	mg/l							
Sulfate as SO4	ND	0.50	mg/l							
LCS (W4C0620-BS1)										
Prepared & Analyzed: 03/08/24										
Chloride, Total	21.0	0.50	mg/l	20.0		105	90-110			
Sulfate as SO4	21.3	0.50	mg/l	20.0		107	90-110			
Matrix Spike (W4C0620-MS1)										
Source: 4B09010-01										
Prepared & Analyzed: 03/08/24										
Chloride, Total	312	5.0	mg/l	200	113	99	76-118			
Sulfate as SO4	218	5.0	mg/l	200	26.4	96	78-111			
Matrix Spike (W4C0620-MS2)										
Source: 4B09010-02										
Prepared & Analyzed: 03/08/24										
Chloride, Total	368	5.0	mg/l	200	143	112	76-118			
Sulfate as SO4	262	5.0	mg/l	200	44.0	109	78-111			
Matrix Spike Dup (W4C0620-MSD1)										
Source: 4B09010-01										
Prepared & Analyzed: 03/08/24										
Chloride, Total	313	5.0	mg/l	200	113	100	76-118	0.4	20	
Sulfate as SO4	218	5.0	mg/l	200	26.4	96	78-111	0.1	20	
Matrix Spike Dup (W4C0620-MSD2)										
Source: 4B09010-02										
Prepared & Analyzed: 03/08/24										
Chloride, Total	367	5.0	mg/l	200	143	112	76-118	0.3	20	
Sulfate as SO4	260	5.0	mg/l	200	44.0	108	78-111	0.6	20	

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Project Manager: CalEnergy Corporation

Quality Control Results

(Continued)

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W4B2404 - SM 2320B									
Blank (W4B2404-BLK1)				Prepared: 02/28/24 Analyzed: 02/29/24					
Alkalinity as CaCO ₃	ND	20	mg/l						
Bicarbonate Alkalinity as HCO ₃	ND	24	mg/l						
Carbonate Alkalinity as CaCO ₃	ND	20	mg/l						
Hydroxide Alkalinity as CaCO ₃	ND	20	mg/l						
LCS (W4B2404-BS1)				Prepared: 02/28/24 Analyzed: 02/29/24					
Alkalinity as CaCO ₃	85.9	20	mg/l	87.8		98 94-108			
Bicarbonate Alkalinity as HCO ₃	105	24	mg/l	107		98 95-108			
Duplicate (W4B2404-DUP1)				Source: 4B27057-01 Prepared: 02/28/24 Analyzed: 02/29/24					
Alkalinity as CaCO ₃	60.5	20	mg/l		59.6		2	15	
Bicarbonate Alkalinity as HCO ₃	73.9	24	mg/l		72.7		2	15	
Carbonate Alkalinity as CaCO ₃	ND	20	mg/l		ND			200	
Hydroxide Alkalinity as CaCO ₃	ND	20	mg/l		ND			200	

CalEnergy Corporation
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Calipatria, CA 92233

Project Number: DVC MONITOR WELLS 1SA24

Reported:
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Project Manager: CalEnergy Corporation

Notes and Definitions

Item	Definition
M-05	Due to the nature of matrix interferences, sample was diluted prior to analysis. The MDL and MRL were raised due to the dilution.
MS-01	The spike recovery for this QC sample is outside of established control limits possibly due to sample matrix interference.
%REC	Percent Recovery
Dil	Dilution
MRL	Method Reporting Limit (MRL) is the minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference

Source Sample that was matrix spiked or duplicated.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Attachment G

California Registered Geologist Review



REVIEW OF MONITORING REPORT BY PROFESSIONAL GEOLOGIST

Waste Discharge Requirements
For
Calenergy Operating Corporation, Operator
Vulcan BN Geothermal Power Company and Magma Power Company, Owners
"Region 2" Vulcan and Del Ranch (Hoch) Power Plants
Class II Surface Impoundments
Imperial County
Permit Dated April 12, 2022

Regional Board WDID No. 7A 13 2040 014 and 7A 13 2033 001
Board Order R7-2022-0011
Facility Name: Region 2 Vulcan & Del Ranch (Hoch) Power Plants

Terraphase Engineering (Terraphase) has reviewed the report, prepared by the CalEnergy Operating Corporation, titled "*Region 2" Vulcan & Del Ranch (Hoch) Power Plants, Class II Holding Ponds, Semi-Annual Detection Monitoring Report for January – June 2024, Board Order No. R7-2022-0011, WDID No. 7A132033001 and 7A132040014.* This report was prepared as required by Monitoring and Reporting Program (MRP) R7-2022-0011.

Based on Terraphase's inquiry of the person or persons who provided the information for this report, the information is, to the best of Terraphase's knowledge, true, complete, and complies with Order No. R7-2022-0011.

August 9, 2024

A handwritten signature in blue ink, appearing to read 'Clare Steedman'.



Clare Steedman, PG (#9033)
Principal Geologist
Terraphase Engineering, Inc.
Irvine, California