



# ERM

840 West Sam Houston Pkwy North  
Suite 600  
Houston, Texas 77024

T +1 281 600 1000  
F +1 281 520 4625

**erm.com**

Stephen Lee, Director  
Louisiana Department of Natural Resources  
Office of Conservation - Injection & Mining Division  
617 North Third Street, LaSalle Building  
Baton Rouge, Louisiana 70802-5431

**DATE**  
December 27, 2023

**SUBJECT**  
6<sup>th</sup> Analytical Data Submittal  
Sulphur Mines Dome  
Calcasieu Parish, Louisiana

**REFERENCE**  
0712237

Dear Mr. Lee:

On behalf of Westlake US 2, LLC (Westlake), Environmental Resources Management Southwest, Inc. (ERM) is pleased to provide the Louisiana Department of Natural Resources (LDNR) Injection & Mining Division with final laboratory analytical reports for groundwater, surface water, and oil samples collected at the Sulphur Mines Dome in Calcasieu Parish.

Included in this report are data received in the 4th Quarter 2023 to date, plus a small amount of data collected during the 3rd Quarter 2023. The majority of the laboratory data associated with samples collected during the 3rd Quarter 2023, along with a summary of the sampling, were provided in the 5th Analytical Data Submittal, dated October 12, 2023.

Enclosed are the following:

- Table 1 – Groundwater Data
- Table 2 – Surface Water Data
- Table 3 – Central Lake Water Column Profile
- Table 4 – Gas Data
- Table 5 – Oil Data
- Figure 1-3 – Sample Location Maps
- Figure 4 – Piper Diagram
- Figure 5 – Methane Isotopes
- Figure 6 – Water Isotopes
- Attachment 1 – Laboratory Reports

Only final laboratory reports received since the previous data submittal are provided in Attachment 1. Supplemental submittals will be made as additional final laboratory analytical data are received.

## 1. WATER SAMPLING RESULTS

In October and November 2023, additional samples of groundwater, brine, and dissolved gas were collected at the site. The sampling locations are shown in Figures 1-3. The water samples were analyzed by ALS Global laboratory in Houston, Texas, a Louisiana Environmental Laboratory Accreditation Program (LELAP) accredited laboratory. Dissolved gases and stable isotope samples were submitted to and analyzed by Isotech, a Stratum Reservoir Company in Champaign, Illinois. All samples were submitted under proper Chain-of-Custody in laboratory supplied containers with appropriate preservative and handling requirements. Groundwater Sampling Results

On October 25th, 2023, groundwater samples were collected from the industrial water wells operated by Westlake, as well as the Cottages Well (019-17636Z) located west of Cavern 7 (see Figure 1). At each well, water was allowed to flow for several minutes prior to sampling, and field parameters, i.e., pH, specific conductivity (SC), oxidation-reduction potential (ORP), and temperature, were recorded with a hand-held meter at the time of sampling. The groundwater analytical data to date are summarized in Table 1. Water well 019-1603 was not operational at the time of sampling during October or November and no sample was collected.

Reported constituent concentrations have consistently been below their respective RECAP screening standards (GWSS) or EPA Secondary Maximum Contaminant Limits (SMCL), with the exception of iron and manganese. Alluvial aquifers throughout South Louisiana are known to exhibit elevated concentrations of naturally occurring iron, manganese, and other metals. Industrial processes utilizing steel piping can also influence the metal concentrations reported in the water. Minor detections of TPH fractions of Aromatics >C12-C16, >C16-C21, and >C21-C35 were reported at concentrations below the RECAP screening level at well 019-580 during the October 25th sampling event. The results were not confirmed in November, as TPH fractions were not detected. With the exception of the few minor TPH fraction detections, the volatile organic compounds and TPH fractions have been reported as not detected in the water wells since January 2023.

The water quality data Piper diagram is provided as Figure 4. The Piper diagram illustrates the differences between the Chicot aquifer water and the produced water and brine, and the overall consistency of the groundwater quality within the Chicot aquifer. The data for the Chicot sands have consistently plotted in a tight cluster, with the "500-foot" and "700-foot" sands having slightly different water quality signatures. At this time, there is no indication that the groundwater at these locations has been influenced by or mixed with brine, or with formation water from the oil producing zones.

## 1.1 BRINE SAMPLING RESULTS

In response to the 3rd Supplement to Compliance Order No. IMD 202-27, four brine samples were collected on October 30th from Starks Tie-In, Brine Well #18 (SN 973224), Brine Well #21 (SN 973365), and Brine Well #22 (SN 974245). Brine from these wells may be or is currently used to inject into Cavern 7. The samples were submitted to Isotech under proper chain-of-custody for determination of stable water isotopic ratios ( $\delta D$  and  $\delta 18O$ ) and dissolved inorganic carbon stable isotopic ratio ( $\delta 13C$ ). Water quality data analyses were not performed on the samples.

The isotopic data are provided on Table 1. Previously sampled brine data is also included on Table 1. Since brine is a manufactured product, the data is included on the groundwater data summary table for comparison but was not evaluated with respect to the RECAP GWSS or the SMCL.

The stable isotopic ratios of the brine are plotted on Figure 5, along with the stable isotopes of the produced water from SN 189416. The water used to make brine is extracted from the Chicot aquifer, with known recharge areas in the parishes north of Calcasieu Parish. The stable isotopic ratios plot close to the global meteoric water line. This suggests that the Chicot water is recharged by rainfall. The isotopic fractionation that occurs during the brine mining process is expected to be minimal. The formation water at SN 189416 exhibits a signature indicative of high temperature water-rock interaction, which is different from the global meteoric water signature, indicating the deeper zones were either not recharged by rainfall or have undergone some isotopic shift due to temperature or water-rock interaction.

## 1.2 SURFACE WATER SAMPLING RESULTS

Surface water samples were collected between December 11-13th from bubble site locations on site. Sampling locations are shown in Figures 1-3. Surface water sample data is summarized in Table 2.

The surface water results show that the water in the Central Lake has increased in TDS, calcium, chloride, sodium, and sulfate over the four quarters of sampling. The concentration increase applies to the lake as a whole and there are no identifiable locations where these constituents are significantly higher than others. These parameters have been elevated when the water level has been low. However, during the 4th quarter sampling, the water level was not as low as it was during the 3rd quarter, yet concentrations increased. This could be a seasonal variation due to record drought and high temperatures over the summer, and no flow out of the lake. The concentrations will continue to be monitored with the quarterly sampling events.

### 1.2.1 CENTRAL LAKE WATER COLUMN PROFILE

Field readings from the Central Lake water column are continuing on a weekly basis. The profile data collected from the monitoring station are provided in Table 3. Generally, the water quality is consistent throughout the water column, with a slight

change in water quality at the bottom of the water column where reducing conditions (ORP is negative) occur most likely attributed to decaying vegetation accumulating on the bottom. The specific conductance has increased since June 2023, but appears to have stabilized in December 2023. The surface water will continue to be monitored to evaluate seasonal changes over time.

## 2. GAS SAMPLING RESULTS

Dissolved gas samples were collected from the water wells in November 2023. One gas sample from SN 189416 was collected in August 2023. The gas data are summarized in Table 4 and sampling locations are provided in Figure 2.

The methane isotopic data have been plotted on Figure 6 for comparison with other gas samples collected. In general, the gas from the oil well (SN 189416) exhibits isotopic characteristics of thermogenic gas originating from a deep source. The gas collected from the caverns and oil wells also plot as thermogenic gas.

With a few exceptions, obtaining deuterium isotopic ratio data from the dissolved methane in the water wells has been difficult due to the small quantity of methane present in the water. The available methane isotopic data for the water wells indicates that the methane is biogenic, and different than what is observed in the bubble sites and oil wells. The Cottages well has slightly more biogenic methane present, likely due to the depth of the sand and the slightly different water chemistry.

Regarding the bubble site sampling, a new sampling approach was attempted to isolate the gas at the bubble sites during the December 2023 event. This new approach utilized a water-filled vessel to displace the water and capture the gas. The data are still pending, so the effectiveness of the sampling technique has yet to be determined.

## 3. OIL SAMPLE RESULTS

On October 25, 2023 one oil sample was collected from brine Caver 7-B (SN #67270). The oil samples were submitted to SPL for bulk/whole oil properties. Oil and gas sample locations are shown in Figure 3. Results from this sampling, along with data from previous sampling conducted by Intertek, are provided in Table 5. Based on the data comparison, the oil from within the caverns appears to be similar to previous cavern oil samples and different from the crude oil sample collected from adjacent oil wells.

## 4. SHEEN SAMPLING

A sheen sample was collected from the Central Lake location near bubble site #19 (see Figure 2). The sample was submitted to Alpha analytical for fingerprinting analysis. These data are reviewed and provided by Newfields in a separate submittal.

## 5. SAMPLING CONSTITUENT CHANGE

Based on the data collected since January, there have been no detections above the laboratory reporting limit in groundwater, surface water, brine, or produced water for cadmium, selenium, or silver. Therefore, cadmium, selenium, and silver are not considered constituents of concern in the waters around the salt dome and we propose to remove them from the sampling analyte lists.

## 6. SCHEDULE

Water wells will continue to be sampled on a monthly basis. The next water well sampling event is planned for late January 2024. The bubble sites will continue to be sampled as discovered. The next quarterly round of bubble site sampling is planned for March 2024. Monitoring wells will be sampled as they are completed, and the data will be provided with 48 hours of receipt of the final lab report.

We will continue to report additional sampling results to LDNR as they are received. Should you have any questions or need additional information, please contact us at [scott.himes@erm.com](mailto:scott.himes@erm.com) and [david.upthegrove@erm.com](mailto:david.upthegrove@erm.com).

Sincerely,

Environmental Resources Management Southwest, Inc.



Scott A. Himes, P.G.  
Senior Hydrogeologist



David C. Upthegrove, P.G.  
Partner







SAH/DCU/pcv



FIGURES



**Legend**

-  Water Well Sample Location
-  Produced Water Sample Location
-  Brine Sample Location
-  Westlake Property

Notes:  
2021 Aerial imagery via USGS Earth Explorer (NAIP).

**Figure 1**  
**Groundwater Sampling Locations**  
Sulphur Dome  
Westlake US 2, LLC  
Calcasieu Parish, Louisiana





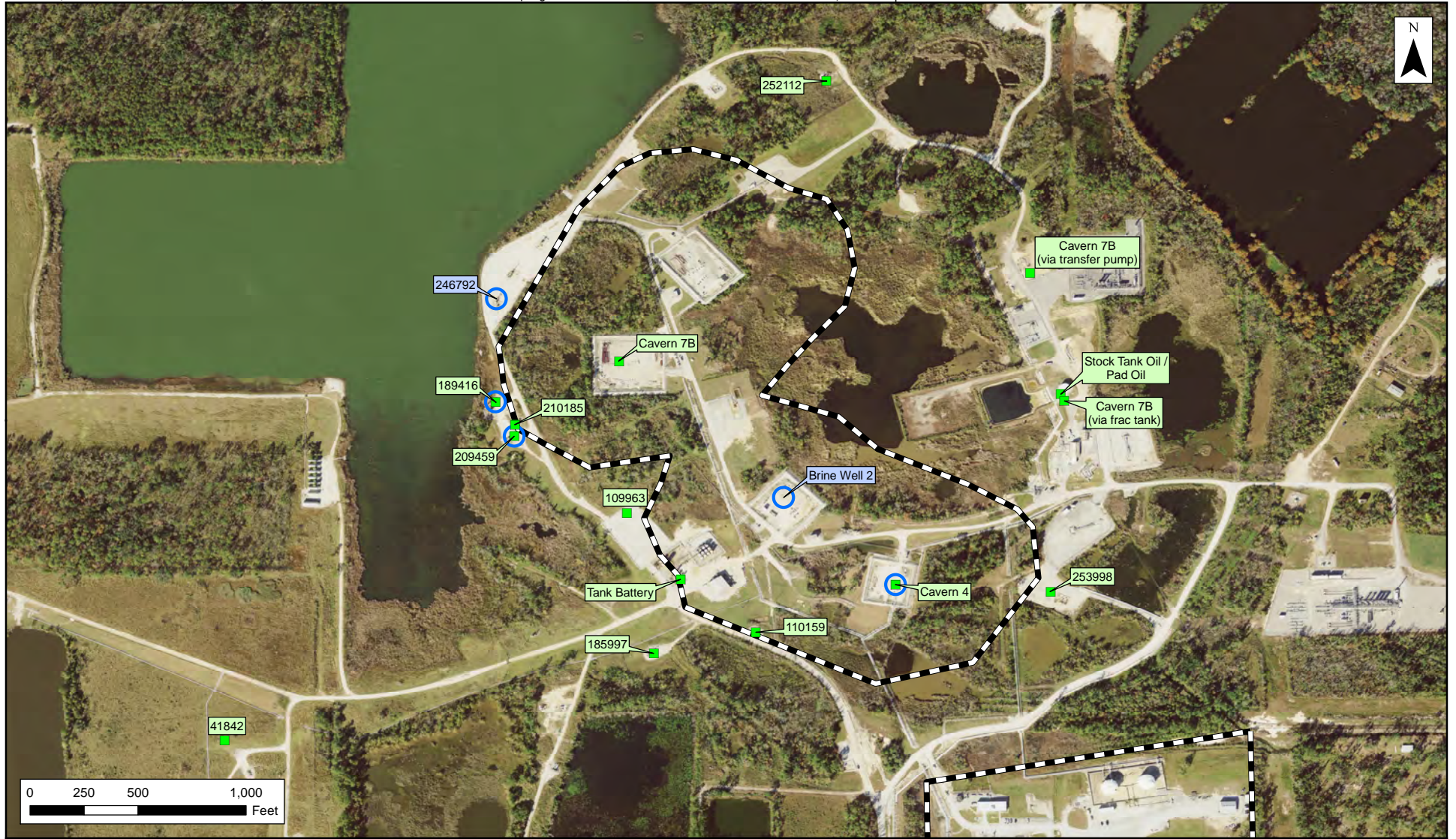
**Legend**

- Surface Water Sample Location (non-bubble site)
- Bubble Site Water/Gas Sample Location
- Sheen Sample Location
- Westlake Property

Notes:  
2021 Aerial imagery via USGS Earth Explorer (NAIP).

**Figure 2**  
**Surface Water Sampling Locations**  
Sulphur Dome  
Westlake US 2, LLC  
Calcasieu Parish, Louisiana





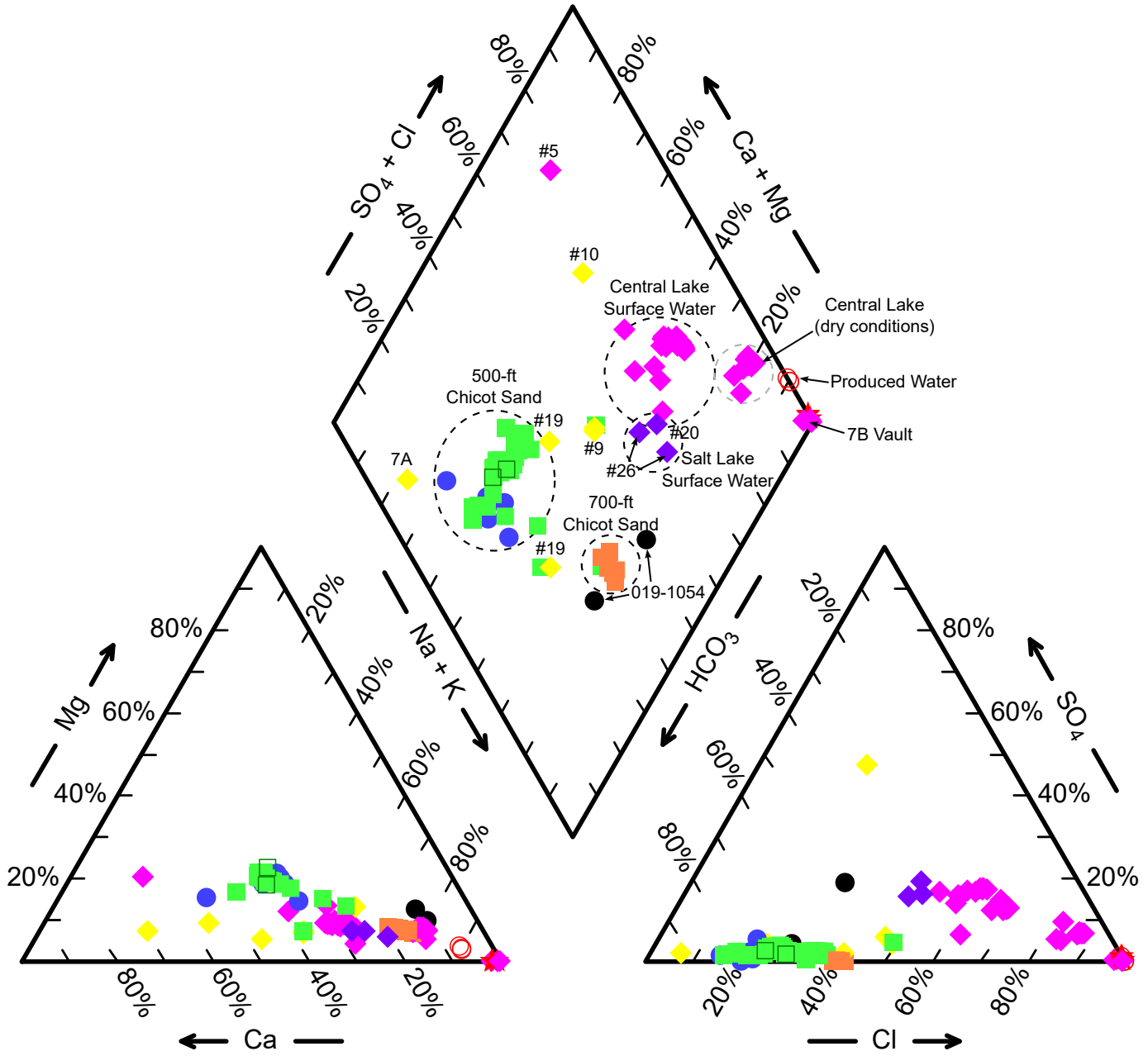
**Legend**

- Oil Sample Location
- Gas Sample Location
- Westlake Property

**Figure 3**  
**Oil and Gas Sampling Locations**  
Sulphur Dome  
Westlake US 2, LLC  
Calcasieu Parish, Louisiana

Notes:  
2021 Aerial imagery via USGS Earth Explorer (NAIP).



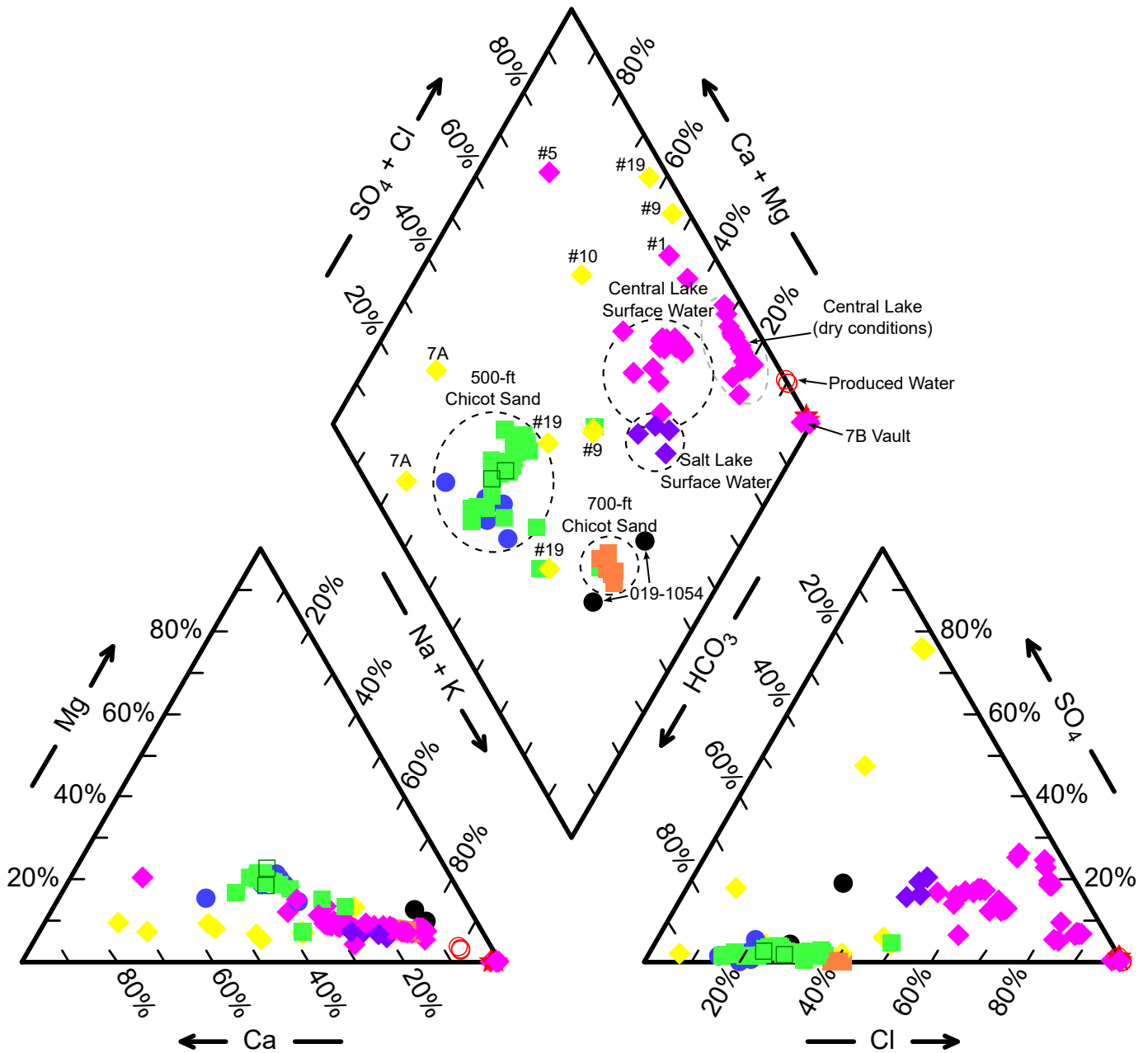


**Legend**

- ◆ Central Lake Surface Water
- ◆ Salt Lake Surface Water
- ◆ Other Surface Water
- Industrial Water Well (Current)
- Industrial Water Well (Historic)
- Cottages Well
- Other Water Well
- 019-1054 (Historic)
- Produced Water
- ★ Brine

**Figure 4**  
**Piper Diagram**  
 Sulphur Dome  
 Westlake US 2, LLC  
 Calcaieue Parish, Louisiana



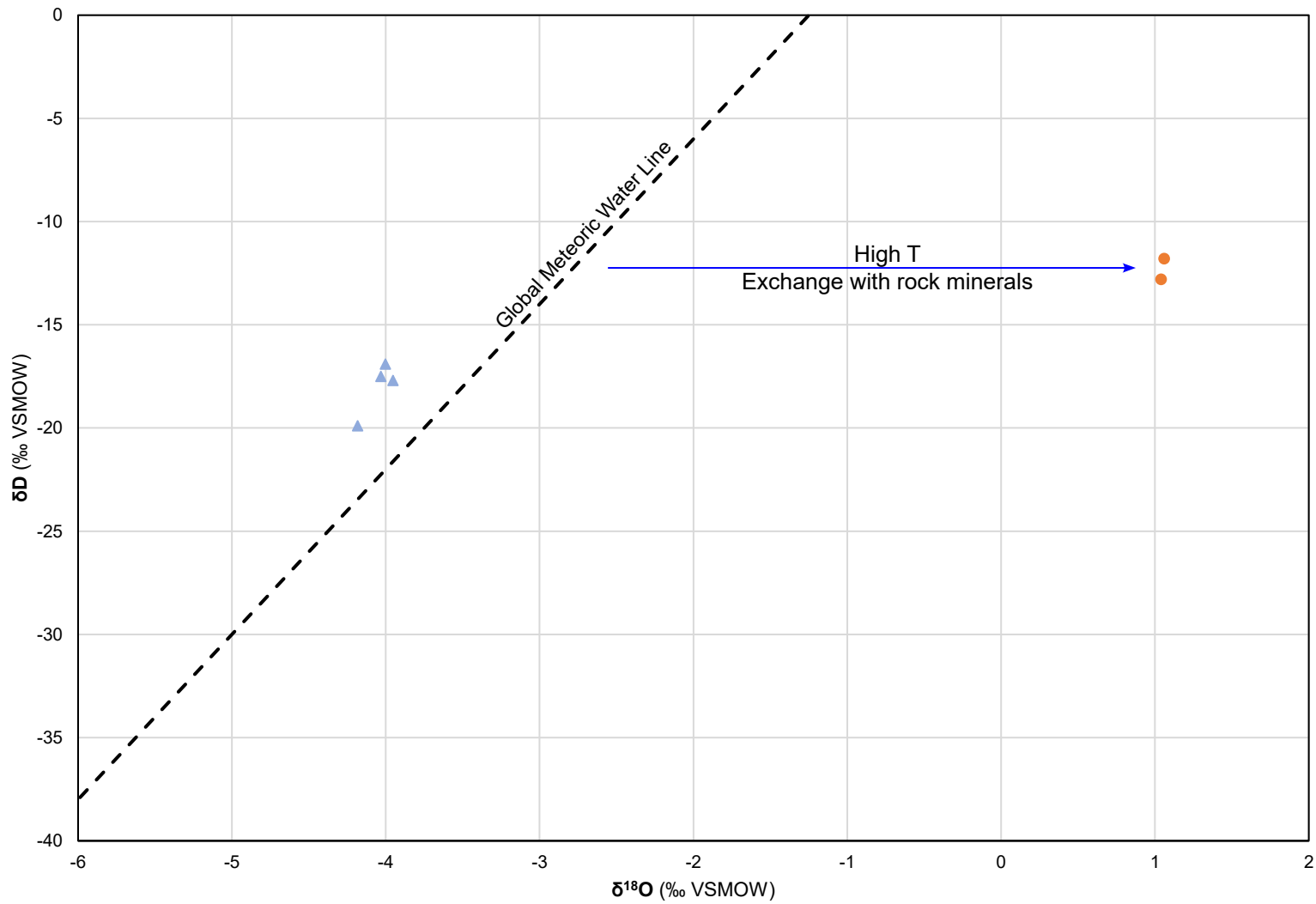


**Legend**

- ◆ Central Lake Surface Water
- ◆ Salt Lake Surface Water
- ◆ Other Surface Water
- Industrial Water Well (Current)
- Industrial Water Well (Historic)
- Cottages Well
- Other Water Well
- 019-1054 (Historic)
- Produced Water
- ★ Brine

**Figure 4**  
**Piper Diagram**  
 Sulphur Dome  
 Westlake US 2, LLC  
 Calcasieu Parish, Louisiana





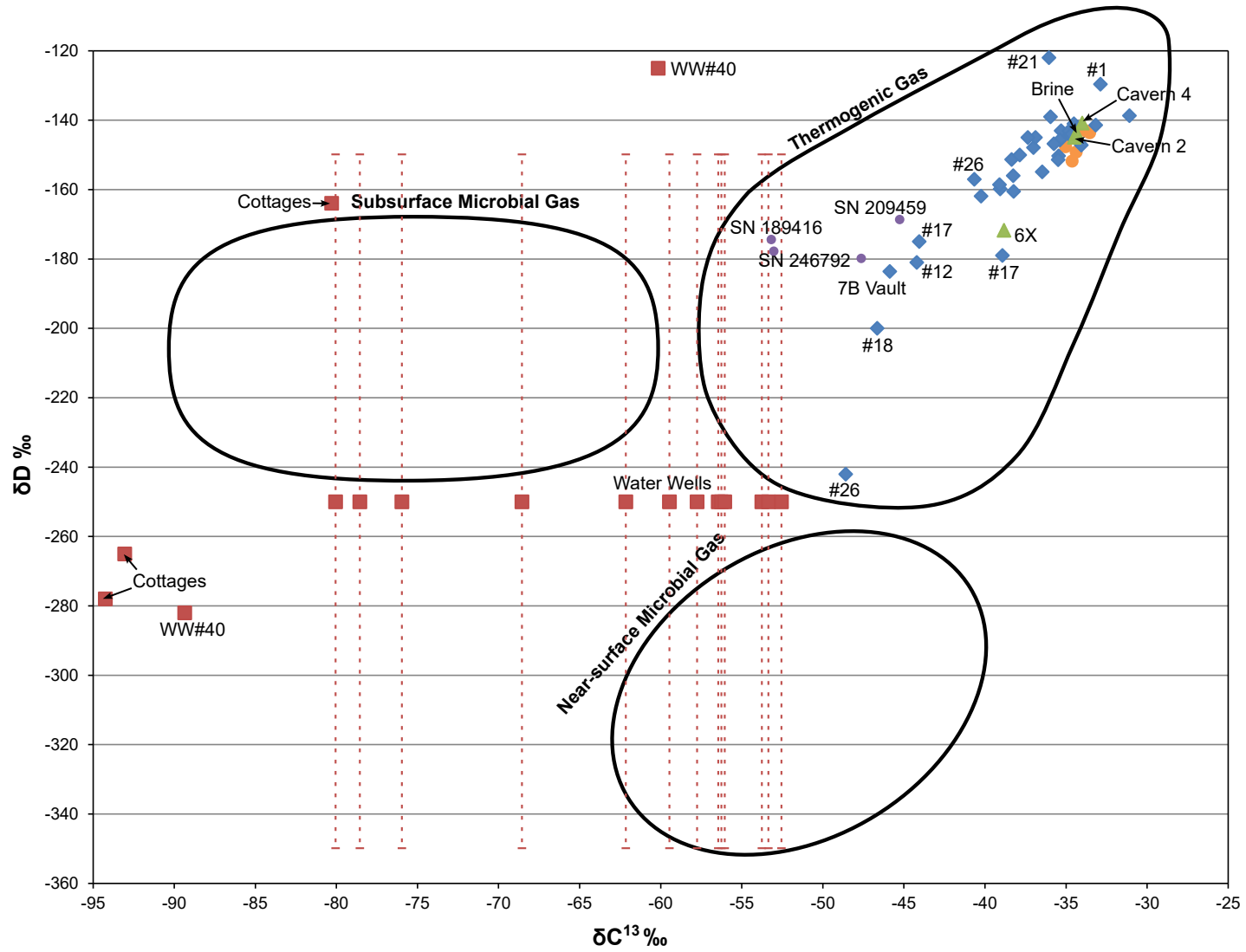
**Legend**

- Produced Water
- ▲ Brine

**Figure 5**  
**Water Stable Isotopes**  
Sulphur Dome  
Westlake US 2, LLC  
Calcasieu Parish, Louisiana

Notes:  
Domenico, P.A. & Schwartz, F.W., 1998, Physical and Chemical Hydrogeology, 2nd ed., John Wiley & Sons, Inc.





**Legend**

- Cavern Gas (Lonquist)
- ◆ Bubble Site
- Groundwater
- ▲ Brine
- Production Gas

**Notes:**

Coleman, D.D., Liu, C., Hackley, K.C., and Pelphrey, S.R., 1995, Identification of Landfill Methane, Environmental Geosciences, Vol. 2, No. 2, pp. 95-103.

**Figure 6**  
**Methane Isotopes**  
 Sulphur Dome  
 Westlake US 2, LLC  
 Calcasieu Parish, Louisiana





TABLES

Table 1  
**Groundwater Data Summary**  
 Sulphur Dome  
 Calcasieu Parish, Louisiana

Constituent	Units	Sample ID Sample Location Sample Interval (ft) Sample Date Sampler	019-580											
			WW #11											
			469											
			1/26/23	3/30/23	4/27/23	5/22/23	6/16/23	7/17/23	8/22/23	9/20/23	10/25/23	11/28/23	12/14/23	
ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM			
		Groundwater												
<b>Total Metals</b>		RECAP GWSS												
Arsenic	mg/L	0.01	0.000477 J	<0.0004	0.000615 J	<0.0004	0.000452 J	0.000556 J	<0.0004	<0.0004	0.000688 J	<0.0004	<0.0004	
Barium	mg/L	2	<b>0.23</b>	<b>0.235</b>	<b>0.205</b>	<b>0.216</b>	<b>0.197</b>	<b>0.200</b>	<b>0.221</b>	<b>0.233</b>	<b>0.217</b>	<b>0.196</b>	<b>0.207</b>	
Cadmium	mg/L	0.005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	
Calcium	mg/L	NS	<b>26.8</b>	<b>25.4</b>	<b>15.8</b>	<b>24.1</b>	<b>22.7</b>	<b>18.9</b>	<b>25.1</b>	<b>27.9</b>	<b>24.5</b>	<b>21.9</b>	<b>24.0</b>	
Chromium	mg/L	0.1	<0.0004	<0.0004	0.000559 J	<0.0004	0.000462 J	<0.0004	0.00172 J	<0.0004	<0.0004	<0.0004	0.000681 J	
Iron <sup>(a)</sup>	mg/L	0.3	<b>5.12</b>	<b>4.25</b>	<b>2.72</b>	<b>1.81</b>	<b>3.61</b>	<b>6.07</b>	<b>4.97</b>	<b>3.57</b>	<b>3.84</b>	<b>3.53</b>	<b>3.66</b>	
Lead	mg/L	0.015	0.00144 J	<0.0006	<0.0006	<0.0006	<0.0006	<b>0.00388</b>	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	
Magnesium	mg/L	NS	<b>8.03</b>	<b>8.10</b>	<b>4.32</b>	<b>7.19</b>	<b>7.43</b>	<b>5.88</b>	<b>7.71</b>	<b>8.54</b>	<b>7.66</b>	<b>7.31</b>	<b>7.35</b>	
Manganese <sup>(a)</sup>	mg/L	0.05	<b>0.412</b>	<b>0.413</b>	<b>0.215</b>	<b>0.317</b>	<b>0.355</b>	<b>0.329</b>	<b>0.411</b>	<b>0.471</b>	<b>0.397</b>	<b>0.36</b>	<b>0.373</b>	
Mercury	mg/L	0.002	<0.00003	<0.00003	<0.00003	<0.00003	0.0000520 J	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	
Nickel	mg/L	0.073	NA	NA	<b>0.00368</b>	<0.0006	<0.0006	<0.0006	0.000793 J	<0.0006	<0.0006	<0.0006	<0.0006	
Potassium	mg/L	NS	<b>2.93</b>	<b>2.68</b>	<b>2.42</b>	<b>2.62</b>	<b>2.51</b>	<b>1.99</b>	<b>2.64</b>	<b>3.06</b>	<b>2.84</b>	<b>2.42</b>	<b>2.63</b>	
Selenium	mg/L	0.05	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	
Silver	mg/L	0.18	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	
Sodium	mg/L	NS	<b>31.9</b>	<b>27.7</b>	<b>71.5</b>	<b>27.4</b>	<b>24.6</b>	<b>19.7</b>	<b>30.2</b>	<b>30.1</b>	<b>28.2</b>	<b>24.3</b>	<b>24.8</b>	
Strontium	mg/L	NS	<b>0.246</b>	<b>0.228</b>	<b>0.183</b>	<b>0.212</b>	<b>0.214</b>	<b>0.175</b>	<b>0.215</b>	<b>0.247</b>	<b>0.220</b>	<b>0.191</b>	<b>0.195</b>	
Vanadium	mg/L	0.026	NA	NA	0.00434 J	<0.0006	0.00322 J	<0.0006	<0.0006	<0.0006	<b>0.0151</b>	0.00157 J	<0.0006	
Zinc	mg/L	1.1	<b>0.0147</b>	<b>0.0495</b>	<b>0.350</b>	<b>0.011</b>	<b>0.0130</b>	<b>0.00934</b>	<b>0.00613</b>	<b>0.0215</b>	<b>0.0103</b>	<b>0.0094</b>	<b>0.0065</b>	
<b>Anions/Water Quality Parameters</b>														
Bicarbonate Alkalinity	mg/L	NS	<b>200</b>	<b>115</b>	<b>116</b>	<b>114</b>	<b>107</b>	<b>118</b>	<b>120</b>	<b>123</b>	<b>114</b>	<b>112</b>	<b>113</b>	
Bromide	mg/L	NS	0.0992 J	<0.03	<0.03	<b>0.169</b>	<0.03	<0.03	0.0634 J	<0.03	<0.03	<0.03	<0.03	
Carbonate Alkalinity	mg/L	NS	<5	<5	<5	<5	<5	<5	<5	<5	<3.50	<3.50	<3.50	
Chloride <sup>(a)</sup>	mg/L	250	<b>35.7</b>	<b>26.4</b>	<b>40.7</b>	<b>38.7</b>	<b>23.7</b>	<b>23.7</b>	<b>37.1</b>	<b>38.1</b>	<b>24.8</b>	<b>23.9</b>	<b>4.65</b>	
Sulfate <sup>(a)</sup>	mg/L	250	<b>2.91</b>	<b>3.67</b>	<b>2.21</b>	<b>3.3</b>	<b>4.28</b>	<b>4.07</b>	<b>2.95</b>	<b>2.58</b>	<b>5.13</b>	<b>4.33</b>	<b>4.65</b>	
Total Dissolved Solids (TDS) <sup>(a)</sup>	mg/L	500	<b>236</b>	<b>186</b>	<b>210</b>	<b>266</b>	<b>204</b>	<b>222</b>	<b>204</b>	<b>232</b>	<b>168</b>	<b>210</b>	<b>138</b>	
Total Organic Carbon (TOC)	mg/L	NS	NA	NA	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	
pH <sup>(a)</sup>	SI	6.5 - 8.5	NA	7.04 H	NA	7.30 H	7.22 H	7.85 H	7.63 H	7.25 H	7.12 H	<b>7.16</b>	7.48 H	
pH (field)	SI	6.5 - 8.5	<b>6.41</b>	NA	<b>5.79</b>	<b>6.68</b>	NA	<b>6.40</b>	<b>6.90</b>	NA	<b>5.83</b>	<b>5.99</b>	<b>6.88</b>	
<b>Sulfides</b>														
Hydrogen Sulfide	mg/L	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Sulfide	mg/L	NS	<1	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.70	<1.70	<1.70	
<b>Volatile Organic Compounds</b>														
Benzene	mg/L	0.005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	
Ethylbenzene	mg/L	0.7	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	
Toluene	mg/L	1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	
m,p-Xylene	mg/L	10	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
o-Xylene	mg/L	10	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	
Xylenes, Total	mg/L	10	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	
<b>TPH Fractions</b>														
Aliphatics >C6-C8	mg/L	3.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.017	<0.085	<0.01	
Aliphatics >C8-C10	mg/L	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.019	<0.07	<0.01	
Aliphatics >C10-C12	mg/L	0.15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Aliphatics >C12-C16	mg/L	0.15	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	
Aliphatics >C16-C35	mg/L	7.3	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<b>0.0243</b>	
Aromatics >C8-C10	mg/L	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.012	<0.07	<0.01	
Aromatics >C10-C12	mg/L	0.15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Aromatics >C12-C16	mg/L	0.15	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<b>0.0661</b>	<0.004	<0.004	
Aromatics >C16-C21	mg/L	0.15	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<b>0.0115</b>	<b>0.0214</b>	<0.003	<0.003	
Aromatics >C21-C35	mg/L	0.15	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<b>0.0450</b>	<0.009	<0.009	
<b>Stable Isotopes</b>														
δD	‰	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
δ18O	‰	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
δ13C (DIC)	‰	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

Notes  
 J - Estimated Value reported below the detection limit.  
 H - pH is received at the lab outside of hold time.  
 < - Not Detected at the reporting limit shown.  
**Bolded** values detected in the sample.  
 NA - Not Analyzed  
 NS - No Standard  
<sup>(a)</sup> - EPA Secondary MCL (No RECAP standard)  
 Shaded values exceed standard

Table 1  
**Groundwater Data Summary**  
 Sulphur Dome  
 Calcasieu Parish, Louisiana

		Sample ID	019-582										
		Sample Location	WW #13										
		Sample Interval (ft)	609										
		Sample Date	1/26/23	3/30/23	4/27/23	5/22/23	6/16/23	7/17/23	8/22/23	9/20/23	10/25/23	11/28/23	12/14/23
		Sampler	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM
Constituent	Units		Groundwater										
<b>Total Metals</b>		<b>RECAP GWSS</b>											
Arsenic	mg/L	0.01	0.000812 J	<0.0004	0.000451 J	0.000418 J	0.000635 J	0.000436 J	0.000488 J	<0.0004	0.000739 J	<0.0004	<0.0004
Barium	mg/L	2	<b>0.239</b>	<b>0.221</b>	<b>0.243</b>	<b>0.232</b>	<b>0.210</b>	<b>0.217</b>	<b>0.224</b>	<b>0.197</b>	<b>0.218</b>	<b>0.188</b>	<b>0.206</b>
Cadmium	mg/L	0.005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Calcium	mg/L	NS	<b>25.5</b>	<b>23.9</b>	<b>25.8</b>	<b>24.6</b>	<b>22.9</b>	<b>21.1</b>	<b>24.2</b>	<b>22.6</b>	<b>22.9</b>	<b>22.3</b>	<b>23.5</b>
Chromium	mg/L	0.1	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.000697 J	0.000469 J	<0.0004	0.00105 J	0.000929 J
Iron <sup>(a)</sup>	mg/L	0.3	<b>4.03</b>	<b>4.02</b>	<b>6.09</b>	<b>6.13</b>	<b>3.28</b>	<b>3.12</b>	<b>3.49</b>	<b>4.49</b>	<b>3.23</b>	<b>2.55</b>	<b>4.7</b>
Lead	mg/L	0.015	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Magnesium	mg/L	NS	<b>7.81</b>	<b>7.66</b>	<b>7.58</b>	<b>7.36</b>	<b>7.36</b>	<b>6.45</b>	<b>7.47</b>	<b>7.05</b>	<b>7.05</b>	<b>7.47</b>	<b>7.08</b>
Manganese <sup>(a)</sup>	mg/L	0.05	<b>0.417</b>	<b>0.388</b>	<b>0.388</b>	<b>0.408</b>	<b>0.361</b>	<b>0.349</b>	<b>0.372</b>	<b>0.353</b>	<b>0.379</b>	<b>0.423</b>	<b>0.388</b>
Mercury	mg/L	0.002	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	0.0000640 J	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003
Nickel	mg/L	0.073	NA	NA	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	0.000831 J	0.000872 J
Potassium	mg/L	NS	<b>2.94</b>	<b>2.50</b>	<b>2.70</b>	<b>2.55</b>	<b>2.49</b>	<b>2.28</b>	<b>2.74</b>	<b>3.30</b>	<b>2.64</b>	<b>2.60</b>	<b>2.54</b>
Selenium	mg/L	0.05	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011
Silver	mg/L	0.18	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sodium	mg/L	NS	<b>28.0</b>	<b>26.4</b>	<b>30.2</b>	<b>27.8</b>	<b>24.7</b>	<b>22.2</b>	<b>29.8</b>	<b>46.5</b>	<b>26.2</b>	<b>24.8</b>	<b>24.4</b>
Strontium	mg/L	NS	<b>0.240</b>	<b>0.208</b>	<b>0.231</b>	<b>0.218</b>	<b>0.221</b>	<b>0.195</b>	<b>0.215</b>	<b>0.201</b>	<b>0.216</b>	<b>0.195</b>	<b>0.192</b>
Vanadium	mg/L	0.026	NA	NA	0.00352 J	<0.0006	0.00358 J	<0.0006	<0.0006	<0.0006	<b>0.0148</b>	0.00222 J	<0.0006
Zinc	mg/L	1.1	<b>0.0107</b>	<b>0.0166</b>	<b>0.0474</b>	<b>0.019</b>	<b>0.00897</b>	<b>0.0102</b>	<b>0.656</b>	<b>0.00742</b>	<b>0.0115</b>	<b>0.00754</b>	<b>0.00922</b>
<b>Anions/Water Quality Parameters</b>													
Bicarbonate Alkalinity	mg/L	NS	<b>180</b>	<b>115</b>	<b>119</b>	<b>120</b>	<b>109</b>	<b>119</b>	<b>116</b>	<b>132</b>	<b>114</b>	<b>112</b>	<b>113</b>
Bromide	mg/L	NS	0.0860 J	<0.03	<0.03	<b>0.168</b>	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Carbonate Alkalinity	mg/L	NS	<5	<5	<5	<5	<5	<5	<5	<5	<3.50	<3.50	<3.50
Chloride <sup>(a)</sup>	mg/L	250	<b>23.4</b>	<b>26.3</b>	<b>40.4</b>	<b>38.1</b>	<b>23.2</b>	<b>23.6</b>	<b>27.7</b>	<b>31.0</b>	<b>23.6</b>	<b>23.8</b>	<b>23.8</b>
Sulfate <sup>(a)</sup>	mg/L	250	<b>4.11</b>	<b>3.68</b>	<b>2.69</b>	<b>2.9</b>	<b>4.30</b>	<b>4.41</b>	<b>3.44</b>	<b>2.73</b>	<b>4.61</b>	<b>4.18</b>	<b>4.42</b>
Total Dissolved Solids (TDS) <sup>(a)</sup>	mg/L	500	<b>212</b>	<b>200</b>	<b>236</b>	<b>248</b>	<b>190</b>	<b>234</b>	<b>226</b>	<b>256</b>	<b>214</b>	<b>184</b>	<b>158</b>
Total Organic Carbon (TOC)	mg/L	NS	NA	NA	NA	NA	NA	NA	<b>2.14</b>	NA	NA	NA	NA
pH <sup>(a)</sup>	SI	6.5 - 8.5	NA	7.01 H	NA	7.37 H	7.36 H	7.75 H	7.23 H	7.42 H	7.21 H	7.24 H	7.57 H
pH (field)	SI	6.5 - 8.5	<b>6.45</b>	<b>6.53</b>	<b>5.89</b>	<b>6.42</b>	NA	<b>6.38</b>	<b>6.80</b>	NA	<b>5.60</b>	<b>6.09</b>	<b>6.91</b>
<b>Sulfides</b>													
Hydrogen Sulfide	mg/L	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sulfide	mg/L	NS	<1	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.70	<1.70	<1.70
<b>Volatile Organic Compounds</b>													
Benzene	mg/L	0.005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Ethylbenzene	mg/L	0.7	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Toluene	mg/L	1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
m,p-Xylene	mg/L	10	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
o-Xylene	mg/L	10	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Xylenes, Total	mg/L	10	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
<b>TPH Fractions</b>													
Aliphatics >C6-C8	mg/L	3.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.017	<0.085	<0.01
Aliphatics >C8-C10	mg/L	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0192	<0.07	<0.01
Aliphatics >C10-C12	mg/L	0.15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aliphatics >C12-C16	mg/L	0.15	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Aliphatics >C16-C35	mg/L	7.3	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<b>0.0206</b>	<0.008	<0.008	<b>0.0205</b>
Aromatics >C8-C10	mg/L	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.012	<0.07	<0.01
Aromatics >C10-C12	mg/L	0.15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aromatics >C12-C16	mg/L	0.15	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Aromatics >C16-C21	mg/L	0.15	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Aromatics >C21-C35	mg/L	0.15	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
<b>Stable Isotopes</b>													
δD	‰	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
δ18O	‰	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
δ13C (DIC)	‰	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes  
 J - Estimated Value reported below the detection limit.  
 H - pH is received at the lab outside of hold time.  
 < - Not Detected at the reporting limit shown.  
**Bolded** values detected in the sample.  
 NA - Not Analyzed  
 NS - No Standard  
<sup>(a)</sup> - EPA Secondary MCL (No RECAP standard)  
 Shaded values exceed standard

Table 1  
**Groundwater Data Summary**  
 Sulphur Dome  
 Calcasieu Parish, Louisiana

Constituent	Units	Sample ID Sample Location Sample Interval (ft) Sample Date Sampler	019-995									
			WW #12									
			485									
			1/26/23	3/30/23	4/27/23	5/22/23	6/16/23	8/22/23	10/25/23	11/28/23	12/14/23	
Groundwater												
<b>Total Metals</b>												
Arsenic	mg/L	0.01	0.000762 J	<0.0004	0.000739 J	0.000497 J	<0.0004	0.000638 J	0.000623 J	0.000555 J	0.000461 J	
Barium	mg/L	2	<b>0.214</b>	<b>0.234</b>	<b>0.242</b>	<b>0.207</b>	<b>0.205</b>	<b>0.211</b>	<b>0.174</b>	<b>0.197</b>	<b>0.194</b>	
Cadmium	mg/L	0.005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	
Calcium	mg/L	NS	<b>26.4</b>	<b>25.3</b>	<b>27.7</b>	<b>24.8</b>	<b>23.0</b>	<b>24.3</b>	<b>21.1</b>	<b>22.8</b>	<b>24.1</b>	
Chromium	mg/L	0.1	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.000600 J	<0.0004	<0.0004	0.000577 J	
Iron <sup>(a)</sup>	mg/L	0.3	<b>0.821</b>	<b>4.76</b>	<b>3.42</b>	<b>2.11</b>	<b>4.88</b>	<b>3.53</b>	<b>1.23</b>	<b>3.42</b>	<b>1.38</b>	
Lead	mg/L	0.015	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	
Magnesium	mg/L	NS	<b>8.02</b>	<b>7.87</b>	<b>8.14</b>	<b>7.47</b>	<b>7.51</b>	<b>7.66</b>	<b>6.40</b>	<b>7.46</b>	<b>7.40</b>	
Manganese <sup>(a)</sup>	mg/L	0.05	<b>0.388</b>	<b>0.403</b>	<b>0.416</b>	<b>0.403</b>	<b>0.375</b>	<b>0.377</b>	<b>0.222</b>	<b>0.35</b>	<b>0.411</b>	
Mercury	mg/L	0.002	<0.00003	0.0000310 J	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	
Nickel	mg/L	0.073	NA	NA	<b>0.00531</b>	<0.0006	0.000820 J	<0.0006	<0.0006	<0.0006	<0.0006	
Potassium	mg/L	NS	<b>3.00</b>	<b>2.60</b>	<b>2.79</b>	<b>2.61</b>	<b>2.53</b>	<b>2.65</b>	<b>2.20</b>	<b>2.36</b>	<b>2.61</b>	
Selenium	mg/L	0.05	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	
Silver	mg/L	0.18	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.000242 J	<0.0002	<0.0002	<0.0002	
Sodium	mg/L	NS	<b>29.9</b>	<b>30.3</b>	<b>32.2</b>	<b>30.5</b>	<b>25.0</b>	<b>27.2</b>	<b>31.6</b>	<b>24.1</b>	<b>25.4</b>	
Strontium	mg/L	NS	<b>0.241</b>	<b>0.221</b>	<b>0.244</b>	<b>0.223</b>	<b>0.220</b>	<b>0.207</b>	<b>0.214</b>	<b>0.197</b>	<b>0.201</b>	
Vanadium	mg/L	0.026	NA	NA	0.00299 J	<0.0006	0.00370 J	<0.0006	<b>0.0130</b>	0.00228 J	<0.0006	
Zinc	mg/L	1.1	<b>0.00426</b>	<0.002	0.00276 J	<0.002	<0.002	0.00218 J	0.00245 J	0.00385 J	0.00244 J	
<b>Anions/Water Quality Parameters</b>												
Bicarbonate Alkalinity	mg/L	NS	<b>258</b>	<b>122</b>	<b>124</b>	<b>128</b>	<b>194</b>	<b>118</b>	<b>129</b>	<b>116</b>	<b>116</b>	
Bromide	mg/L	NS	0.0931 J	0.0782 J	<0.03	<b>0.164</b>	<0.03	<0.03	<0.03	<0.03	<0.03	
Carbonate Alkalinity	mg/L	NS	<5	<5	<5	<5	<5	<5	<3.50	<3.50	<3.50	
Chloride <sup>(a)</sup>	mg/L	250	<b>28.7</b>	<b>36.3</b>	<b>37.5</b>	<b>34.1</b>	<b>23.4</b>	<b>22.2</b>	<b>23.0</b>	<b>24.8</b>	<b>23.6</b>	
Sulfate <sup>(a)</sup>	mg/L	250	<b>3.63</b>	<b>2.80</b>	<b>2.12</b>	<b>2.53</b>	<b>3.57</b>	<b>4.11</b>	<b>1.98</b>	<b>4.38</b>	<b>4.04</b>	
Total Dissolved Solids (TDS) <sup>(a)</sup>	mg/L	500	<b>226</b>	<b>240</b>	<b>202</b>	<b>222</b>	<b>194</b>	<b>228</b>	<b>180</b>	<b>182</b>	<b>138</b>	
Total Organic Carbon (TOC)	mg/L	NS	NA	NA	NA	NA	NA	<b>3.84</b>	NA	NA	NA	
pH <sup>(a)</sup>	SI	6.5 - 8.5	NA	6.94 H	NA	7.55 H	7.30 H	7.32H	7.49 H	7.18 H	7.75 H	
pH (field)	SI	6.5 - 8.5	<b>6.35</b>	<b>6.53</b>	<b>5.64</b>	<b>6.18</b>	NA	<b>6.87</b>	<b>6.15</b>	<b>6.56</b>	<b>6.84</b>	
<b>Sulfides</b>												
Hydrogen Sulfide	mg/L	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Sulfide	mg/L	NS	<1	<1.7	<1.7	<1.7	<1.7	<1.7	<1.70	<1.70	<1.70	
<b>Volatile Organic Compounds</b>												
Benzene	mg/L	0.005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	
Ethylbenzene	mg/L	0.7	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	
Toluene	mg/L	1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	
m,p-Xylene	mg/L	10	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
o-Xylene	mg/L	10	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	
Xylenes, Total	mg/L	10	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	
<b>TPH Fractions</b>												
Aliphatics >C6-C8	mg/L	3.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.017	<0.085	<0.01	
Aliphatics >C8-C10	mg/L	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.019	<0.07	<0.01	
Aliphatics >C10-C12	mg/L	0.15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Aliphatics >C12-C16	mg/L	0.15	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	
Aliphatics >C16-C35	mg/L	7.3	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<b>0.0235</b>	
Aromatics >C8-C10	mg/L	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.012	<0.07	<0.01	
Aromatics >C10-C12	mg/L	0.15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Aromatics >C12-C16	mg/L	0.15	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	
Aromatics >C16-C21	mg/L	0.15	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	
Aromatics >C21-C35	mg/L	0.15	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	
<b>Stable Isotopes</b>												
δD	‰	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	
δ18O	‰	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	
δ13C (DIC)	‰	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	

Notes  
 J - Estimated Value reported below the detection limit.  
 H - pH is received at the lab outside of hold time.  
 < - Not Detected at the reporting limit shown.  
**Bolded** values detected in the sample.  
 NA - Not Analyzed  
 NS - No Standard  
<sup>(a)</sup> - EPA Secondary MCL (No RECAP standard)  
 Shaded values exceed standard

**Table 1  
Groundwater Data Summary  
Sulphur Dome  
Calcasieu Parish, Louisiana**

Constituent	Units	Sample ID Sample Location Sample Interval (ft) Sample Date Sampler	019-1055 WW #19 520'											019-1603 WW #40 520'					
			1/26/23	3/30/23	4/27/23	5/18/23	6/16/23	7/17/23	8/22/23	9/20/23	10/25/23	11/28/23	12/14/23	3/30/23	5/18/23	6/16/23	9/19/23	12/14/23	
			ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	
			Groundwater											Groundwater					
<b>Total Metals</b>			<b>RECAPH GWSS</b>																
Arsenic	mg/L	0.01	0.000419 J	<0.0004	0.000461 J	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.000668 J	0.000616 J	0.000661 J	0.000974 J	<b>0.0044</b>	0.000466 J	<0.0004	<b>0.00215</b>
Barium	mg/L	2	<b>0.265</b>	<b>0.263</b>	<b>0.242</b>	<b>0.256</b>	<b>0.207</b>	<b>0.262</b>	<b>0.229</b>	<b>0.275</b>	<b>0.259</b>	<b>0.241</b>	<b>0.258</b>	<b>0.258</b>	<b>0.258</b>	<b>0.178</b>	<b>0.136</b>	<b>0.173</b>	<b>0.389</b>
Cadmium	mg/L	0.005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002002	<0.0002	<0.0002
Calcium	mg/L	NS	<b>28.7</b>	<b>27.5</b>	<b>24.7</b>	<b>25.9</b>	<b>22.6</b>	<b>24.7</b>	<b>24.2</b>	<b>30.1</b>	<b>26.8</b>	<b>22.3</b>	<b>25.7</b>	<b>26.9</b>	<b>56</b>	<b>22.4</b>	<b>19.7</b>	<b>26.5</b>	
Chromium	mg/L	0.1	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.000535 J	<0.0004	<0.0004	0.00113 J	0.00105 J	<0.0004	0.000825 J	0.000415 J	0.000721 J	0.00123 J	
Iron <sup>(a)</sup>	mg/L	0.3	<b>3.81</b>	<b>3.96</b>	<b>3.48</b>	<b>3.42</b>	<b>4.24</b>	<b>3.72</b>	<b>3.29</b>	<b>3.83</b>	<b>3.68</b>	<b>7.61</b>	<b>3.63</b>	<b>12.4</b>	<b>0.69</b>	<b>4.39</b>	<b>3.45</b>	<b>68.1</b>	
Lead	mg/L	0.015	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	0.000702 J	<0.0006	<0.0006	<0.0006	
Magnesium	mg/L	NS	<b>8.66</b>	<b>8.42</b>	<b>7.32</b>	<b>7.78</b>	<b>7.32</b>	<b>7.45</b>	<b>7.46</b>	<b>9.04</b>	<b>8.31</b>	<b>7.24</b>	<b>8.06</b>	<b>8.33</b>	<b>6.58</b>	<b>7.37</b>	<b>6.34</b>	<b>7.76</b>	
Manganese <sup>(a)</sup>	mg/L	0.05	<b>0.420</b>	<b>0.400</b>	<b>0.353</b>	<b>0.379</b>	<b>0.359</b>	<b>0.369</b>	<b>0.344</b>	<b>0.432</b>	<b>0.392</b>	<b>0.339</b>	<b>0.388</b>	<b>0.506</b>	<b>0.348</b>	<b>0.491</b>	<b>0.297</b>	<b>0.728</b>	
Mercury	mg/L	0.002	<0.00003	0.0000300 J	<0.00003	<0.00003	<0.00003	0.0000570 J	<0.00003	<0.00003	<0.00003	0.0000480 J	0.0000690 J	<0.00003	0.0000720 J	0.0000400 J	<0.00003	<0.00003	
Nickel	mg/L	0.073	NA	NA	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	0.00146 J	<0.0006	NA	<b>0.00202</b>	0.000750 J	0.000615 J	0.00133 J	
Potassium	mg/L	NS	<b>3.10</b>	<b>2.69</b>	<b>2.54</b>	<b>2.74</b>	<b>2.48</b>	<b>2.59</b>	<b>2.54</b>	<b>3.29</b>	<b>2.95</b>	<b>2.31</b>	<b>2.75</b>	<b>2.81</b>	<b>2.61</b>	<b>2.43</b>	<b>3.62</b>	<b>2.65</b>	
Selenium	mg/L	0.05	0.00114 J	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	
Silver	mg/L	0.18	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	
Sodium	mg/L	NS	<b>34.4</b>	<b>32.0</b>	<b>28.5</b>	<b>29.6</b>	<b>24.8</b>	<b>29.0</b>	<b>28.3</b>	<b>35.1</b>	<b>35.6</b>	<b>23.9</b>	<b>32.2</b>	<b>32.1</b>	<b>92.9</b>	<b>24.0</b>	<b>52.1</b>	<b>25.7</b>	
Strontium	mg/L	NS	<b>0.262</b>	<b>0.238</b>	<b>0.225</b>	<b>0.24</b>	<b>0.215</b>	<b>0.229</b>	<b>0.215</b>	<b>0.266</b>	<b>0.249</b>	<b>0.196</b>	<b>0.23</b>	<b>0.235</b>	<b>0.397</b>	<b>0.210</b>	<b>0.177</b>	<b>0.237</b>	
Vanadium	mg/L	0.026	NA	NA	0.00320 J	<0.0006	0.00311 J	<0.0006	<0.000698 J	<0.0006	<b>0.0136</b>	0.00209 J	<b>0.00629</b>	NA	<b>0.0136</b>	0.00320 J	<0.0006	<0.0006	
Zinc	mg/L	1.1	<b>0.00993</b>	<b>0.0107</b>	<b>0.0163</b>	<b>0.00906</b>	<b>0.00514</b>	<b>0.0231</b>	<b>0.0260</b>	<b>0.0241</b>	<b>0.0318</b>	<b>0.0275</b>	<b>0.0060</b>	<b>0.0845</b>	<b>0.0231</b>	<b>0.0200</b>	<b>1.47</b>	<b>0.0362</b>	
<b>Anions/Water Quality Parameters</b>																			
Bicarbonate Alkalinity	mg/L	NS	<b>250</b>	<b>123</b>	<b>119</b>	<b>118</b>	<b>108</b>	<b>135</b>	<b>119</b>	<b>121</b>	<b>120</b>	<b>113</b>	<b>118</b>	<b>125</b>	<b>183</b>	<b>113</b>	<b>144</b>	<b>114</b>	
Bromide	mg/L	NS	0.0982 J	<0.03	<0.03	<b>0.167</b>	<0.03	<0.03	<0.03	<0.03	<0.03	0.0700 J	<0.03	<b>0.101</b>	<0.03	<b>0.143</b>	<0.03	<0.03	
Carbonate Alkalinity	mg/L	NS	<5	<5	<5	<5	<5	<5	<5	<5	<3.50	<3.50	<3.50	<5	<5	<5	<5	<3.50	
Chloride <sup>(a)</sup>	mg/L	250	<b>38.3</b>	<b>36.8</b>	<b>40.6</b>	<b>37.6</b>	<b>23.6</b>	<b>37.4</b>	<b>36.4</b>	<b>37.8</b>	<b>39.6</b>	<b>24.8</b>	<b>39.8</b>	<b>36.6</b>	<b>115</b>	<b>23.0</b>	<b>27.0</b>	<b>24.4</b>	
Sulfate <sup>(a)</sup>	mg/L	250	<b>3.51</b>	<b>3.39</b>	<b>3.55</b>	<b>3.85</b>	<b>4.21</b>	<b>3.77</b>	<b>3.64</b>	<b>3.45</b>	<b>4.00</b>	<b>4.02</b>	<b>4.44</b>	0.426 J	<b>14.5</b>	<b>3.00</b>	<b>2.87</b>	<b>3.16</b>	
Total Dissolved Solids (TDS) <sup>(a)</sup>	mg/L	500	<b>244</b>	<b>230</b>	<b>220</b>	<b>274</b>	<b>176</b>	<b>272</b>	<b>244</b>	<b>238</b>	<b>180</b>	<b>180</b>	<b>236</b>	<b>206</b>	<b>446</b>	<b>192</b>	<b>224</b>	<b>120</b>	
Total Organic Carbon (TOC)	mg/L	NS	NA	NA	NA	NA	NA	NA	1.11	NA	NA	NA	NA	NA	NA	NA	NA	NA	
pH <sup>(a)</sup>	SI	6.5 - 8.5	NA	7.16 H	NA	7.14 H	7.38 H	7.70 H	7.21 H	7.23 H	7.22 H	7.16 H	7.52 H	7.23 H	8.02 H	7.45 H	7.38 H	7.66 H	
pH (field)	SI	6.5 - 8.5	<b>6.82</b>	<b>6.53</b>	<b>5.84</b>	<b>6.46</b>	NA	<b>6.25</b>	<b>7.03</b>	NA	<b>5.73</b>	<b>5.85</b>	<b>6.89</b>	<b>6.68</b>	<b>6.65</b>	NA	<b>6.81</b>	<b>6.99</b>	
<b>Sulfides</b>																			
Hydrogen Sulfide	mg/L	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Sulfide	mg/L	NS	<1	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	
<b>Volatile Organic Compounds</b>																			
Benzene	mg/L	0.005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	
Ethylbenzene	mg/L	0.7	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	
Toluene	mg/L	1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	
m,p-Xylene	mg/L	10	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
o-Xylene	mg/L	10	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	
Xylenes, Total	mg/L	10	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	
<b>TPH Fractions</b>																			
Aliphatics >C6-C8	mg/L	3.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.017	<0.085	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Aliphatics >C8-C10	mg/L	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.019	<0.07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Aliphatics >C10-C12	mg/L	0.15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Aliphatics >C12-C16	mg/L	0.15	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	
Aliphatics >C16-C35	mg/L	7.3	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<b>0.0191</b>	
Aromatics >C8-C10	mg/L	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.012	<0.007	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Aromatics >C10-C12	mg/L	0.15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Aromatics >C12-C16	mg/L	0.15	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	
Aromatics >C16-C21	mg/L	0.15	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	
Aromatics >C21-C35	mg/L	0.15	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	
<b>Stable Isotopes</b>																			
δD	‰	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
δ18O	‰	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
δ13C (DIC)	‰	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

Notes  
 J - Estimated Value reported below the detection limit.  
 H - pH is received at the lab outside of hold time.  
 < - Not Detected at the reporting limit shown.  
**Bolded** values detected in the sample.  
 NA - Not Analyzed  
 NS - No Standard  
 (a) - EPA Secondary MCL (No RECAP standard)  
 Shaded values exceed standard

Table 1  
Groundwater Data Summary  
Sulphur Dome  
Calcasieu Parish, Louisiana

		Sample ID	019-17636Z									
		Sample Location	Cottages Well									
		Sample Interval (ft)	740'									
		Sample Date	3/9/23	4/27/23	5/18/23	6/16/23	7/17/23	8/22/23	9/20/23	10/25/23	11/28/23	12/14/23
		Sampler	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM
Constituent	Units		Groundwater									
<b>Total Metals</b>		RECAP GWSS										
Arsenic	mg/L	0.01	<0.0004	0.000464 J	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Barium	mg/L	2	<b>0.187</b>	<b>0.187</b>	<b>0.171</b>	<b>0.172</b>	<b>0.187</b>	<b>0.160</b>	<b>0.181</b>	<b>0.178</b>	<b>0.177</b>	<b>0.188</b>
Cadmium	mg/L	0.005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Calcium	mg/L	NS	<b>13.7</b>	<b>14.5</b>	<b>14.5</b>	<b>14.4</b>	<b>13.4</b>	<b>12.2</b>	<b>14.4</b>	<b>13.2</b>	<b>13.5</b>	<b>13.8</b>
Chromium	mg/L	0.1	<0.0004	<0.0004	0.00103 J	0.000522 J	<b>0.00744</b>	0.000562 J	<0.0004	<0.0004	<0.0004	0.000404 J
Iron <sup>(a)</sup>	mg/L	0.3	<b>5.57</b>	<b>2.48</b>	<b>4.76</b>	<b>6.04</b>	<b>2.34</b>	<b>1.46</b>	<b>2.35</b>	<b>3.22</b>	<b>3.49</b>	<b>3.32</b>
Lead	mg/L	0.015	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Magnesium	mg/L	NS	<b>3.69</b>	<b>3.97</b>	<b>4.05</b>	<b>3.96</b>	<b>3.72</b>	<b>3.38</b>	<b>4.05</b>	<b>3.70</b>	<b>3.98</b>	<b>3.85</b>
Manganese <sup>(a)</sup>	mg/L	0.05	<b>0.193</b>	<b>0.192</b>	<b>0.224</b>	<b>0.211</b>	<b>0.190</b>	<b>0.156</b>	<b>0.183</b>	<b>0.178</b>	<b>0.185</b>	<b>0.182</b>
Mercury	mg/L	0.002	<0.00003	<0.00003	0.000117 J	<0.00003	0.0000510 J	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003
Nickel	mg/L	0.073	NA	<b>0.00330</b>	<b>0.00408</b>	<b>0.00304</b>	<b>0.00239</b>	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Potassium	mg/L	NS	<b>2.03</b>	<b>2.24</b>	<b>2.31</b>	<b>2.20</b>	<b>2.12</b>	<b>2.03</b>	<b>2.38</b>	<b>2.18</b>	<b>2.11</b>	<b>2.18</b>
Selenium	mg/L	0.05	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011
Silver	mg/L	0.18	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sodium	mg/L	NS	<b>57.7</b>	<b>65.2</b>	<b>71.2</b>	<b>66.2</b>	<b>71.2</b>	<b>72.1</b>	<b>77.9</b>	<b>73.5</b>	<b>75.2</b>	<b>72.5</b>
Strontium	mg/L	NS	<b>0.160</b>	<b>0.167</b>	<b>0.171</b>	<b>0.179</b>	<b>0.157</b>	<b>0.141</b>	<b>0.166</b>	<b>0.165</b>	<b>0.156</b>	<b>0.161</b>
Vanadium	mg/L	0.026	NA	0.00270 J	<b>0.0006</b>	0.00295 J	<0.0006	0.000689 J	<0.0006	<b>0.0139</b>	0.00204 J	<0.0006
Zinc	mg/L	1.1	<b>0.255</b>	<b>0.320</b>	<b>0.202</b>	<b>0.203</b>	<b>0.798</b>	<b>0.0237</b>	<b>0.0981</b>	<b>0.166</b>	<b>0.17</b>	<b>0.151</b>
<b>Anions/Water Quality Parameters</b>												
Bicarbonate Alkalinity	mg/L	NS	<b>139</b>	<b>134</b>	<b>139</b>	<b>132</b>	<b>153</b>	<b>153</b>	<b>141</b>	<b>146</b>	<b>142</b>	<b>144</b>
Bromide	mg/L	NS	<b>0.102</b>	<b>0.105</b>	<b>0.19</b>	<b>0.179</b>	<b>0.156</b>	<b>0.118</b>	<b>0.106</b>	<b>0.122</b>	<b>0.126</b>	<b>0.152</b>
Carbonate Alkalinity	mg/L	NS	<5	<5	<5	<5	<5	<5	<5	<3.50	<3.50	<3.50
Chloride <sup>(a)</sup>	mg/L	250	<b>52.8</b>	<b>55.6</b>	<b>52.8</b>	<b>52.6</b>	<b>59.6</b>	<b>57.5</b>	<b>54.5</b>	<b>56.9</b>	<b>57.4</b>	<b>56.8</b>
Sulfate <sup>(a)</sup>	mg/L	250	<0.2	0.286 J	<b>0.574</b>	<b>0.608</b>	0.277 J	0.462 J	0.300 J	0.491 J	0.297 J	0.322 J
Total Dissolved Solids (TDS) <sup>(a)</sup>	mg/L	500	<b>274</b>	<b>250</b>	<b>284</b>	<b>244</b>	<b>308</b>	<b>270</b>	<b>270</b>	<b>236</b>	<b>268</b>	<b>200</b>
Total Organic Carbon (TOC)	mg/L	NS	NA	NA	NA	NA	NA	<b>1.38</b>	NA	NA	NA	NA
pH <sup>(a)</sup>	SI	6.5 - 8.5	NA	NA	7.63 H	7.30 H	7.91 H	7.32 H	7.44 H	7.63 H	7.29 H	7.49 H
pH (field)	SI	6.5 - 8.5	<b>7.67</b>	<b>5.73</b>	<b>7.06</b>	NA	<b>6.28</b>	<b>7.05</b>	NA	<b>6.05</b>	<b>6.63</b>	<b>6.94</b>
<b>Sulfides</b>												
Hydrogen Sulfide	mg/L	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sulfide	mg/L	NS	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.70	<1.70	<1.70
<b>Volatile Organic Compounds</b>												
Benzene	mg/L	0.005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Ethylbenzene	mg/L	0.7	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Toluene	mg/L	1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
m,p-Xylene	mg/L	10	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
o-Xylene	mg/L	10	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Xylenes, Total	mg/L	10	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
<b>TPH Fractions</b>												
Aliphatics >C6-C8	mg/L	3.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.017	<0.085	<0.01
Aliphatics >C8-C10	mg/L	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.019	<0.07	<0.01
Aliphatics >C10-C12	mg/L	0.15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aliphatics >C12-C16	mg/L	0.15	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Aliphatics >C16-C35	mg/L	7.3	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Aromatics >C8-C10	mg/L	0.15	<b>0.0132</b>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.012	<0.07	<0.07	<0.01
Aromatics >C10-C12	mg/L	0.15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aromatics >C12-C16	mg/L	0.15	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Aromatics >C16-C21	mg/L	0.15	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Aromatics >C21-C35	mg/L	0.15	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
<b>Stable Isotopes</b>												
δD	‰	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
δ18O	‰	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
δ13C (DIC)	‰	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes  
J - Estimated Value reported below the detection limit.  
H - pH is received at the lab outside of hold time.  
< - Not Detected at the reporting limit shown.  
**Bolded** values detected in the sample.  
NA - Not Analyzed  
NS - No Standard  
<sup>(a)</sup> - EPA Secondary MCL (No RECAP standard)  
Shaded values exceed standard

Table 1  
Groundwater Data Summary  
Sulphur Dome  
Calcasieu Parish, Louisiana

Constituent	Units	Sample ID Sample Location Sample Interval (ft) Sample Date Sampler	6X Brine	007-B Brine			SN 973224	SN 973365	SN 974245	Tank Battery	189416	
			SN 57788	SN 67270	7B-Brine	Starks Tie-In	Brine Well 18	Brine Well 21	Brine Well 22	Produced Water	SN 189416	
			Brine	3,000'	3,000'	10/30/23	10/30/23	10/30/23	10/30/23	5/25/23	1,300'	2,700'
			ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM
			Brine						Produced Water			
<b>Total Metals</b>		RECAP GWSS										
Arsenic	mg/L	0.01	0.0300 J	<0.04	<0.04	NA	NA	NA	NA	<0.008	<0.008	<0.008
Barium	mg/L	2	<b>0.220</b>	<0.19	<0.19	NA	NA	NA	NA	<b>60.1</b>	<b>67.4</b>	<b>80.6</b>
Cadmium	mg/L	0.005	<0.01	<0.02	<0.02	NA	NA	NA	NA	<0.004	<0.004	<0.004
Calcium	mg/L	NS	<b>722</b>	<b>1,320</b>	<b>1,360</b>	NA	NA	NA	NA	<b>2,940</b>	<b>2,920</b>	<b>3,050</b>
Chromium	mg/L	0.1	<b>0.243</b>	<b>0.722</b>	0.114 J	NA	NA	NA	NA	0.0717 J	0.0593 J	0.0606 J
Iron <sup>(a)</sup>	mg/L	0.3	<b>25.7</b>	9.65 J	2.78 J	NA	NA	NA	NA	1.94 J	<b>31.1</b>	<b>32.4</b>
Lead	mg/L	0.015	<0.03	<0.06	<0.06	NA	NA	NA	NA	<0.012	<b>0.0839</b>	0.0342 J
Magnesium	mg/L	NS	8.16 J	8.64 J	9.30 J	NA	NA	NA	NA	<b>971</b>	<b>832</b>	<b>843</b>
Manganese <sup>(a)</sup>	mg/L	0.05	<b>0.953</b>	0.487 J	0.361 J	NA	NA	NA	NA	<b>1.43</b>	<b>6.78</b>	<b>6.60</b>
Mercury	mg/L	0.002	<0.00003	<0.00003	<0.00003	NA	NA	NA	NA	<0.00003	<0.00003	<0.00003
Nickel	mg/L	0.073	NA	NA	<b>0.211</b>	NA	NA	NA	NA	<0.012	<b>0.124</b>	<b>0.125</b>
Potassium	mg/L	NS	<b>14.4</b>	13.8 J	14.0 J	NA	NA	NA	NA	<b>185</b>	<b>182</b>	<b>190</b>
Selenium	mg/L	0.05	<0.0550	<0.11	<0.11	NA	NA	NA	NA	<0.022	<0.022	<0.022
Silver	mg/L	0.18	<0.01	<0.02	<0.02	NA	NA	NA	NA	<0.004	<0.004	<0.004
Sodium	mg/L	NS	<b>100,000</b>	<b>82,600</b>	<b>91,900</b>	NA	NA	NA	NA	<b>44,000</b>	<b>45,400</b>	<b>47,900</b>
Strontium	mg/L	NS	<b>2.66</b>	<b>11.0</b>	<b>10.7</b>	NA	NA	NA	NA	<b>134</b>	<b>149</b>	<b>162</b>
Vanadium	mg/L	0.026	NA	NA	<0.06	NA	NA	NA	NA	<0.012	<0.012	<0.012
Zinc	mg/L	1.1	<b>0.481</b>	<b>1.70</b>	<b>1.55</b>	NA	NA	NA	NA	0.0695 J	<b>7.10</b>	<b>1.54</b>
<b>Anions/Water Quality Parameters</b>												
Bicarbonate Alkalinity	mg/L	NS	<b>159</b>	<b>140</b>	<b>124</b>	NA	NA	NA	NA	<b>204</b>	<b>95.9</b>	<b>94.0</b>
Bromide	mg/L	NS	<3	<7.5	<15	NA	NA	NA	NA	<b>79.5</b>	<b>96.4</b>	<b>95.7</b>
Carbonate Alkalinity	mg/L	NS	<5	<5	<5	NA	NA	NA	NA	<5	<5	<5
Chloride <sup>(a)</sup>	mg/L	250	<b>213,000</b>	<b>201,000</b>	<b>179,000</b>	NA	NA	NA	NA	<b>79,900</b>	<b>70,500</b>	<b>72,600</b>
Sulfate <sup>(a)</sup>	mg/L	250	<b>1,380</b>	<b>3,060</b>	<b>3,270</b>	NA	NA	NA	NA	<b>1,340</b>	<10	<10
Total Dissolved Solids (TDS) <sup>(a)</sup>	mg/L	500	<b>239,000</b>	<b>300,000</b>	<b>255,000</b>	NA	NA	NA	NA	<b>161,000</b>	<b>159,000</b>	<b>149,000</b>
Total Organic Carbon (TOC)	mg/L	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH <sup>(a)</sup>	SI	6.5 - 8.5	NA	NA	6.75 H	NA	NA	NA	NA	6.97 H	8.10 H	8.06 H
pH (field)	SI	6.5 - 8.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Sulfides</b>												
Hydrogen Sulfide	mg/L	NS	<0.5	<0.5	<0.5	NA	NA	NA	NA	<b>1.7</b>	<b>23.1</b>	<b>23.3</b>
Sulfide	mg/L	NS	<1	<1	<1.7	NA	NA	NA	NA	<1.7	<1.7	<1.7
<b>Volatile Organic Compounds</b>												
Benzene	mg/L	0.005	<b>0.170</b>	<b>0.092</b>	<b>0.360</b>	NA	NA	NA	NA	<0.0002	<0.005	<0.005
Ethylbenzene	mg/L	0.7	0.0075 J	<0.0003	<b>0.0059</b>	NA	NA	NA	NA	<0.0003	<0.0075	<0.0075
Toluene	mg/L	1	<b>0.110</b>	<b>0.025</b>	<b>0.130</b>	NA	NA	NA	NA	<0.0002	<0.005	<0.005
m,p-Xylene	mg/L	10	0.013 J	<0.0005	<b>0.0079</b>	NA	NA	NA	NA	<0.0005	<0.012	<0.012
o-Xylene	mg/L	10	0.0091 J	<0.0003	<b>0.0079</b>	NA	NA	NA	NA	<0.0003	<0.0075	<0.0075
Xylenes, Total	mg/L	10	<b>0.022</b>	<0.0003	<b>0.016</b>	NA	NA	NA	NA	<0.0003	<0.0075	<0.0075
<b>TPH Fractions</b>												
Aliphatics >C6-C8	mg/L	3.2	<b>0.0997</b>	<b>0.0803</b>	<b>0.147</b>	NA	NA	NA	NA	<b>0.144</b>	<b>1.08</b>	<1
Aliphatics >C8-C10	mg/L	0.15	<0.01	<b>0.107</b>	<0.01	NA	NA	NA	NA	<b>0.0131</b>	<b>2.58</b>	<1
Aliphatics >C10-C12	mg/L	0.15	<0.001	NA	<0.00192	NA	NA	NA	NA	<b>0.969</b>	<b>5.78</b>	<b>3.05</b>
Aliphatics >C12-C16	mg/L	0.15	<0.002	NA	<b>0.0288</b>	NA	NA	NA	NA	<b>3.77</b>	<b>37.4</b>	<b>20.2</b>
Aliphatics >C16-C35	mg/L	7.3	<0.008	NA	<b>0.774</b>	NA	NA	NA	NA	<b>4.44</b>	<b>118</b>	<b>65.3</b>
Aromatics >C8-C10	mg/L	0.15	<b>0.0284</b>	<b>0.422</b>	<b>0.0373</b>	NA	NA	NA	NA	<b>0.0557</b>	<b>1.23</b>	<1
Aromatics >C10-C12	mg/L	0.15	<0.001	NA	<b>0.00293</b>	NA	NA	NA	NA	<b>0.211</b>	<b>1.62</b>	<b>0.714</b>
Aromatics >C12-C16	mg/L	0.15	<0.004	NA	<b>0.0109</b>	NA	NA	NA	NA	<b>1.29</b>	<b>12.8</b>	<b>5.52</b>
Aromatics >C16-C21	mg/L	0.15	<0.003	NA	<b>0.0281</b>	NA	NA	NA	NA	<b>1.09</b>	<b>19.5</b>	<b>9.75</b>
Aromatics >C21-C35	mg/L	0.15	<0.009	NA	<b>0.161</b>	NA	NA	NA	NA	<b>1.05</b>	<b>38.2</b>	<b>20.3</b>
<b>Stable Isotopes</b>												
δD	‰	NS	NA	NA	NA	-19.9	-17.7	-17.5	-16.9	NA	-11.8	-12.8
δ18O	‰	NS	NA	NA	NA	-4.18	-3.95	-4.03	-4.00	NA	1.06	1.04
δ13C (DIC)	‰	NS	NA	NA	NA	-13.2	-14.0	-14.1	-13.9	NA	NA	NA

Notes  
J - Estimated Value reported below the detection limit.  
H - pH is received at the lab outside of hold time.  
< - Not Detected at the reporting limit shown.  
**Bolded** values detected in the sample.  
NA - Not Analyzed  
NS - No Standard  
<sup>(a)</sup> - EPA Secondary MCL (No RECAP standard)  
Shaded values exceed standard

Table 2  
**Surface Water Data Summary**  
 Sulphur Dome  
 Calcasieu Parish, Louisiana

LDNR Sample No.	#1			#3			#4			#5				#6				
	Sample ID	BS-1	BS-1	CP BS 1	BS-3	BS-3	CP BS 2	BS-4	BS-4	CP BS 3	BS-5	BS-5	BS-5	BS-6	BS-6	BS-6	BS-6	
Sample Date	1/25/23	5/18/23	12/11/23	1/30/23	5/22/23	9/18/23	12/11/23	1/30/23	5/22/23	12/11/23	1/30/23	5/17/23	9/19/23	12/13/23	2/28/23	5/18/23	9/19/23	12/12/23
Sample Interval (ft)	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Sampler	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM
Constituent	Bubble Site (Surface Water)																	
Units																		
<b>Total Metals</b>																		
Arsenic mg/L	0.00149 J	<b>0.00594</b>	0.00135 J	0.000862 J	0.00113 J	<b>0.00442</b>	0.00142 J	0.000868 J	0.00110 J	<b>0.00211</b>	0.000769 J	0.00139 J	0.00168 J	0.00151 J	0.000784 J	0.00108 J	<b>0.00200</b>	0.00134 J
Barium mg/L	<b>0.300</b>	<b>0.317</b>	<b>0.122</b>	<b>0.160</b>	<b>0.156</b>	<b>0.453</b>	<b>0.344</b>	<b>0.367</b>	<b>0.276</b>	<b>0.201</b>	<b>0.155</b>	<b>0.216</b>	<b>0.413</b>	<b>0.385</b>	<b>0.116</b>	<b>0.152</b>	<b>0.446</b>	<b>0.37</b>
Cadmium mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Calcium mg/L	<b>71.2</b>	<b>83.5</b>	<b>98.2</b>	<b>75.3</b>	<b>65.9</b>	<b>88.2</b>	<b>174</b>	<b>64.2</b>	<b>69.6</b>	<b>175</b>	<b>77.7</b>	<b>73.3</b>	<b>74.5</b>	<b>147</b>	<b>66.3</b>	<b>77.7</b>	<b>82.8</b>	<b>140.2</b>
Chromium mg/L	0.000847 J	0.00159 J	0.000590 J	<0.0004	0.00201 J	0.000602 J	0.000578 J	<0.0004	<0.0004	0.00159 J	<0.0004	0.000998 J	<0.0004	0.00274 J	<0.0004	0.000731 J	<0.0004	0.00196 J
Iron mg/L	<b>1.14</b>	<b>3.04</b>	<b>0.879</b>	0.132 J	0.118 J	<b>0.254</b>	<b>1.06</b>	0.0258 J	0.0647 J	<b>8.23</b>	0.125 J	0.160 J	0.0875 J	0.0794 J	0.0485 J	0.0249 J	0.0871 J	0.0757 J
Lead mg/L	<b>0.00208</b>	<b>0.00466</b>	<0.0006	<0.0006	<0.0006	0.000710 J	<0.0006	<0.0006	<0.0006	0.00103 J	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Magnesium mg/L	<b>19.8</b>	<b>16.1</b>	<b>25.9</b>	<b>15.0</b>	<b>12.0</b>	<b>25.4</b>	<b>41.8</b>	<b>12.6</b>	<b>13.6</b>	<b>42.8</b>	<b>15.0</b>	<b>14.7</b>	<b>28.0</b>	<b>40.1</b>	<b>11.7</b>	<b>12.4</b>	<b>31.1</b>	<b>38.8</b>
Manganese mg/L	<b>0.797</b>	<b>1.75</b>	<b>1.34</b>	<b>0.266</b>	<b>0.389</b>	<b>0.859</b>	<b>0.977</b>	<b>0.458</b>	<b>0.747</b>	<b>3.15</b>	<b>0.232</b>	<b>2.28</b>	<b>0.523</b>	<b>0.145</b>	<b>0.813</b>	<b>0.645</b>	<b>1.18</b>	<b>0.19</b>
Mercury mg/L	<0.00003	0.000090 J	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	0.0000670 J	<0.00003	<0.00003
Nickel mg/L	NA	<b>0.00641</b>	<b>0.00473</b>	NA	0.00114 J	<b>0.00212</b>	<b>0.00838</b>	NA	<b>0.00385</b>	<b>0.00519</b>	NA	0.00168 J	0.000949 J	<b>0.00322</b>	NA	0.00124 J	0.00128 J	<b>0.00265</b>
Potassium mg/L	<b>2.57</b>	<b>2.83</b>	<b>2.81</b>	<b>2.90</b>	<b>2.17</b>	<b>4.09</b>	<b>5.28</b>	<b>2.58</b>	<b>2.34</b>	<b>5.52</b>	<b>2.86</b>	<b>2.53</b>	<b>4.25</b>	<b>4.78</b>	<b>2.31</b>	<b>2.18</b>	<b>4.63</b>	<b>4.71</b>
Selenium mg/L	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011
Silver mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sodium mg/L	<b>156</b>	<b>123</b>	<b>161</b>	<b>174</b>	<b>155</b>	<b>534</b>	<b>630</b>	<b>166</b>	<b>176</b>	<b>581</b>	<b>19.1</b>	<b>203</b>	<b>571</b>	<b>792</b>	<b>142</b>	<b>161</b>	<b>598</b>	<b>649</b>
Strontium mg/L	<b>0.619</b>	<b>0.598</b>	<b>0.622</b>	<b>0.556</b>	<b>0.479</b>	<b>0.894</b>	<b>1.32</b>	<b>0.482</b>	<b>0.532</b>	<b>1.21</b>	<b>0.578</b>	<b>0.552</b>	<b>0.883</b>	<b>1.19</b>	<b>0.441</b>	<b>0.496</b>	<b>0.930</b>	<b>1.14</b>
Vanadium mg/L	NA	<b>0.00639</b>	0.00189 J	NA	0.00324 J	<b>0.0115</b>	<b>0.00626</b>	NA	0.00181 J	<b>0.00569</b>	NA	0.00207 J	0.00499 J	<b>0.00628</b>	NA	0.00171 J	<b>0.00667</b>	<b>0.00593</b>
Zinc mg/L	<b>0.00857</b>	<b>0.0179</b>	<b>0.0135</b>	<b>0.00452</b>	<b>0.0448</b>	<b>0.0243</b>	<b>0.0395</b>	0.00213 J	0.00289 J	<b>0.0186</b>	<b>0.00748</b>	0.00250 J	0.00357 J	<b>0.0297</b>	<0.002	0.00307 J	0.00336 J	<b>0.00469</b>
<b>Anions/Water Quality Parameters</b>																		
Bicarbonate Alkalinity mg/L	<b>269</b>	<b>178</b>	<b>84.9</b>	<b>241</b>	<b>149</b>	<b>206</b>	<b>114</b>	<b>238</b>	<b>164</b>	<b>105</b>	<b>245</b>	<b>150</b>	<b>107</b>	<b>146</b>	<b>148</b>	<b>143</b>	<b>116</b>	<b>146</b>
Bromide mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Carbonate Alkalinity mg/L	<5	<5	<3.50	<5	<5	<5	<3.50	<5	<5	<3.50	<5	<5	<3.50	<5	<5	<5	<5	<3.50
Chloride mg/L	<b>317</b>	<b>213</b>	<b>346</b>	<b>308</b>	<b>322</b>	<b>928</b>	<b>1,110</b>	<b>296</b>	<b>340</b>	<b>1,140</b>	<b>343</b>	<b>332</b>	<b>982</b>	<b>1,140</b>	<b>253</b>	<b>302</b>	<b>957</b>	<b>1,150</b>
Sulfate mg/L	<b>45.2</b>	<b>70.3</b>	<b>179</b>	<b>113</b>	<b>89.6</b>	<b>74.9</b>	<b>473</b>	<b>111</b>	<b>83.5</b>	<b>531</b>	<b>135</b>	<b>82.9</b>	<b>105</b>	<b>388</b>	<b>96.8</b>	<b>90.7</b>	<b>101</b>	<b>386</b>
Total Dissolved Solids (TDS) mg/L	<b>676</b>	<b>760</b>	<b>716</b>	<b>80.0</b>	<b>880</b>	<b>1,990</b>	<b>2,500</b>	<b>512</b>	<b>864</b>	<b>2,940</b>	<b>892</b>	<b>792</b>	<b>1,990</b>	<b>2,870</b>	<b>710</b>	<b>784</b>	<b>2,030</b>	<b>2,810</b>
pH	NA	7.20 H	7.18 H	NA	7.75 H	6.97 H	7.41 H	NA	7.66 H	6.93 H	NA	7.79 H	8.61 H	7.85 H	NA	7.96 H	7.84 H	7.96 H
<b>Sulfides</b>																		
Hydrogen Sulfide mg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sulfide mg/L	<1	<1.7	<1.7	<1	<1.7	<1.7	<1.7	<1	<1.7	<1.7	<1	<1.7	<1.7	<1.7	<1	<1.7	<1.7	<1.7
<b>Volatile Organic Compounds</b>																		
Benzene mg/L	<b>0.00120</b>	<0.0002	0.66 J	<0.0002	<0.0002	0.00046 J	<0.0002	<0.0002	<0.0002	<b>1.1</b>	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Ethylbenzene mg/L	<0.0003	0.58 J	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Toluene mg/L	0.00079 J	<0.0002	<0.0002	<0.0002	<0.0002	<b>0.0011</b>	<0.0002	<0.0002	<0.0002	0.87 J	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
m,p-Xylene mg/L	<0.0005	<0.0005	0.66 J	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
o-Xylene mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Xylenes, Total mg/L	<0.0003	<0.0003	0.66 J	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
<b>TPH Fractions</b>																		
Aliphatics >C8-C8 mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<b>0.134</b>	<0.01	<0.01	<0.01	<b>0.0645</b>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10 mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12 mg/L	<0.01	<b>0.0202</b>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C12-C16 mg/L	<b>0.0746</b>	<b>0.234</b>	<0.01	<0.02	<0.02	<b>0.052</b>	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C16-C35 mg/L	<b>0.249</b>	<b>0.876</b>	<b>0.0367</b>	<0.008	<0.008	<b>0.0546</b>	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<b>0.0288</b>
Aromatics >C8-C10 mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >C10-C12 mg/L	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aromatics >C12-C16 mg/L	<b>0.0417</b>	<b>0.0179</b>	<b>0.0146</b>	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Aromatics >C16-C21 mg/L	<b>0.121</b>	<b>0.0535</b>	<b>0.0259</b>	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Aromatics >C21-C35 mg/L	<0.009	<b>0.0511</b>	<b>0.0197</b>	<0.009	<0.009	<b>0.0290</b>	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<b>0.0145</b>	<0.009	<0.009	<0.009	<b>0.0379</b>	<0.009

Notes  
 J - Estimated Value reported below the detection limit.  
 H - pH is received at the lab outside of hold time (15 min from sampling).  
 < - Not Detected at the reporting limit shown.  
**Bolded** values detected in the sample.





Table 2  
Surface Water Data Summary  
Sulphur Dome  
Calcasieu Parish, Louisiana

LDNR Sample No. Sample ID Sample Date Sample Interval (ft) Sampler	#24		#25		#26			WPB PPB No.7A		WPB PPB No.7B			#2	#20			
	BS-24	BS-24	BS-25	BS-25	BS-26	BS-26	BS-26	Brine Well 7A BS	7A-BS	Brine Well 7B BS	BW-7B-BS	7B-BS	Culvert	Central Pond	No. 20		
	5/22/23	12/11/23	9/20/23	12/12/23	7/17/23	9/18/23	12/11/23	1/25/23	12/11/23	2/16/23	5/18/23	9/18/23	1/25/23	1/25/23	3/9/23		
	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface		
Units	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM		
Constituent	Bubble Site (Surface Water)																
Total Metals	Surface Water																
Arsenic	mg/L	0.00124 J	0.00173 J	0.00215	0.00143 J	0.00246	0.00130 J	0.00190 J	0.000767 J	0.00192 J	0.0202 J	<0.0004	0.000799 J	<0.002	0.00141 J	0.00192 J	0.00109 J
Barium	mg/L	0.226	0.327	0.393	0.386	1.07	0.540	0.504	0.232	0.133	1.23	0.118	3.71	1.04	0.0832	0.146	0.43
Cadmium	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.000664 J	<0.01	<0.0002	0.000336 J	<0.001	<0.0002	<0.0004	<0.0002
Calcium	mg/L	71.8	192	83.7	151	11.5	9.70	10.20	24.5	29.8	141	23.8	65.6	61.9	8.98	149	8.98
Chromium	mg/L	<0.0004	0.00100 J	0.00101 J	0.00224 J	0.00322 J	<0.0004	0.000515 J	0.000474 J	0.00218 J	0.114 J	0.00175 J	0.000523 J	0.00341 J	0.00101 J	0.00458 J	<0.0004
Iron	mg/L	0.327	2.56	0.172 J	0.0452 J	1.06	0.0902 J	0.146 J	0.0406 J	0.267	3.34 J	0.98	1.43	1.35	0.207	2.07	0.148 J
Lead	mg/L	<0.0006	0.000602 J	<0.0006	<0.0006	0.00946	<0.0006	0.000846 J	<0.0006	0.00251	<0.03	0.00245	0.00300	0.00409 J	<0.0006	<0.00120	<0.0006
Magnesium	mg/L	12.5	40.2	35.5	40.6	1.90	1.70	1.91	1.54	2.29	2.85 J	1.73	1.78	1.77	5.44	37.8	1.6
Manganese	mg/L	0.574	2.22	0.557	0.181	0.516	0.0277	0.0524	0.0215	0.0205	0.509	0.161	0.211	0.324	0.00934	0.847	0.0163
Mercury	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	0.0000500 J	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.000358	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Nickel	mg/L	0.000869 J	0.0041	0.00115 J	0.00249	0.00271	<0.0006	0.000815 J	NA	0.0033	NA	0.00417	0.00268	0.00858 J	NA	NA	NA
Potassium	mg/L	2.6	7.04	4.87	4.87	1.19	1.44	1.55	1.02	1.42	1.78 J	1.3	2.13	3.58	2.86	3.22	1.2
Selenium	mg/L	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.055	<0.0011	0.00156 J	<0.0055	<0.0011	0.0022	<0.0011
Silver	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.01	<0.0002	<0.0002	<0.001	<0.0002	<0.0004	<0.0002
Sodium	mg/L	161	385	609	685	30.8	38.7	37.1	8.45	6.20	26,400	1,390	27,400	11,200	158	1080	27.5
Strontium	mg/L	0.519	1.28	1.01	1.22	0.174	0.161	0.153	0.167	0.186	0.678	0.16	0.683	0.427	0.341	0.941	0.134
Vanadium	mg/L	0.00246 J	0.00442 J	0.00687	0.0058	0.00483 J	0.00160 J	0.00248 J	NA	0.00830	NA	0.00113 J	<0.0006	<0.003	NA	NA	NA
Zinc	mg/L	0.00278 J	0.0428	0.00256 J	0.00468	0.0638	<0.002	0.0438	0.0466	0.209	1.97	0.451	0.291	0.427	0.0153	0.0258	<0.002
<b>Anions/Water Quality Parameters</b>																	
Bicarbonate Alkalinity	mg/L	176	197	104	148	48.8	44.4	40.9	159	67.3	128	78.4	241	112	210	495	37.4
Bromide	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1.5	<0.06	<1.5	<0.3	<0.03	<0.06	<0.03
Carbonate Alkalinity	mg/L	<5	<3.50	<5	<3.50	<5	<5	<3.50	<5	<3.50	<5	<5	<5	<3.5	<5	<5	<5
Chloride	mg/L	314	905	620	1,160	35.9	37.8	38.3	6.45	5.60	55,900	2,400	48,000	16,500	215	2090	32
Sulfate	mg/L	79.9	492	96.2	391	16.1	16.6	21.7	2.97	13.3	243	14.2	155	57.0	92.1	183	17.2
Total Dissolved Solids (TDS)	mg/L	840	1,570	2,280	2,600	180	120	140	320	70.0	97,400	4,840	67,200	45,200	498	3600	148
pH	SI	7.58 H	7.24 H	8.37 H	7.98 H	7.38 H	7.05 H	7.44 H	NA	7.82 H	NA	7.65 H	7.93 H	7.34 H	NA	NA	NA
<b>Sulfides</b>																	
Hydrogen Sulfide	mg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sulfide	mg/L	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1	<1.7	<1	<1.7	<1.7	<1.7	<1	<1	<1.7
<b>Volatile Organic Compounds</b>																	
Benzene	mg/L	0.74 J	3.7	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.00034 J	0.59 J	0.75 J	<0.0002	0.00080 J	0.003	<0.0002	<0.0002	<0.0002
Ethylbenzene	mg/L	<0.0003	0.44 J	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.00180	2.0	2.3	<0.0003	0.00086 J	0.0034	<0.0003	<0.0003	<0.0003
Toluene	mg/L	1.1	<0.0002	<0.0002	<0.0002	0.00051 J	<0.0002	<0.0002	0.00055 J	1.8	0.73 J	<0.0002	<0.0002	0.001	<0.0002	<0.0002	<0.0002
m,p-Xylene	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0020 J	2.4	3	<0.0005	0.0013 J	0.0061	<0.0005	<0.0005	<0.0005
o-Xylene	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.52 J	2	<0.0003	0.001	0.0045	<0.0003	<0.0003	<0.0003
Xylenes, Total	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.00200	2.9000	5	<0.0003	0.0024	0.011	<0.0003	<0.0003	<0.0003
<b>TPH Fractions</b>																	
Aliphatics >C8-C8	mg/L	0.0758	0.719	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aliphatics >C12-C16	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Aliphatics >C16-C35	mg/L	<0.008	<0.008	<0.008	<0.008	<0.008	0.0405	<0.008	<0.008	0.0217	0.239	<0.008	0.137	0.0824	<0.008	<0.008	<0.008
Aromatics >C8-C10	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0285	<0.01	0.0192	<0.01	<0.01	<0.01	<0.01	<0.01	0.012
Aromatics >C10-C12	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.00551	<0.001	0.00551	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aromatics >C12-C16	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.0225	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Aromatics >C16-C21	mg/L	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.0188	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Aromatics >C21-C35	mg/L	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	0.079	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009

Notes  
J - Estimated Value reported below the d  
H - pH is received at the lab outside of hc  
< - Not Detected at the reporting limit sho  
Boded values deleted in the sample.

Table 3  
**Central Lake Water Column Profile**  
 Sulphur Dome  
 Calcasieu Parish, Louisiana

1/30/2023	LDNR #4 (water depth 2.55 ft)				
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
0.5	6.14	1317	31	17.5	NR
2.55	6.3	1321	-4	17.1	NR

5/22/2023	LDNR #5 (water depth 5.0 ft)				
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
0	6.95	1509	59	30.1	1058
1	6.95	1513	69	30.1	1058
2	6.96	1515	77	30	1057
3	6.94	1513	83	29.7	1059
4	6.96	1513	84	29.6	1057
5	6.77	1522	-64	28.7	1065

6/15/2023	13:55	Water Column Station (water depth 5.2 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.55	1665	113	34.3	1238
3	7.02	1671	137	34.7	1241
5	7.52	1692	39	33.7	1254

6/16/2023	12:58	Water Column Station (water depth 5.2 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.67	1792	205	33.5	1256
3	7.70	1786	174	33.3	1254
5	7.30	1902	-240	33.4	1352

6/23/2023	8:13	Water Column Station (water depth 5.2 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.53	NR	165	27.7	NR
3	7.56	NR	155	29.1	1291
5	7.54	1814	-186	29.8	1282

6/30/2023	13:40	Water Column Station (water depth 5.15 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.60	1883	64	36.1	1322
3	7.50	1878	84	34.8	1325
5	7.50	1876	94	35.0	1320

7/7/2023	8:45	Water Column Station (water depth 5.0 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.60	1910	103	29.3	1355
3	7.61	1951	107	29.6	1389
5	7.59	1916	113	29.7	1364

7/14/2023	13:00	Water Column Station (water depth 5.0 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.85	NR	161	35.2	NR
3	7.65	2032	148	34.2	1449
5	7.59	1962	140	33.1	1529

Table 3  
**Central Lake Water Column Profile**  
 Sulphur Dome  
 Calcasieu Parish, Louisiana

7/21/2023	9:10	Water Column Station (water depth 4.8 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.72	2123	168	31.6	1515
3	7.67	2117	162	31.7	1514
5	7.70	2104	155	31.4	1509

7/28/2023	7:15	Water Column Station (water depth 5.8 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.66	2238	168	29.3	1609
3	7.61	2106	165	29.9	1513
5	7.48	2185	151	29.5	1568

8/4/2023	9:25	Water Column Station (water depth 5.6 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.62	2328	161	32.4	1678
3	7.56	2317	149	32.5	1669
5	7.47	2317	79	32.6	1670

8/11/2023	7:30	Water Column Station (water depth 5.45 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.64	2648	101	29.7	1935
3	7.75	2588	18	30.6	1888
5	7.58	2593	-147	31.1	1885

8/18/2023	7:30	Water Column Station (water depth 5.25 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.71	2871	141	28.9	2116
3	7.58	2813	103	30.1	2067
5	7.54	2747	-48	30.3	2023

8/25/2023	9:00	Water Column Station (water depth 4.1 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.71	3071	149	29.6	2253
3	7.69	3034	121	30.3	2215
5	7.58	3038	-8	30.2	2219

9/1/2023	10:00	Water Column Station (water depth NR)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	8.06	3233	34	31.1	2371
3	8.10	3203	25	29.4	2357
5	7.62	3216	-13	29.6	2366

9/8/2023	7:45	Water Column Station (water depth NR)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	8.06	3373	109	28.9	2486
3	8.16	3337	87	30.1	2458
5	7.87	3341	-32	30.4	2457

Table 3  
**Central Lake Water Column Profile**  
 Sulphur Dome  
 Calcasieu Parish, Louisiana

9/15/2023	7:20	Water Column Station (water depth 3'5")			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	8.04	3554	149	25	2650
3	7.96	3416	144	26.2	2545
5	7.55	3426	-81	26.2	2549

9/22/2023	8:15	Water Column Station (water depth 4'3")			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	8.19	3625	146	28.6	2699
3	8.23	3570	131	28.7	2652
5	7.50	3587	-114	28.5	2660

9/29/2023	7:30	Water Column Station (water depth 4')			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.43	3614	152	26.5	2684
3	7.42	3601	121	27.1	2689
5	7.41	3603	-32	27.3	2685

10/6/2023	8:00	Water Column Station (water depth 4'3")			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.57	3584	103	24.3	2681
3	7.44	3572	96	24.8	2671
5	7.55	3558	10	24.7	2660

10/13/2023	9:42	Water Column Station (water depth 4'3")			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.95	3555	146	22.8	2665
3	7.92	3641	148	23.6	2733
5	7.94	3646	135	23.7	2737

10/20/2023	8:00	Water Column Station (water depth 4'2")			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.88	3775	109	21	2854
3	7.97	3738	116	21.4	2823
5	7.92	3770	119	21.7	2846

10/27/2023	8:42	Water Column Station (water depth 4'2")			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	8.19	4035	80	26.9	3036
3	7.96	3990	26.7	26.7	2995
5	7.92	3946	26.3	26.3	2962

11/3/2023	9:00	Water Column Station (water depth 4')			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.83	4025	208	16.2	3086
3	7.77	4060	161	19.3	3116
5	7.72	4035	186	15.7	3088

11/10/2023	10:17	Water Column Station (water depth 4')			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.7	4150	164	22.1	3160
3	7.63	4179	128	22	3187
5	7.55	4161	2	21.8	3178

Table 3  
**Central Lake Water Column Profile**  
 Sulphur Dome  
 Calcasieu Parish, Louisiana

11/17/2023	9:45	Water Column Station (water depth 4'2")			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.52	4115	192	20.5	3144
3	7.45	4119	160	20.9	3143
5	7.46	4113	84	20.8	3136

11/24/2023	8:01	Water Column Station (water depth 4')			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.75	4238	181	15.6	3758
3	7.76	4220	146	15.4	3239
5	7.70	4209	96	15.3	3240

12/1/2023	8:00	Water Column Station (water depth 4'3")			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.85	4132	-41	17.8	3171
3	7.81	4144	21	17.3	3173
5	7.75	4204	39	17.6	3237

12/8/2023	9:00	Water Column Station (water depth 4'3")			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.66	4275	141	16.7	3288
3	7.72	4175	109	16.7	3203
5	7.61	4276	75	16.9	3294

12/15/2023	9:00	Water Column Station (water depth 4'4")			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.62	4287	-66	14.5	3311
3	7.77	4301	-32	15.1	3315
5	7.68	4300	5	15.5	3310

12/22/2023	8:30	Water Column Station (water depth 4'5")			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.74	4296	65	18.1	3311
3	7.76	4305	32	18	28
5	7.69	4289	77	17.9	3301

Notes:

Readings were recorded with an Ultrameter II, hand-held meter

NR - Not Recorded

Table 4  
**Gas Data Summary**  
 Sulphur Dome  
 Calcasieu Parish, Louisiana

Sample Location		LDNR #1			LDNR #3			LDNR #4			LDNR #5			LDNR #6		
Sample ID	Brine Well 22 BS	CP BS 1			CP BS 2			CP BS 3			BS 06					
Sample Date	1/25/23	5/18/23	9/20/23*	1/30/23	5/22/23*	9/18/23*	1/30/23	5/22/23*	9/20/23*	1/30/23	5/17/23	9/20/23*	2/28/23	5/18/23	9/20/23	
Sampler	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	
Component	Units	Surface Water (Bubble Site)														
Carbon Monoxide	mol%	ND	0.18	ND	ND	ND	ND	ND	ND	ND	0.099	ND	ND	0.22	0.093	
Helium	mol%	NA	NA	<b>0.0053</b>	NA	ND	ND	NA	ND	ND	NA	NA	ND	NA	NA	
Hydrogen	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Argon	mol%	<b>1.35</b>	<b>1.31</b>	<b>0.0612</b>	<b>1.04</b>	<b>0.0448</b>	<b>0.917</b>	<b>0.905</b>	<b>0.0360</b>	<b>0.550</b>	<b>1.54</b>	<b>1.12</b>	<b>0.540</b>	<b>1.68</b>	<b>1.63</b>	<b>1.06</b>
Oxygen	mol%	<b>0.47</b>	<b>17.47</b>	<b>0.96</b>	<b>8.91</b>	<b>0.086</b>	<b>20.38</b>	<b>15.5</b>	<b>0.16</b>	<b>8.93</b>	<b>21.68</b>	<b>15.89</b>	<b>11.11</b>	<b>21.86</b>	<b>21.22</b>	<b>23.75</b>
Nitrogen	mol%	<b>61.78</b>	<b>64.5</b>	<b>4.41</b>	<b>45.65</b>	<b>2.11</b>	<b>77.1</b>	<b>65.33</b>	<b>1.87</b>	<b>41.87</b>	<b>69.85</b>	<b>73.83</b>	<b>40.07</b>	<b>72.96</b>	<b>72.30</b>	<b>73.08</b>
Carbon Dioxide	mol%	<b>7.47</b>	<b>6.37</b>	<b>2.57</b>	<b>3.58</b>	<b>2.14</b>	<b>0.089</b>	<b>1.29</b>	<b>1.56</b>	<b>1.55</b>	<b>2.47</b>	<b>2.79</b>	<b>0.52</b>	<b>3.22</b>	<b>4.39</b>	<b>0.15</b>
Methane	mol%	<b>28.45</b>	<b>10.00</b>	<b>89.73</b>	<b>40.41</b>	<b>94.46</b>	<b>1.49</b>	<b>16.69</b>	<b>94.48</b>	<b>46.17</b>	<b>4.39</b>	<b>6.20</b>	<b>46.82</b>	<b>0.278</b>	<b>0.234</b>	<b>1.84</b>
Ethane	mol%	<b>0.287</b>	<b>0.110</b>	<b>1.50</b>	<b>0.261</b>	<b>0.673</b>	<b>0.0108</b>	<b>0.209</b>	<b>1.30</b>	<b>0.64</b>	<b>0.0472</b>	<b>0.0488</b>	<b>0.579</b>	<b>0.0042</b>	<b>0.0014</b>	<b>0.0112</b>
Ethylene	mol%	ND	ND	<b>0.0006</b>	<b>0.0097</b>	<b>0.0286</b>	<b>0.003</b>	<b>0.0067</b>	<b>0.0540</b>	<b>0.0223</b>	<b>0.0022</b>	<b>0.0042</b>	<b>0.0874</b>	ND	ND	<b>0.0007</b>
Propane	mol%	<b>0.0926</b>	<b>0.0412</b>	<b>0.414</b>	<b>0.0702</b>	<b>0.198</b>	<b>0.0036</b>	<b>0.0445</b>	<b>0.294</b>	<b>0.144</b>	<b>0.0128</b>	<b>0.0120</b>	<b>0.1590</b>	ND	<b>0.0014</b>	<b>0.0041</b>
Propylene	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iso-butane	mol%	<b>0.0216</b>	<b>0.0070</b>	<b>0.0977</b>	<b>0.0259</b>	<b>0.0751</b>	<b>0.0013</b>	<b>0.0115</b>	<b>0.0819</b>	<b>0.0408</b>	<b>0.0033</b>	<b>0.0030</b>	<b>0.0406</b>	ND	ND	<b>0.0014</b>
N-butane	mol%	<b>0.0216</b>	<b>0.0070</b>	<b>0.106</b>	<b>0.0189</b>	<b>0.0647</b>	<b>0.0016</b>	<b>0.0091</b>	<b>0.0757</b>	<b>0.0372</b>	<b>0.0028</b>	<b>0.0021</b>	<b>0.0387</b>	ND	ND	<b>0.001</b>
Iso-pentane	mol%	<b>0.0083</b>	<b>0.0017</b>	<b>0.0410</b>	<b>0.0083</b>	<b>0.0356</b>	<b>0.0009</b>	<b>0.0032</b>	<b>0.0318</b>	<b>0.0158</b>	<b>0.0006</b>	<b>0.0006</b>	<b>0.0133</b>	ND	ND	<b>0.0003</b>
N-pentane	mol%	<b>0.0055</b>	<b>0.0012</b>	<b>0.0308</b>	<b>0.0051</b>	<b>0.0262</b>	<b>0.0008</b>	<b>0.0019</b>	<b>0.0220</b>	<b>0.0111</b>	ND	ND	<b>0.0092</b>	ND	ND	ND
Hexanes +	mol%	<b>0.0449</b>	<b>0.0064</b>	<b>0.0685</b>	<b>0.0083</b>	<b>0.0548</b>	<b>0.0020</b>	<b>0.0029</b>	<b>0.0341</b>	<b>0.0173</b>	<b>0.0039</b>	<b>0.0009</b>	<b>0.0148</b>	<b>0.0012</b>	<b>0.0028</b>	<b>0.0018</b>
<b>Stable Isotopes</b>																
$\delta^{13}\text{C}$ (CH <sub>4</sub> )	‰	<b>-33.03</b>	<b>-24.86</b>	<b>-39.25</b>	<b>-34.2</b>	<b>-34.66</b>	<b>-31.24</b>	<b>-38.37</b>	<b>-38.5</b>	<b>-37.03</b>	<b>-35.45</b>	<b>-39.21</b>	<b>-37.16</b>	NA	NA	<b>-34.8</b>
$\delta\text{D}$ (CH <sub>4</sub> )	‰	<b>-129.6</b>	<b>-81.1</b>	<b>-158.6</b>	<b>-147.2</b>	<b>-141.0</b>	<b>-138.7</b>	<b>-160.5</b>	<b>-151.3</b>	<b>-145.0</b>	<b>-143</b>	<b>-159.8</b>	<b>-147.9</b>	NA	NA	<b>-144</b>
$\delta^{13}\text{C}$ (CO <sub>2</sub> )	‰	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:  
**Bolded** values detected in the sample.  
 ND - Not Detected  
 NA - Not Analyzed (insufficient volume)  
 \* - Gas sample (not dissolved gas)

Table 4  
**Gas Data Summary**  
 Sulphur Dome  
 Calcasieu Parish, Louisiana

Sample Location		LDNR #7			LDNR #8			LDNR #9		LDNR #10			LDNR #12		
Sample ID	Sample Date	BS 07			BS 08			Brine Pond 4		110159-BS			BS 12		
Sample Date	Sampler	2/28/23	5/17/23	9/20/23	2/28/23	5/18/23	9/20/23	2/10/23	5/18/23	2/10/23	5/22/23*	9/20/23*	2/28/23	5/18/23	9/20/23
Component	Units	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM
Surface Water (Bubble Site)															
Carbon Monoxide	mol%	ND	0.31	0.15	ND	0.33	0.16	0.034	0.26	ND	ND	ND	ND	0.23	0.13
Helium	mol%	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA
Hydrogen	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Argon	mol%	<b>1.66</b>	<b>1.64</b>	<b>1.2</b>	<b>1.31</b>	<b>1.71</b>	<b>1.19</b>	<b>1.14</b>	<b>1.50</b>	<b>0.837</b>	<b>0.970</b>	<b>0.910</b>	<b>1.62</b>	<b>1.68</b>	<b>1.12</b>
Oxygen	mol%	<b>22.94</b>	<b>17.64</b>	<b>24.65</b>	<b>16.43</b>	<b>12.99</b>	<b>27.26</b>	<b>22.32</b>	<b>30.16</b>	<b>14.68</b>	<b>21.72</b>	<b>16.81</b>	<b>19.99</b>	<b>20.99</b>	<b>24.67</b>
Nitrogen	mol%	<b>71.73</b>	<b>73.45</b>	<b>73.16</b>	<b>57.26</b>	<b>75.89</b>	<b>71.03</b>	<b>75.05</b>	<b>63.88</b>	<b>59.75</b>	<b>77.00</b>	<b>75.02</b>	<b>70.00</b>	<b>72.41</b>	<b>73.77</b>
Carbon Dioxide	mol%	<b>3.27</b>	<b>6.46</b>	<b>0.4</b>	<b>2.88</b>	<b>7.63</b>	<b>0.28</b>	<b>0.61</b>	<b>2.70</b>	<b>1.04</b>	<b>0.062</b>	<b>1.69</b>	<b>3.51</b>	<b>4.56</b>	<b>0.24</b>
Methane	mol%	<b>0.398</b>	<b>0.493</b>	<b>0.427</b>	<b>21.89</b>	<b>1.44</b>	<b>0.0769</b>	<b>0.845</b>	<b>1.49</b>	<b>23.55</b>	<b>0.247</b>	<b>5.56</b>	<b>4.72</b>	<b>0.122</b>	<b>0.065</b>
Ethane	mol%	<b>0.0050</b>	<b>0.0057</b>	<b>0.0100</b>	<b>0.146</b>	<b>0.0040</b>	<b>0.0020</b>	<b>0.0022</b>	<b>0.0032</b>	<b>0.12</b>	<b>0.0004</b>	<b>0.0030</b>	<b>0.138</b>	<b>0.0014</b>	<b>0.0015</b>
Ethylene	mol%	ND	ND	ND	<b>0.0044</b>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Propane	mol%	<b>0.0006</b>	ND	<b>0.0013</b>	<b>0.0482</b>	<b>0.0008</b>	<b>0.0007</b>	<b>0.0004</b>	ND	<b>0.0084</b>	ND	<b>0.0004</b>	<b>0.0108</b>	<b>0.0007</b>	<b>0.0004</b>
Propylene	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iso-butane	mol%	ND	ND	ND	<b>0.0158</b>	ND	ND	ND	ND	<b>0.0112</b>	ND	<b>0.0009</b>	<b>0.0025</b>	ND	ND
N-butane	mol%	ND	ND	ND	<b>0.0108</b>	ND	ND	ND	ND	ND	ND	<b>0.0002</b>	<b>0.0019</b>	ND	ND
Iso-pentane	mol%	ND	ND	ND	<b>0.0034</b>	ND	ND	ND	ND	<b>0.0019</b>	ND	<b>0.0002</b>	ND	ND	ND
N-pentane	mol%	ND	ND	ND	<b>0.0015</b>	ND	ND	ND	ND	ND	ND	<b>0.0001</b>	ND	ND	ND
Hexanes +	mol%	<b>0.0013</b>	<b>0.0041</b>	<b>0.0024</b>	<b>0.0030</b>	<b>0.0040</b>	<b>0.0031</b>	<b>0.0007</b>	<b>0.0040</b>	<b>0.0012</b>	<b>0.0001</b>	<b>0.0006</b>	<b>0.0038</b>	<b>0.0058</b>	<b>0.0023</b>
<b>Stable Isotopes</b>															
$\delta^{13}\text{C}$ (CH <sub>4</sub> )	‰	<b>-36.7</b>	<b>-48.9</b>	<b>-39.5</b>	<b>-34.96</b>	<b>-60.3</b>	NA	<b>-33.1</b>	<b>-38.9</b>	<b>-35.63</b>	<b>-25.78</b>	<b>-22.20</b>	<b>-44.36</b>	NA	NA
$\delta\text{D}$ (CH <sub>4</sub> )	‰	NA	NA	NA	<b>-143.1</b>	NA	NA	<b>-81</b>	NA	<b>-151.4</b>	<b>-107</b>	<b>-103.2</b>	<b>-181</b>	NA	NA
$\delta^{13}\text{C}$ (CO <sub>2</sub> )	‰	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

**Bolded** values deteted in the sample.

ND - Not Detected

NA - Not Analyzed (insufficient volume)

\* - Gas sample (not dissolved gas)

Table 4  
**Gas Data Summary**  
 Sulphur Dome  
 Calcasieu Parish, Louisiana

Sample Location		LDNR #17			LDNR #18			LDNR #19		LDNR #21			LDNR #22			
		BS 17			BS 18			BS 19		No. 21			No. 22			
Sample ID	Sample Date	2/28/23	5/17/23	9/20/23	2/28/23	5/17/23	9/20/23	2/28/23	5/18/23	3/30/23	5/17/23	9/20/23	3/30/23	5/17/23	9/20/23	
Sampler	Sampler	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	
Component	Units	Surface Water (Bubble Site)														
Carbon Monoxide	mol%	ND	0.17	<b>0.3</b>	ND	0.066	0.27	ND	0.26	0.11	0.25	0.12	0.098	0.11	0.3	
Helium	mol%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Hydrogen	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Argon	mol%	<b>1.69</b>	<b>1.57</b>	<b>1.13</b>	<b>1.21</b>	<b>1.09</b>	<b>1.28</b>	<b>0.976</b>	<b>1.50</b>	<b>1.29</b>	<b>1.61</b>	<b>1.09</b>	<b>1.43</b>	<b>1.25</b>	<b>1.33</b>	
Oxygen	mol%	<b>16.22</b>	<b>17.08</b>	<b>31.25</b>	<b>14.38</b>	<b>16.45</b>	<b>34.44</b>	<b>29.18</b>	<b>28.03</b>	<b>20.65</b>	<b>18.44</b>	<b>26.85</b>	<b>20.90</b>	<b>16.79</b>	<b>32.90</b>	
Nitrogen	mol%	<b>74.92</b>	<b>66.25</b>	<b>50.78</b>	<b>52.67</b>	<b>79.94</b>	<b>61.19</b>	<b>43.27</b>	<b>63.87</b>	<b>75.31</b>	<b>73.33</b>	<b>69.78</b>	<b>71.96</b>	<b>79.02</b>	<b>62.91</b>	
Carbon Dioxide	mol%	<b>5.42</b>	<b>7.42</b>	<b>0.7</b>	<b>3.08</b>	<b>1.67</b>	<b>0.3</b>	<b>2.83</b>	<b>2.92</b>	<b>1.77</b>	<b>5.64</b>	<b>0.16</b>	<b>2.40</b>	<b>2.54</b>	<b>0.47</b>	
Methane	mol%	<b>1.73</b>	<b>7.42</b>	<b>15.57</b>	<b>28.32</b>	<b>0.784</b>	<b>2.49</b>	<b>23.62</b>	<b>3.40</b>	<b>0.860</b>	<b>0.721</b>	<b>1.970</b>	<b>3.16</b>	<b>0.288</b>	<b>2.06</b>	
Ethane	mol%	<b>0.0148</b>	<b>0.0714</b>	<b>0.225</b>	<b>0.240</b>	<b>0.0028</b>	<b>0.0208</b>	<b>0.106</b>	<b>0.0130</b>	<b>0.0080</b>	<b>0.0015</b>	<b>0.0194</b>	<b>0.410</b>	<b>0.0010</b>	<b>0.0253</b>	
Ethylene	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<b>0.0005</b>	ND	ND	
Propane	mol%	<b>0.0021</b>	<b>0.0090</b>	<b>0.0279</b>	<b>0.0616</b>	<b>0.0007</b>	<b>0.0052</b>	<b>0.093</b>	<b>0.0007</b>	<b>0.0011</b>	<b>0.0008</b>	<b>0.0032</b>	<b>0.0064</b>	<b>0.0003</b>	<b>0.0045</b>	
Propylene	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Iso-butane	mol%	ND	<b>0.0025</b>	<b>0.0071</b>	<b>0.176</b>	<b>0.0002</b>	<b>0.0015</b>	<b>0.0034</b>	ND	<b>0.0004</b>	ND	<b>0.001</b>	<b>0.0015</b>	ND	<b>0.0012</b>	
N-butane	mol%	ND	<b>0.0016</b>	<b>0.0049</b>	<b>0.132</b>	ND	<b>0.0012</b>	ND	ND	ND	ND	<b>0.0005</b>	<b>0.0010</b>	ND	<b>0.0010</b>	
Iso-pentane	mol%	ND	ND	<b>0.0015</b>	<b>0.0044</b>	ND	ND	<b>0.0004</b>	ND	ND	ND	ND	ND	ND	ND	
N-pentane	mol%	ND	ND	<b>0.0009</b>	<b>0.0024</b>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Hexanes +	mol%	<b>0.0028</b>	<b>0.0025</b>	<b>0.0052</b>	<b>0.0044</b>	<b>0.0006</b>	<b>0.0045</b>	<b>0.0021</b>	<b>0.0036</b>	<b>0.0018</b>	<b>0.0031</b>	<b>0.0017</b>	<b>0.0020</b>	<b>0.0010</b>	<b>0.0073</b>	
<b>Stable Isotopes</b>																
$\delta^{13}\text{C}$ (CH <sub>4</sub> )	‰	<b>-44.2</b>	<b>-39.07</b>	<b>-40.39</b>	<b>-36.62</b>	<b>-46.8</b>	<b>-37.5</b>	<b>-32.77</b>	<b>-36.1</b>	<b>-36.2</b>	<b>-48.0</b>	<b>-38.0</b>	<b>-38.40</b>	<b>-44.40</b>	<b>-37.00</b>	
$\delta\text{D}$ (CH <sub>4</sub> )	‰	<b>-175</b>	<b>-179</b>	<b>-161.9</b>	<b>-154.9</b>	<b>-200</b>	<b>-145</b>	<b>-109.4</b>	<b>-139</b>	<b>-122</b>	NA	<b>150</b>	<b>-156</b>	NA	NA	
$\delta^{13}\text{C}$ (CO <sub>2</sub> )	‰	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

Notes:

- Bolded** values deteted in the sample.
- ND - Not Detected
- NA - Not Analyzed (insufficient volume)
- \* - Gas sample (not dissolved gas)

Table 4  
**Gas Data Summary**  
 Sulphur Dome  
 Calcasieu Parish, Louisiana

Sample Location		LDNR #23			LDNR #24		LDNR #25	LDNR #26		WPB PGG No.7A			WPB PPB No.7B			
Sample ID		No. 23			BS-24		BS-25	BS-26		Brine Well 7A BS			Brine Well 7B-BS			
Sample Date		3/30/23	5/18/23	9/20/23	5/22/23*	9/20/23*	9/20/23	7/17/23	9/18/23	1/25/23	5/17/23*	9/20/23*	2/16/23	5/18/23	9/18/23	
Sampler		ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	
Component	Units	Surface Water (Bubble Site)														
Carbon Monoxide	mol%	0.040	0.25	0.24	ND	ND	<b>0.2</b>	ND	0.063	ND	ND	ND	ND	ND	ND	
Helium	mol%	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	NA	NA	NA	
Hydrogen	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Argon	mol%	<b>1.09</b>	<b>1.68</b>	<b>1.4</b>	<b>0.0271</b>	<b>0.210</b>	<b>1.3</b>	<b>1.46</b>	<b>1.29</b>	<b>0.744</b>	<b>0.823</b>	<b>0.754</b>	<b>0.955</b>	<b>1.58</b>	<b>0.969</b>	
Oxygen	mol%	<b>21.18</b>	<b>14.37</b>	<b>30.67</b>	<b>0.13</b>	<b>4.05</b>	<b>28.32</b>	<b>18.56</b>	<b>17.19</b>	<b>16.39</b>	<b>18.25</b>	<b>15.34</b>	<b>19.64</b>	<b>25.16</b>	<b>19.27</b>	
Nitrogen	mol%	<b>76.89</b>	<b>74.50</b>	<b>65.61</b>	<b>1.37</b>	<b>16.04</b>	<b>69.58</b>	<b>66.42</b>	<b>75.71</b>	<b>41.21</b>	<b>66.37</b>	<b>61.16</b>	<b>76.59</b>	<b>68.50</b>	<b>79.45</b>	
Carbon Dioxide	mol%	<b>0.69</b>	<b>6.71</b>	<b>0.45</b>	<b>2.26</b>	<b>2.35</b>	<b>0.4</b>	<b>7.87</b>	<b>3.62</b>	<b>0.29</b>	<b>0.07</b>	<b>0.39</b>	<b>0.51</b>	<b>1.69</b>	<b>0.3</b>	
Methane	mol%	<b>0.105</b>	<b>2.47</b>	<b>1.61</b>	<b>94.64</b>	<b>76.08</b>	<b>0.195</b>	<b>5.68</b>	<b>2.12</b>	<b>40.83</b>	<b>14.3</b>	<b>22.05</b>	<b>2.26</b>	<b>3.00</b>	<b>0.0036</b>	
Ethane	mol%	<b>0.0013</b>	<b>0.0124</b>	<b>0.0131</b>	<b>0.884</b>	<b>0.729</b>	<b>0.0027</b>	<b>0.0076</b>	<b>0.0116</b>	<b>0.397</b>	<b>0.132</b>	<b>0.216</b>	<b>0.0333</b>	<b>0.0427</b>	<b>0.0001</b>	
Ethylene	mol%	ND	ND	ND	<b>0.150</b>	<b>0.110</b>	ND	ND	ND	<b>0.0013</b>	<b>0.0001</b>	ND	<b>0.0011</b>	ND	ND	
Propane	mol%	<b>0.0002</b>	<b>0.0044</b>	<b>0.0036</b>	<b>0.270</b>	<b>0.214</b>	ND	ND	<b>0.0009</b>	<b>0.099</b>	<b>0.0372</b>	<b>0.0607</b>	<b>0.0085</b>	<b>0.0192</b>	<b>0.0013</b>	
Propylene	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Iso-butane	mol%	ND	<b>0.0015</b>	<b>0.0011</b>	<b>0.0828</b>	<b>0.0663</b>	ND	ND	<b>0.0006</b>	<b>0.0286</b>	<b>0.013</b>	<b>0.0207</b>	<b>0.0011</b>	<b>0.0043</b>	<b>0.0007</b>	
N-butane	mol%	ND	<b>0.0007</b>	<b>0.0008</b>	<b>0.0784</b>	<b>0.0623</b>	ND	ND	ND	<b>0.0106</b>	<b>0.005</b>	<b>0.0080</b>	<b>0.0024</b>	<b>0.0043</b>	<b>0.0012</b>	
Iso-pentane	mol%	ND	ND	ND	<b>0.0347</b>	<b>0.0282</b>	ND	ND	ND	<b>0.013</b>	<b>0.0011</b>	<b>0.0018</b>	<b>0.0005</b>	ND	<b>0.0003</b>	
N-pentane	mol%	ND	ND	ND	<b>0.0259</b>	<b>0.0214</b>	ND	ND	ND	ND	<b>0.0003</b>	<b>0.0005</b>	<b>0.0004</b>	ND	<b>0.0002</b>	
Hexanes +	mol%	<b>0.0007</b>	<b>0.0037</b>	<b>0.0038</b>	<b>0.0460</b>	<b>0.0378</b>	<b>0.0038</b>	<b>0.0025</b>	<b>0.0027</b>	<b>0.003</b>	<b>0.0022</b>	<b>0.0018</b>	<b>0.001</b>	<b>0.0028</b>	<b>0.0009</b>	
<b>Stable Isotopes</b>																
$\delta^{13}\text{C}$ (CH <sub>4</sub> )	‰	<b>-34.0</b>	<b>-33.0</b>	<b>-37.6</b>	<b>-35.9</b>	<b>-35.52</b>	NA	<b>-48.74</b>	<b>-40.8</b>	<b>-35.6</b>	<b>-34.94</b>	<b>-33.32</b>	<b>-46.02</b>	<b>-38.2</b>	NA	
$\delta\text{D}$ (CH <sub>4</sub> )	‰	NA	<b>-99</b>	NA	<b>-146.8</b>	<b>-145.7</b>	NA	<b>-242</b>	<b>-157</b>	<b>-150.3</b>	<b>-144.2</b>	<b>-141.4</b>	<b>-183.6</b>	<b>-117</b>	NA	
$\delta^{13}\text{C}$ (CO <sub>2</sub> )	‰	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

Notes:

**Bolded** values deteted in the sample.

ND - Not Detected

NA - Not Analyzed (insufficient volume)

\* - Gas sample (not dissolved gas)

Table 4  
**Gas Data Summary**  
 Sulphur Dome  
 Calcasieu Parish, Louisiana

Sample Location		Sulphur Dome	LDNR #20	WW #11								WW #13							
Sample ID	Central Pond	No. 20	019-580																
Sample Date	ERM	ERM	1/26/23	3/30/23	4/27/23	5/22/23	6/16/23	8/22/23	9/20/23	11/28/23	1/26/23	3/30/23	4/27/23	5/22/23	6/16/23	8/22/23	9/20/23	11/28/23	
Sampler	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	
Component	Units	Surface Water		Water Well															
Carbon Monoxide	mol%	0.26	0.023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	
Helium	mol%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Hydrogen	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Argon	mol%	<b>1.98</b>	<b>1.01</b>	<b>1.64</b>	<b>1.17</b>	<b>1.66</b>	<b>1.76</b>	<b>1.48</b>	<b>1.75</b>	<b>1.66</b>	<b>1.48</b>	<b>1.76</b>	<b>1.27</b>	<b>1.61</b>	<b>1.27</b>	<b>1.56</b>	<b>1.58</b>	<b>1.72</b>	<b>1.48</b>
Oxygen	mol%	<b>0.41</b>	<b>22.40</b>	<b>5.59</b>	<b>14.38</b>	<b>9.66</b>	<b>11.60</b>	<b>17.51</b>	<b>8.22</b>	<b>6.23</b>	<b>7.14</b>	<b>5.03</b>	<b>13.10</b>	<b>8.07</b>	<b>4.94</b>	<b>16.60</b>	<b>10.74</b>	<b>3.50</b>	<b>8.07</b>
Nitrogen	mol%	<b>84.79</b>	<b>76.38</b>	<b>79.08</b>	<b>80.66</b>	<b>76.17</b>	<b>72.37</b>	<b>73.84</b>	<b>75.69</b>	<b>80.38</b>	<b>84.09</b>	<b>82.36</b>	<b>80.92</b>	<b>80.13</b>	<b>88.21</b>	<b>73.36</b>	<b>74.73</b>	<b>79.67</b>	<b>83.08</b>
Carbon Dioxide	mol%	<b>12.25</b>	<b>0.16</b>	<b>13.23</b>	<b>3.75</b>	<b>11.99</b>	<b>14.23</b>	<b>7.13</b>	<b>13.80</b>	<b>11.3</b>	<b>7.24</b>	<b>10.83</b>	<b>4.66</b>	<b>9.64</b>	<b>5.26</b>	<b>8.46</b>	<b>12.76</b>	<b>13.9</b>	<b>7.32</b>
Methane	mol%	<b>0.302</b>	<b>0.0245</b>	<b>0.456</b>	<b>0.0421</b>	<b>0.517</b>	<b>0.0348</b>	<b>0.0321</b>	<b>0.532</b>	<b>0.433</b>	<b>0.0336</b>	<b>0.0186</b>	<b>0.0516</b>	<b>0.547</b>	<b>0.313</b>	<b>0.0154</b>	<b>0.189</b>	<b>1.21</b>	<b>0.0474</b>
Ethane	mol%	<b>0.0015</b>	ND	ND	ND	<b>0.0007</b>	ND	<b>0.0005</b>	ND	ND	ND	ND	ND	<b>0.0022</b>	<b>0.0012</b>	ND	ND	<b>0.0029</b>	ND
Ethylene	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Propane	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Propylene	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iso-butane	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-butane	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iso-pentane	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-pentane	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexanes +	mol%	<b>0.0037</b>	<b>0.005</b>	<b>0.0042</b>	<b>0.0008</b>	<b>0.0039</b>	<b>0.0030</b>	<b>0.0041</b>	<b>0.0031</b>	<b>0.0031</b>	<b>0.0127</b>	<b>0.0018</b>	<b>0.0007</b>	<b>0.0027</b>	<b>0.0012</b>	<b>0.0023</b>	<b>0.0040</b>	<b>0.0034</b>	<b>0.0021</b>
<b>Stable Isotopes</b>																			
$\delta^{13}\text{C}$ (CH <sub>4</sub> )	‰	NA	NA	<b>-56.4</b>	NA	<b>-59.6</b>	NA	NA	<b>-19.21</b>	<b>-56.2</b>	NA	NA	NA	<b>-62.3</b>	NA	NA	<b>-20.51</b>	<b>-57.9</b>	NA
$\delta\text{D}$ (CH <sub>4</sub> )	‰	NA	NA	<b>-250</b>	NA	<b>-250</b>	NA	NA	NA	<b>-250</b>	NA	NA	NA	<b>-250</b>	NA	NA	NA	<b>-250</b>	NA
$\delta^{13}\text{C}$ (CO <sub>2</sub> )	‰	NA	NA	NA	NA	NA	NA	NA	<b>-56.6</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:  
**Bolded** values deteted in the sample.  
 ND - Not Detected  
 NA - Not Analyzed (insufficient volume)  
 \* - Gas sample (not dissolved gas)

Table 4  
**Gas Data Summary**  
 Sulphur Dome  
 Calcasieu Parish, Louisiana

Sample Location		WW #12							WW #19							
Sample ID		019-995							019-1055							
Sample Date		1/26/23	3/30/23	4/27/23	5/22/23	6/16/23	8/22/23	11/28/23	1/26/23	3/30/23	4/27/23	5/18/23	6/16/23	8/22/23	9/20/23	11/28/23
Sampler		ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	
Component	Units	Water Well														
Carbon Monoxide	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Helium	mol%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hydrogen	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Argon	mol%	<b>1.75</b>	<b>1.29</b>	<b>1.61</b>	<b>1.77</b>	<b>1.60</b>	<b>1.55</b>	<b>1.62</b>	<b>1.39</b>	<b>1.23</b>	<b>1.68</b>	<b>1.64</b>	<b>1.55</b>	<b>1.55</b>	<b>1.66</b>	<b>1.50</b>
Oxygen	mol%	<b>6.3</b>	<b>11.66</b>	<b>11.53</b>	<b>10.41</b>	<b>14.54</b>	<b>11.52</b>	<b>6.19</b>	<b>9.78</b>	<b>13.74</b>	<b>9.15</b>	<b>11.70</b>	<b>15.55</b>	<b>8.81</b>	<b>4.65</b>	<b>8.45</b>
Nitrogen	mol%	<b>80.84</b>	<b>81.99</b>	<b>77.35</b>	<b>76.58</b>	<b>75.78</b>	<b>76.96</b>	<b>82.94</b>	<b>82</b>	<b>80.18</b>	<b>78.32</b>	<b>76.17</b>	<b>75.03</b>	<b>79.23</b>	<b>77.74</b>	<b>82.32</b>
Carbon Dioxide	mol%	<b>10.81</b>	<b>4.83</b>	<b>9.19</b>	<b>10.71</b>	<b>8.00</b>	<b>9.95</b>	<b>9.23</b>	<b>6.53</b>	<b>4.67</b>	<b>10.43</b>	<b>10.09</b>	<b>7.82</b>	<b>10.04</b>	<b>15.52</b>	<b>7.64</b>
Methane	mol%	<b>0.294</b>	<b>0.231</b>	<b>0.313</b>	<b>0.532</b>	<b>0.0701</b>	<b>0.0162</b>	<b>0.0129</b>	<b>0.3</b>	<b>0.180</b>	<b>0.411</b>	<b>0.396</b>	<b>0.049</b>	<b>0.369</b>	<b>0.423</b>	<b>0.0854</b>
Ethane	mol%	ND	<b>0.0005</b>	ND	ND	<b>0.0016</b>	ND	ND	<b>0.0013</b>	<b>0.0007</b>	<b>0.0017</b>	<b>0.0021</b>	<b>0.0005</b>	<b>0.0016</b>	<b>0.0021</b>	ND
Ethylene	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Propane	mol%	ND	ND	ND	ND	<b>0.0005</b>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Propylene	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iso-butane	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-butane	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iso-pentane	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-pentane	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexanes +	mol%	<b>0.0019</b>	<b>0.0018</b>	<b>0.0034</b>	<b>0.0020</b>	<b>0.0032</b>	<b>0.0031</b>	<b>0.0047</b>	<b>0.002</b>	<b>0.0015</b>	<b>0.0034</b>	<b>0.0021</b>	<b>0.0021</b>	<b>0.0027</b>	<b>0.0036</b>	<b>0.004</b>
<b>Stable Isotopes</b>																
δ <sup>13</sup> C (CH <sub>4</sub> )	‰	NA	<b>-56.6</b>	<b>-68.7</b>	<b>-78.7</b>	NA	<b>-20.47</b>	NA	<b>-53.9</b>	<b>-53.5</b>	<b>-52.7</b>	<b>-21.3</b>	NA	<b>-20.1</b>	<b>-52.8</b>	NA
δD (CH <sub>4</sub> )	‰	NA	<b>-250</b>	<b>-250</b>	<b>-250</b>	NA	NA	NA	<b>-250</b>	<b>-250</b>	<b>-250</b>	<b>-250</b>	NA	NA	<b>-250</b>	NA
δ <sup>13</sup> C (CO <sub>2</sub> )	‰	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<b>-53.8</b>	NA	NA

Notes:

- Bolded** values detected in the sample.
- ND - Not Detected
- NA - Not Analyzed (insufficient volume)
- \* - Gas sample (not dissolved gas)

Table 4  
**Gas Data Summary**  
 Sulphur Dome  
 Calcasieu Parish, Louisiana

Component	Sample Location Sample ID Sample Date Sampler Units	WW #40				Cottages Well						
		019-1603				019-17636Z						
		3/30/23	5/18/23	6/16/23	9/19/23	4/27/23	5/18/23	6/16/23	7/17/23	8/22/23	9/20/23	11/28/23
		ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM
		Water Well										
Carbon Monoxide	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.071	ND
Helium	mol%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hydrogen	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Argon	mol%	<b>1.26</b>	<b>1.57</b>	<b>1.56</b>	<b>1.12</b>	<b>1.43</b>	<b>1.58</b>	<b>1.33</b>	<b>1.50</b>	<b>1.34</b>	<b>1.35</b>	<b>1.68</b>
Oxygen	mol%	<b>11.67</b>	<b>10.06</b>	<b>13.05</b>	<b>15.46</b>	<b>20.30</b>	<b>17.31</b>	<b>18.77</b>	<b>16.60</b>	<b>13.82</b>	<b>10.78</b>	<b>4.95</b>
Nitrogen	mol%	<b>82.50</b>	<b>73.32</b>	<b>82.13</b>	<b>78.53</b>	<b>70.51</b>	<b>70.87</b>	<b>68.11</b>	<b>70.87</b>	<b>75.96</b>	<b>77.25</b>	<b>79.57</b>
Carbon Dioxide	mol%	<b>3.77</b>	<b>4.67</b>	<b>3.25</b>	<b>4.25</b>	<b>7.28</b>	<b>7.44</b>	<b>9.81</b>	<b>9.69</b>	<b>7.56</b>	<b>9.41</b>	<b>12.07</b>
Methane	mol%	<b>0.802</b>	<b>10.37</b>	<b>0.0095</b>	<b>0.641</b>	<b>0.476</b>	<b>2.80</b>	<b>1.98</b>	<b>1.34</b>	<b>1.32</b>	<b>1.14</b>	<b>1.73</b>
Ethane	mol%	<b>0.0009</b>	<b>0.0075</b>	ND	<b>0.0014</b>	ND	ND	ND	ND	ND	<b>0.0017</b>	ND
Ethylene	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Propane	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	<b>0.0009</b>	ND
Propylene	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iso-butane	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-butane	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iso-pentane	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-pentane	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexanes +	mol%	<b>0.0013</b>	<b>0.0035</b>	<b>0.0010</b>	<b>0.0012</b>	<b>0.0015</b>	<b>0.0014</b>	<b>0.0030</b>	<b>0.0019</b>	<b>0.0030</b>	<b>0.0026</b>	<b>0.0039</b>
<b>Stable Isotopes</b>												
$\delta^{13}\text{C}$ (CH <sub>4</sub> )	‰	<b>-89.5</b>	<b>-57.53</b>	NA	<b>-60.3</b>	<b>-76.1</b>	<b>-94.4</b>	<b>-93.2</b>	<b>-78.3</b>	<b>-22.25</b>	<b>-80.2</b>	<b>-79.1</b>
$\delta\text{D}$ (CH <sub>4</sub> )	‰	<b>-282</b>	<b>-110.9</b>	NA	<b>-125</b>	<b>-250</b>	<b>-278</b>	<b>-265</b>	NA	<b>-164</b>	<b>-250</b>	<b>-159</b>
$\delta^{13}\text{C}$ (CO <sub>2</sub> )	‰	NA	NA	NA	NA	NA	NA	NA	NA	<b>-80.4</b>	NA	NA

Notes:

**Bolded** values deteted in the sample.

ND - Not Detected

NA - Not Analyzed (insufficient volume)

\* - Gas sample (not dissolved gas)

Table 4  
**Gas Data Summary**  
 Sulphur Dome  
 Calcasieu Parish, Louisiana

Sample Location		SN 57788	SN 32069		SN 37320		SN 973224	SN 973365	SN 974245	SN 209459	SN 189416		SN 246792
Sample ID	Sample Date	6X Brine	Brine Well 2		Cavern 4	Starks Tie-In	Brine Well 18	Brine Well 21	Brine Well 22	Fee 1012	Fee 969		Fee 1026
Sampler		1/25/23	5/22/23*	9/18/23*	9/20/23*	10/30/23	10/30/23	10/30/23	10/30/23	5/2/23*	5/25/23*	8/29/23*	5/25/23*
Component	Units	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM
Brine													
Oil Wells													
Carbon Monoxide	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Helium	mol%	NA	ND	ND	ND	NA	NA	NA	NA	ND	0.0089	ND	ND
Hydrogen	mol%	ND	<b>0.0466</b>	<b>0.0483</b>	<b>0.0560</b>	ND	ND	ND	ND	<b>1.40</b>	<b>0.02</b>	ND	<b>3.37</b>
Argon	mol%	<b>1.91</b>	<b>0.0341</b>	<b>0.0547</b>	<b>0.150</b>	<b>1.38</b>	<b>1.68</b>	<b>1.53</b>	<b>1.35</b>	<b>0.0086</b>	<b>0.0630</b>	<b>0.0400</b>	<b>0.0125</b>
Oxygen	mol%	<b>0.74</b>	<b>0.21</b>	<b>0.64</b>	<b>0.88</b>	<b>7.65</b>	<b>1.95</b>	<b>6.80</b>	<b>2.09</b>	<b>0.015</b>	<b>0.13</b>	<b>0.12</b>	<b>0.24</b>
Nitrogen	mol%	<b>79.17</b>	<b>10.9</b>	<b>12.99</b>	<b>65.43</b>	<b>72.47</b>	<b>75.33</b>	<b>77.42</b>	<b>61.67</b>	<b>0.38</b>	<b>9.27</b>	<b>3.71</b>	<b>0.83</b>
Carbon Dioxide	mol%	<b>5.31</b>	<b>3.88</b>	<b>2.78</b>	<b>0.28</b>	<b>13.83</b>	<b>12.71</b>	<b>8.33</b>	<b>10.68</b>	<b>1.34</b>	ND	<b>0.012</b>	ND
Methane	mol%	<b>11.72</b>	<b>84.12</b>	<b>82.76</b>	<b>32.05</b>	<b>4.65</b>	<b>8.28</b>	<b>5.77</b>	<b>23.80</b>	<b>88.34</b>	<b>89.63</b>	<b>93.74</b>	<b>89.59</b>
Ethane	mol%	<b>0.462</b>	<b>0.339</b>	<b>0.300</b>	<b>0.173</b>	<b>0.0033</b>	<b>0.039</b>	<b>0.0966</b>	<b>0.332</b>	<b>3.11</b>	<b>0.592</b>	<b>1.4</b>	<b>4.39</b>
Ethylene	mol%	<b>0.0193</b>	ND	ND	ND	ND	<b>0.0011</b>	<b>0.0015</b>	<b>0.0010</b>	ND	<b>0.001</b>	<b>0.0003</b>	<b>0.0002</b>
Propane	mol%	<b>0.389</b>	<b>0.0587</b>	<b>0.0558</b>	<b>0.198</b>	<b>0.0013</b>	<b>0.0038</b>	<b>0.0208</b>	<b>0.0468</b>	<b>2.78</b>	<b>0.202</b>	<b>0.662</b>	<b>1.17</b>
Propylene	mol%	<b>0.0006</b>	ND	ND	ND	ND	ND	ND	ND	ND	ND	<b>0.0002</b>	ND
Iso-butane	mol%	<b>0.0312</b>	<b>0.0321</b>	<b>0.0260</b>	<b>0.0719</b>	ND	<b>0.0011</b>	<b>0.0077</b>	<b>0.0107</b>	<b>0.701</b>	<b>0.0326</b>	<b>0.118</b>	<b>0.117</b>
N-butane	mol%	<b>0.0893</b>	<b>0.123</b>	<b>0.0955</b>	<b>0.254</b>	ND	<b>0.0011</b>	<b>0.0073</b>	<b>0.0083</b>	<b>0.905</b>	<b>0.0381</b>	<b>0.135</b>	<b>0.135</b>
Iso-pentane	mol%	<b>0.0162</b>	<b>0.0643</b>	<b>0.0548</b>	<b>0.1150</b>	ND	ND	<b>0.0039</b>	<b>0.0024</b>	<b>2.7</b>	<b>0.0072</b>	<b>0.0214</b>	<b>0.0273</b>
N-pentane	mol%	<b>0.0193</b>	<b>0.0837</b>	<b>0.0752</b>	<b>0.1520</b>	ND	ND	<b>0.0023</b>	<b>0.0015</b>	<b>0.191</b>	<b>0.0053</b>	<b>0.0138</b>	<b>0.0789</b>
Hexanes +	mol%	<b>0.12</b>	<b>0.105</b>	<b>0.117</b>	<b>0.191</b>	<b>0.0114</b>	<b>0.0059</b>	<b>0.0081</b>	<b>0.0073</b>	<b>0.562</b>	<b>0.0069</b>	<b>0.0319</b>	<b>0.0948</b>
<b>Stable Isotopes</b>													
δ <sup>13</sup> C (CH <sub>4</sub> )	‰	<b>-38.98</b>	<b>-34.64</b>	<b>-34.49</b>	<b>-34.15</b>	<b>-68.91</b>	<b>-35.32</b>	<b>-36.62</b>	<b>-38.18</b>	<b>-45.41</b>	<b>-53.33</b>	<b>-53.17</b>	<b>-47.78</b>
δD (CH <sub>4</sub> )	‰	<b>-171.7</b>	<b>-144.9</b>	<b>-143.8</b>	<b>-140.8</b>	<b>-183</b>	<b>-131.6</b>	<b>-132.62</b>	<b>-148.0</b>	<b>-168.6</b>	<b>-174.4</b>	<b>-177.8</b>	<b>-179.8</b>
δ <sup>13</sup> C (CO <sub>2</sub> )	‰	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:  
**Bolded** values deteted in the sample.  
 ND - Not Detected  
 NA - Not Analyzed (insufficient volume)  
 \* - Gas sample (not dissolved gas)

Table 5  
**Oil Data Summary**  
 Sulphur Dome  
 Calcasieu Parish, Louisiana

Sample ID	Sample Date	Location	Sampler	Units	Cavern 7 Oil								Cavern 4 Oil	
					Westlake 7B	Westlake 7B	Westlake 7B	Westlake 7B	Westlake 7B	7B Oil	Cavern 7B	7B Oil	7B Oil	Cavern 4
					5/11/22	6/14/22	8/16/22	11/2/22	1/18/23	3/30/23	5/25/23	6/16/23	10/25/23	5/25/23
					Shore Tank @ Boardwalk Composite	Shore Tank @ Boardwalk Composite	Cavern 7	Cavern 7	Cavern 7	Cavern 7 frac tank	Cavern 7	Cavern 7	Cavern 7	Cavern 4
Constituent														
Average API Gravity	°	<b>30.3</b>	<b>32.8</b>	<b>34.1</b>	<b>32.8</b>	<b>34.0</b>	<b>33.6</b>	<b>33.52</b>	<b>33.98</b>	<b>33.85</b>	<b>31.21</b>			
Sulfur	Wt %	<b>1.48</b>	<b>1.3788</b>	<b>1.36</b>	<b>1.38</b>	<b>1.4</b>	<b>1.37</b>	<b>1.401</b>	<b>1.350</b>	<b>1.362</b>	<b>1.548</b>			
Vanadium	mg/kg	<b>20.6</b>	<b>4.035</b>	<b>2.85</b>	<b>22.8</b>	<b>22.8</b>	<b>100</b>	<b>23</b>	<b>25</b>	<b>21</b>	<b>42</b>			
Nickel	mg/kg	<b>26.2</b>	<b>1.401</b>	<b>0.986</b>	<b>6.11</b>	<b>5.88</b>	<b>26</b>	<b>6</b>	<b>6</b>	<b>5</b>	<b>9</b>			
Iron	mg/kg	<0.1	<b>2.304</b>	<b>0.014</b>	<b>0.002</b>	<b>0</b>	<b>12</b>	<1	<b>1</b>	<b>1</b>	<b>4</b>			
Salt	lb/1000 bbl	<1.0	<b>0.57</b>	<b>5</b>	<1.0	<b>2.1</b>	<b>18</b>	<b>5.0</b>	<b>10.6</b>	<b>23.2</b>	<b>10.4</b>			
Organic Chloride	mg/kg	<b>5.1</b>	<b>4.5</b>	<b>6.9</b>	<b>4.8</b>	<b>2.5</b>	<1.0	<1.0	<1.0	<1.0	<1.0			
Total Chloride	mg/kg	<b>5.5</b>	<b>5.19</b>	<b>10.5</b>	<b>5.5</b>	<b>9.7</b>	NA	NA	NA	NA	NA			
Inorganic Chloride	mg/kg	<b>0.4</b>	<b>0.69</b>	<b>3.7</b>	<b>0.7</b>	<b>7.2</b>	NA	NA	NA	NA	NA			
Specific Gravity	°	NA	NA	NA	NA	NA	<b>0.8571</b>	<b>0.8575</b>	<b>0.8551</b>	<b>0.8557</b>	<b>0.8696</b>			
Density	g/ml	NA	NA	NA	NA	NA	<b>0.8562</b>	<b>0.8566</b>	<b>0.8542</b>	<b>0.8549</b>	<b>0.8688</b>			

Notes:

< Not detected at the reporting limit shown.

**Bolded** values detected in sample

NA - Not Analyzed

Table 5  
**Oil Data Summary**  
 Sulphur Dome  
 Calcasieu Parish, Louisiana

		Produced Oil												
Sample ID		Yellowrock 969	209459		185997		210185	Tank Battery	252112	109963	235998	41842	189416	
Sample Date		11/2/22	5/2/23	6/16/23	5/2/23	6/16/23	5/25/23	5/25/23	6/16/23	6/16/23	8/17/23	8/17/23	8/29/23	8/29/23
Location		SN 189416 Well Sample	SN 209459 Well Sample	SN 209459 Well Sample	SN 185997 Well Sample	SN 185997 Well Sample	SN 210185 Well Sample	Tank Battery	SN 252112 Well Sample	SN 109963 Well Sample	SN 235998 Well Sample	SN 41842 Well Sample	SN 189416 1,250'	SN 189416 170'
Sampler		Intertek	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM
Constituent	Units													
Average API Gravity	°	26.0	22.81	21.56	21.53	22.96	22.79	26.95	29.72	24.05	16.88	26.55	20.65	20.8
Sulfur	Wt %	0.302	0.435	0.433	0.407	0.411	0.476	0.327	0.295	0.431	0.747	0.403	0.450	0.447
Vanadium	mg/kg	1.23	2	2	2	2	2	1	1	2	2.3	2	<0.1	<0.1
Nickel	mg/kg	7.04	8	9	9	10	10	6	5	8	9.6	22.2	10.9	8.3
Iron	mg/kg	6.57	13	6	6	7	59	15	11	17	11.7	16.3	204	179
Salt	lb/1000 bbl	363.36	1,290	9.2	1,015	138.0	9.8	32.0	74.0	54.0	9,850.0	10.6	232.0	88.0
Organic Chloride	mg/kg	89.0	<1	<1	<1	<1	<1.0	<1.0	<1	<1	<1	<1	9.0	6.2
Total Chloride	mg/kg	146.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganic Chloride	mg/kg	57.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Specific Gravity	°	NA	0.917	0.9245	0.9246	0.9161	0.9171	0.893	0.8887	0.9096	0.9536	0.8953	0.9300	0.9291
Density	g/ml	NA	0.9161	0.9235	0.9237	0.9152	0.9162	0.8921	0.8878	0.9087	0.9527	0.8944	0.9291	0.9282

Notes:

< Not detected at the reporting limit shown.

**Bolded** values detected in sample

NA - Not Analyzed

Table 5  
**Oil Data Summary**  
 Sulphur Dome  
 Calcasieu Parish, Louisiana

		Stock Tank	
Sample ID		Pad Oil	Pad Oil
Sample Date		1/18/23	6/16/23
Location		Pad Oil	Pad Oil
Sampler		Pump Oil	Pump Oil
Constituent	Units	Intertek	ERM
Average API Gravity	°	29.1	29.27
Sulfur	Wt %	1.17	<b>1.265</b>
Vanadium	mg/kg	19	18
Nickel	mg/kg	4.94	5
Iron	mg/kg	24.5	29
Salt	lb/1000 bbl	46.7	258.0
Organic Chloride	mg/kg	63.7	2.1
Total Chloride	mg/kg	202.9	NA
Inorganic Chloride	mg/kg	139.2	NA
Specific Gravity	°	NA	0.8801
Density	g/ml	NA	0.8793

Notes:

< Not detected at the reporting limit shown.

**Bolded** values detected in sample

NA - Not Analyzed



## ATTACHMENT 1: LABORATORY REPORTS



Certificate of Analysis  
 Number: 1030-23100986-001A

Houston Laboratories  
 8820 Interchange Drive  
 Houston, TX 77054  
 Phone 713-660-0901

Scott Himes  
 ERM  
 840 W. Sam Houston Parkway North  
 Houston, TX 77024-4613

Nov. 07, 2023

Station Name: Sulphur Dome  
 Station Number: 0701093  
 Station Location: Sulphur, LA  
 Sample Point: 7B Oil  
 Analyzed: 10/27/2023 00:00:00 by ES

Sampled By:  
 Sample Of: Oil Spot  
 Sample Date: 10/25/2023  
 Sample Conditions:  
 Method: ASTM D-86

**ASTM D-86 Distillation**

% Recovery	°F @ 767 mm Hg
Initial Boiling Point	142
5	228
10	270
20	354
30	NR
40	NR
50	NR
60	NR
70	NR
80	NR
85	NR
90	NR
95	NR
Final Boiling Point	400
Volume % Recovery	21.0
Volume % Residue	79.0
Volume % Loss	0.0

**Comments:** Visual color is Crude.  
 IBP to 400°F Naphtha Cut Mass Fraction = 0.2373

*Michael Staley*

Data reviewed by: Michael Staley, ASTM Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.



Certificate of Analysis  
 Number: 1030-23100986-001A

Houston Laboratories  
 8820 Interchange Drive  
 Houston, TX 77054  
 Phone 713-660-0901

Scott Himes  
 ERM  
 840 W. Sam Houston Parkway North  
 Houston, TX 77024-4613

Nov. 07, 2023

Station Name: Sulphur Dome  
 Station Number: 0701093  
 Station Location: Sulphur, LA  
 Sample Point: 7B Oil

Sampled By:  
 Sample Of: Oil Spot  
 Sample Date: 10/25/2023  
 Sample Conditions:

**Analytical Data**

Test	Method	Result	Units	Detection Limit	Lab Tech.	Analysis Date
Salt in Crude Oil	ASTM D-3230	23.2	lbs/1000 bbls		MG	10/27/2023
Sulfur Content by X-ray	ASTM D-4294	1.362	wt%		EC	10/30/2023
Organic Chloride	ASTM D-4929	<1.0	ppmw		FSN	10/28/2023
API Gravity @ 60.01 °F	ASTM D-5002	33.85	°		MG	10/27/2023
Specific Gravity @ 60.01/60.01 °F	ASTM D-5002	0.8557	—		MG	10/27/2023
Density @ 60.01 °F	ASTM D-5002	0.8549	g/ml		MG	10/27/2023
Nickel	ASTM D-5708A	5	ppmw		CMN	11/02/2023
Vanadium	ASTM D-5708A	21	ppmw		CMN	11/02/2023
Iron	ASTM D-5708A	1	ppmw		CMN	11/02/2023

**Comments:**

AS-D-4929: Sample analyzed by ASTM D-4929 procedure B.  
 Mass Fraction = 0.2373

*Michael Staley*

Data reviewed by: Michael Staley, ASTM Manager

Quality Assurance:

The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

Analysis Request Chain of Custody Record

		SPL Work Order No.		Acct. Mate Code:		Dept. Code		Page	Pages			
								1	1			
Report To: (Company Name): ERM		Project/Station Name:		Project/Station Number:		Project/Station Location:		Requested TAT*				
Address: 840 W. Sam Houston Parkway North Suite 600		Sulphur Dome		0701093		Sulphur, LA		5 business days				
City/State/Zip: Houston TX 77024-4613		Special Instructions: <i>Push turn-around</i>										
Contact:	Scott Himes	Scott.Himes@erm.com	Indicate Billing Type: (Place "X", where appropriate)	Net 30 day Acct.	<input checked="" type="checkbox"/>	Check #						
Phone:	832-209-8811	Fax:	Credit Card	<<<Contact SPL, Inc for CC payment arrangements.								
Invoice To: (Company Name): ERM				Requested Analysis (Place an "X" next to Sample ID below)				* Surcharges May Apply (See quote for details)				
Address: 840 W. Sam Houston Parkway North Suite 600		† Terms: Cylinders will be rented for \$10/cyl. All cylinders checked out are to be returned within 21 days, whether they contain sample or not. Cylinders not returned after 30 days will be considered lost and will be billed at current replacement cost.										
City/State/Zip: Houston TX 77024-4613												
Contact:	Scott Himes			Scott.Himes@erm.com								
Phone:	832-209-8811			Fax:								
Client PO# or Ref. No.:												
Contract/Proposal # (ie SPLQ####)		<b>SPLQ10978</b>										
Sample ID (used to log/track sample)	Sample Date	Sample Time	Sample Type (Gas/Liq./Solid)	Duplicate	Composite	Spot	Cylinder Tracking Info†			Comments		
							Cylinder #	Date Out	Date In			
7B Oil	10/25/23	14:15	Liq Oil			X				(1) 1-L Jar		
Sampled By-Print Name: Taylor Brown		Signature: <i>Taylor Brown</i>		Received By-Company								
Relinquished By-Print Name: Taylor Brown		Signature: <i>Taylor Brown</i>		Date: 10/26/23	Time: 12:00	Received By-Print Name: <i>[Signature]</i>		Date:	Time:			
Relinquished By-Print Name:		Signature:		Date:	Time:	Received By-Print Name:		Date:	Time:			
Relinquished By-Print Name:		Signature:		Date:	Time:	Received By-Print Name:		Date:	Time:			

RECEIVED  
OCT 26 2023  
BY: *M/S*

Choose SPL Facility>>> Corporate HQ - Houston, TX Ship to Address: 8820 Interchange Dr., Houston, TX 77054 Phone: 713.660.0901

Note - As a convenience to our clients, this form is available in an electronic format. Please contact one of our offices above for the form to be e-mailed to you.



---

10450 Stancliff Rd. Suite 210  
Houston, TX 77099  
T: +1 281 530 5656  
F: +1 281 530 5887

November 07, 2023

Scott Himes  
Environmental Resources Mgmt.  
CityCentre Four  
840 W. Sam Houston Pkwy., Suite 600  
Houston, TX 77024

Work Order: **HS23101864**

Laboratory Results for: **Sulphur Dome**

Dear Scott Himes,

ALS Environmental received 5 sample(s) on Oct 26, 2023 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL

Bernadette A. Fini  
Project Manager

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**Work Order:** HS23101864

**SAMPLE SUMMARY**

---

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS23101864-01	019-1055	Water		25-Oct-2023 10:50	26-Oct-2023 12:00	<input type="checkbox"/>
HS23101864-02	019-582	Water		25-Oct-2023 11:20	26-Oct-2023 12:00	<input type="checkbox"/>
HS23101864-03	019-580	Water		25-Oct-2023 11:45	26-Oct-2023 12:00	<input type="checkbox"/>
HS23101864-04	Cottages	Water		25-Oct-2023 12:15	26-Oct-2023 12:00	<input type="checkbox"/>
HS23101864-05	019-995	Water		25-Oct-2023 13:00	26-Oct-2023 12:00	<input type="checkbox"/>

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**Work Order:** HS23101864

**CASE NARRATIVE**

---

**Work Order Comments**

- The analysis for MA VPH was subcontracted to Pace Analytical Gulf Coast in Baton Rouge LA. Final report attached.
- Sample received outside method holding time for pH. pH is an immediate test. Sample results are flagged with an "H" qualifier.  
The temperature at the time of pH is reported. Please note that all pH results are already normalized to a temperature of 25 °C.

---

**GC Semivolatiles by Method MA EPH**

**Batch ID: 202824**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

---

**GCMS Volatiles by Method SW8260**

**Batch ID: R450730,R450732**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

---

**Metals by Method SW6020A**

**Batch ID: 202859**

**Sample ID: HS23101327-01MS**

- MS and MSD are for an unrelated sample

---

**Metals by Method SW7470A**

**Batch ID: 202843**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

---

**Wet Chemistry by Method SW9056**

**Batch ID: R450804**

**Sample ID: HS23110100-01MS**

- MS/MSD was performed on an unrelated sample.

---

**WetChemistry by Method M2540C**

**Batch ID: R450688**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

---

**WetChemistry by Method SM4500H+ B**

**Batch ID: R450718**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

---

**WetChemistry by Method SM2320B**

**Batch ID: R450717**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

---

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**Work Order:** HS23101864

---

**CASE NARRATIVE**

---

**WetChemistry by Method E376.1**

**Batch ID: R450636**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
- 

**WetChemistry by Method SM4500 S2-F**

**Batch ID: R450623**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: 019-1055  
 Collection Date: 25-Oct-2023 10:50

**ANALYTICAL REPORT**  
 WorkOrder:HS23101864  
 Lab ID:HS23101864-01  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: AKP			
Benzene	U		0.20	1.0	ug/L	1	02-Nov-2023 11:13
Ethylbenzene	U		0.30	1.0	ug/L	1	02-Nov-2023 11:13
m,p-Xylene	U		0.50	2.0	ug/L	1	02-Nov-2023 11:13
o-Xylene	U		0.30	1.0	ug/L	1	02-Nov-2023 11:13
Toluene	U		0.20	1.0	ug/L	1	02-Nov-2023 11:13
Xylenes, Total	U		0.30	1.0	ug/L	1	02-Nov-2023 11:13
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>116</i>			<i>70-126</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 11:13</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>104</i>			<i>77-113</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 11:13</i>
<i>Surr: Dibromofluoromethane</i>	<i>111</i>			<i>77-123</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 11:13</i>
<i>Surr: Toluene-d8</i>	<i>94.1</i>			<i>82-127</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 11:13</i>
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 01-Nov-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	02-Nov-2023 20:28
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	02-Nov-2023 20:28
Aliphatics >C16 - C35	U		0.00800	0.00800	mg/L	1	02-Nov-2023 20:28
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	02-Nov-2023 20:28
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	02-Nov-2023 20:28
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	02-Nov-2023 20:28
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	02-Nov-2023 20:28
<i>Surr: 1-Chlorooctadecane</i>	<i>61.9</i>			<i>40-140</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 20:28</i>
<i>Surr: 2-Bromonaphthalene</i>	<i>81.6</i>			<i>40-140</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 20:28</i>
<i>Surr: 2-Fluorobiphenyl</i>	<i>59.0</i>			<i>40-140</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 20:28</i>
<i>Surr: o-Terphenyl</i>	<i>58.2</i>			<i>40-140</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 20:28</i>

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: 019-1055  
 Collection Date: 25-Oct-2023 10:50

**ANALYTICAL REPORT**  
 WorkOrder:HS23101864  
 Lab ID:HS23101864-01  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 01-Nov-2023		Analyst: MSC	
Arsenic	0.000668	J	0.000400	0.00200	mg/L	1	02-Nov-2023 00:35
Barium	0.259		0.00190	0.00400	mg/L	1	02-Nov-2023 00:35
Cadmium	U		0.000200	0.00200	mg/L	1	02-Nov-2023 00:35
Calcium	26.8		0.0340	0.500	mg/L	1	02-Nov-2023 00:35
Chromium	U		0.000400	0.00400	mg/L	1	02-Nov-2023 00:35
Iron	3.68		0.0120	0.200	mg/L	1	02-Nov-2023 00:35
Lead	U		0.000600	0.00200	mg/L	1	02-Nov-2023 00:35
Magnesium	8.31		0.0100	0.200	mg/L	1	02-Nov-2023 00:35
Manganese	0.392		0.000700	0.00500	mg/L	1	02-Nov-2023 00:35
Nickel	U		0.000600	0.00200	mg/L	1	02-Nov-2023 00:35
Potassium	2.95		0.0180	0.200	mg/L	1	02-Nov-2023 00:35
Selenium	U		0.00110	0.00200	mg/L	1	02-Nov-2023 00:35
Silver	U		0.000200	0.00200	mg/L	1	02-Nov-2023 00:35
Sodium	35.6		0.0140	0.200	mg/L	1	02-Nov-2023 13:00
Strontium	0.249		0.000200	0.00500	mg/L	1	02-Nov-2023 00:35
Vanadium	0.0136		0.000600	0.00500	mg/L	1	02-Nov-2023 00:35
Zinc	0.0318		0.00200	0.00400	mg/L	1	02-Nov-2023 00:35
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 01-Nov-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	01-Nov-2023 13:57
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	01-Nov-2023 15:26
<b>TOTAL DISSOLVED SOLIDS BY SM2540C -2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	180		5.00	10.0	mg/L	1	01-Nov-2023 12:00
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	120		3.50	5.00	mg/L	1	02-Nov-2023 10:55
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	02-Nov-2023 10:55
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	01-Nov-2023 14:50
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.22	H	0.100	0.100	pH Units	1	02-Nov-2023 10:55
Temp Deg C @pH	14.0	H	0	0	°C	1	02-Nov-2023 10:55
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	03-Nov-2023 00:22
Chloride	39.6		0.200	0.500	mg/L	1	03-Nov-2023 00:22
Sulfate	4.00		0.200	0.500	mg/L	1	03-Nov-2023 00:22
<b>SUBCONTRACT ANALYSIS - MA VPH</b>		<b>Method:SUBCONTRACT</b>				Analyst: SUB	
Subcontracted Analyses	See Attached		0		NA	1	07-Nov-2023 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: 019-582  
 Collection Date: 25-Oct-2023 11:20

**ANALYTICAL REPORT**  
 WorkOrder:HS23101864  
 Lab ID:HS23101864-02  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: AKP			
Benzene	U		0.20	1.0	ug/L	1	02-Nov-2023 11:35
Ethylbenzene	U		0.30	1.0	ug/L	1	02-Nov-2023 11:35
m,p-Xylene	U		0.50	2.0	ug/L	1	02-Nov-2023 11:35
o-Xylene	U		0.30	1.0	ug/L	1	02-Nov-2023 11:35
Toluene	U		0.20	1.0	ug/L	1	02-Nov-2023 11:35
Xylenes, Total	U		0.30	1.0	ug/L	1	02-Nov-2023 11:35
<i>Surr: 1,2-Dichloroethane-d4</i>	116			70-126	%REC	1	02-Nov-2023 11:35
<i>Surr: 4-Bromofluorobenzene</i>	102			77-113	%REC	1	02-Nov-2023 11:35
<i>Surr: Dibromofluoromethane</i>	113			77-123	%REC	1	02-Nov-2023 11:35
<i>Surr: Toluene-d8</i>	95.1			82-127	%REC	1	02-Nov-2023 11:35
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 01-Nov-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	02-Nov-2023 20:57
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	02-Nov-2023 20:57
Aliphatics >C16 - C35	U		0.00800	0.00800	mg/L	1	02-Nov-2023 20:57
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	02-Nov-2023 20:57
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	02-Nov-2023 20:57
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	02-Nov-2023 20:57
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	02-Nov-2023 20:57
<i>Surr: 1-Chlorooctadecane</i>	63.4			40-140	%REC	1	02-Nov-2023 20:57
<i>Surr: 2-Bromonaphthalene</i>	80.1			40-140	%REC	1	02-Nov-2023 20:57
<i>Surr: 2-Fluorobiphenyl</i>	59.5			40-140	%REC	1	02-Nov-2023 20:57
<i>Surr: o-Terphenyl</i>	59.4			40-140	%REC	1	02-Nov-2023 20:57

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: 019-582  
 Collection Date: 25-Oct-2023 11:20

**ANALYTICAL REPORT**  
 WorkOrder:HS23101864  
 Lab ID:HS23101864-02  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 01-Nov-2023		Analyst: MSC	
Arsenic	0.000739	J	0.000400	0.00200	mg/L	1	02-Nov-2023 00:37
Barium	0.218		0.00190	0.00400	mg/L	1	02-Nov-2023 00:37
Cadmium	U		0.000200	0.00200	mg/L	1	02-Nov-2023 00:37
Calcium	22.9		0.0340	0.500	mg/L	1	02-Nov-2023 00:37
Chromium	U		0.000400	0.00400	mg/L	1	02-Nov-2023 00:37
Iron	3.23		0.0120	0.200	mg/L	1	02-Nov-2023 00:37
Lead	U		0.000600	0.00200	mg/L	1	02-Nov-2023 00:37
Magnesium	7.05		0.0100	0.200	mg/L	1	02-Nov-2023 00:37
Manganese	0.379		0.000700	0.00500	mg/L	1	02-Nov-2023 00:37
Nickel	U		0.000600	0.00200	mg/L	1	02-Nov-2023 00:37
Potassium	2.64		0.0180	0.200	mg/L	1	02-Nov-2023 00:37
Selenium	U		0.00110	0.00200	mg/L	1	02-Nov-2023 00:37
Silver	U		0.000200	0.00200	mg/L	1	02-Nov-2023 00:37
Sodium	26.2		0.0140	0.200	mg/L	1	02-Nov-2023 13:02
Strontium	0.216		0.000200	0.00500	mg/L	1	02-Nov-2023 00:37
Vanadium	0.0148		0.000600	0.00500	mg/L	1	02-Nov-2023 00:37
Zinc	0.0115		0.00200	0.00400	mg/L	1	02-Nov-2023 00:37
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 01-Nov-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	01-Nov-2023 13:59
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	01-Nov-2023 15:26
<b>TOTAL DISSOLVED SOLIDS BY SM2540C -2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	214		5.00	10.0	mg/L	1	01-Nov-2023 12:00
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	114		3.50	5.00	mg/L	1	02-Nov-2023 11:07
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	02-Nov-2023 11:07
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	01-Nov-2023 14:50
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.21	H	0.100	0.100	pH Units	1	02-Nov-2023 11:07
Temp Deg C @pH	14.3	H	0	0	°C	1	02-Nov-2023 11:07
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	03-Nov-2023 00:34
Chloride	23.6		0.200	0.500	mg/L	1	03-Nov-2023 00:34
Sulfate	4.61		0.200	0.500	mg/L	1	03-Nov-2023 00:34
<b>SUBCONTRACT ANALYSIS - MA VPH</b>		<b>Method:SUBCONTRACT</b>				Analyst: SUB	
Subcontracted Analyses	See Attached		0		NA	1	07-Nov-2023 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: 019-580  
 Collection Date: 25-Oct-2023 11:45

**ANALYTICAL REPORT**  
 WorkOrder:HS23101864  
 Lab ID:HS23101864-03  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: AKP			
Benzene	U		0.20	1.0	ug/L	1	02-Nov-2023 11:57
Ethylbenzene	U		0.30	1.0	ug/L	1	02-Nov-2023 11:57
m,p-Xylene	U		0.50	2.0	ug/L	1	02-Nov-2023 11:57
o-Xylene	U		0.30	1.0	ug/L	1	02-Nov-2023 11:57
Toluene	U		0.20	1.0	ug/L	1	02-Nov-2023 11:57
Xylenes, Total	U		0.30	1.0	ug/L	1	02-Nov-2023 11:57
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>114</i>			<i>70-126</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 11:57</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>100</i>			<i>77-113</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 11:57</i>
<i>Surr: Dibromofluoromethane</i>	<i>108</i>			<i>77-123</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 11:57</i>
<i>Surr: Toluene-d8</i>	<i>94.6</i>			<i>82-127</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 11:57</i>
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 01-Nov-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	02-Nov-2023 17:36
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	02-Nov-2023 17:36
Aliphatics >C16 - C35	U		0.00800	0.00800	mg/L	1	02-Nov-2023 17:36
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	02-Nov-2023 17:36
<b>Aromatics &gt;C12 - C16</b>	<b>0.0661</b>		<b>0.00400</b>	<b>0.00400</b>	<b>mg/L</b>	<b>1</b>	<b>02-Nov-2023 17:36</b>
<b>Aromatics &gt;C16 - C21</b>	<b>0.0214</b>		<b>0.00300</b>	<b>0.00300</b>	<b>mg/L</b>	<b>1</b>	<b>02-Nov-2023 17:36</b>
<b>Aromatics &gt;C21 - C35</b>	<b>0.0450</b>		<b>0.00900</b>	<b>0.00900</b>	<b>mg/L</b>	<b>1</b>	<b>02-Nov-2023 17:36</b>
<i>Surr: 1-Chlorooctadecane</i>	<i>60.4</i>			<i>40-140</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 17:36</i>
<i>Surr: 2-Bromonaphthalene</i>	<i>85.3</i>			<i>40-140</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 17:36</i>
<i>Surr: 2-Fluorobiphenyl</i>	<i>71.3</i>			<i>40-140</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 17:36</i>
<i>Surr: o-Terphenyl</i>	<i>56.3</i>			<i>40-140</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 17:36</i>

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: 019-580  
 Collection Date: 25-Oct-2023 11:45

**ANALYTICAL REPORT**  
 WorkOrder:HS23101864  
 Lab ID:HS23101864-03  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 01-Nov-2023		Analyst: MSC	
Arsenic	0.000688	J	0.000400	0.00200	mg/L	1	02-Nov-2023 00:39
Barium	0.217		0.00190	0.00400	mg/L	1	02-Nov-2023 00:39
Cadmium	U		0.000200	0.00200	mg/L	1	02-Nov-2023 00:39
Calcium	24.5		0.0340	0.500	mg/L	1	02-Nov-2023 00:39
Chromium	U		0.000400	0.00400	mg/L	1	02-Nov-2023 00:39
Iron	3.84		0.0120	0.200	mg/L	1	02-Nov-2023 00:39
Lead	U		0.000600	0.00200	mg/L	1	02-Nov-2023 00:39
Magnesium	7.66		0.0100	0.200	mg/L	1	02-Nov-2023 00:39
Manganese	0.397		0.000700	0.00500	mg/L	1	02-Nov-2023 00:39
Nickel	U		0.000600	0.00200	mg/L	1	02-Nov-2023 00:39
Potassium	2.84		0.0180	0.200	mg/L	1	02-Nov-2023 00:39
Selenium	U		0.00110	0.00200	mg/L	1	02-Nov-2023 00:39
Silver	U		0.000200	0.00200	mg/L	1	02-Nov-2023 00:39
Sodium	28.2		0.0140	0.200	mg/L	1	02-Nov-2023 13:04
Strontium	0.220		0.000200	0.00500	mg/L	1	02-Nov-2023 00:39
Vanadium	0.0151		0.000600	0.00500	mg/L	1	02-Nov-2023 00:39
Zinc	0.0103		0.00200	0.00400	mg/L	1	02-Nov-2023 00:39
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 01-Nov-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	01-Nov-2023 14:01
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	01-Nov-2023 15:26
<b>TOTAL DISSOLVED SOLIDS BY SM2540C -2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	168		5.00	10.0	mg/L	1	01-Nov-2023 12:00
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	114		3.50	5.00	mg/L	1	02-Nov-2023 11:12
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	02-Nov-2023 11:12
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	01-Nov-2023 14:50
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.12	H	0.100	0.100	pH Units	1	02-Nov-2023 11:12
Temp Deg C @pH	14.9	H	0	0	°C	1	02-Nov-2023 11:12
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	03-Nov-2023 00:45
Chloride	24.8		0.200	0.500	mg/L	1	03-Nov-2023 00:45
Sulfate	5.13		0.200	0.500	mg/L	1	03-Nov-2023 00:45
<b>SUBCONTRACT ANALYSIS - MA VPH</b>		<b>Method:SUBCONTRACT</b>				Analyst: SUB	
Subcontracted Analyses	See Attached		0		NA	1	07-Nov-2023 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: Cottages  
 Collection Date: 25-Oct-2023 12:15

**ANALYTICAL REPORT**  
 WorkOrder:HS23101864  
 Lab ID:HS23101864-04  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: AKP			
Benzene	U		0.20	1.0	ug/L	1	02-Nov-2023 12:19
Ethylbenzene	U		0.30	1.0	ug/L	1	02-Nov-2023 12:19
m,p-Xylene	U		0.50	2.0	ug/L	1	02-Nov-2023 12:19
o-Xylene	U		0.30	1.0	ug/L	1	02-Nov-2023 12:19
Toluene	U		0.20	1.0	ug/L	1	02-Nov-2023 12:19
Xylenes, Total	U		0.30	1.0	ug/L	1	02-Nov-2023 12:19
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>114</i>			<i>70-126</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 12:19</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>101</i>			<i>77-113</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 12:19</i>
<i>Surr: Dibromofluoromethane</i>	<i>109</i>			<i>77-123</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 12:19</i>
<i>Surr: Toluene-d8</i>	<i>93.3</i>			<i>82-127</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 12:19</i>
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 01-Nov-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	02-Nov-2023 18:04
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	02-Nov-2023 18:04
Aliphatics >C16 - C35	U		0.00800	0.00800	mg/L	1	02-Nov-2023 18:04
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	02-Nov-2023 18:04
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	02-Nov-2023 18:04
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	02-Nov-2023 18:04
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	02-Nov-2023 18:04
<i>Surr: 1-Chlorooctadecane</i>	<i>62.2</i>			<i>40-140</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 18:04</i>
<i>Surr: 2-Bromonaphthalene</i>	<i>82.1</i>			<i>40-140</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 18:04</i>
<i>Surr: 2-Fluorobiphenyl</i>	<i>62.6</i>			<i>40-140</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 18:04</i>
<i>Surr: o-Terphenyl</i>	<i>60.1</i>			<i>40-140</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 18:04</i>

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: Cottages  
 Collection Date: 25-Oct-2023 12:15

**ANALYTICAL REPORT**  
 WorkOrder:HS23101864  
 Lab ID:HS23101864-04  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 01-Nov-2023		Analyst: MSC	
Arsenic		U	0.000400	0.00200	mg/L	1	02-Nov-2023 00:41
<b>Barium</b>	<b>0.178</b>		<b>0.00190</b>	<b>0.00400</b>	<b>mg/L</b>	1	02-Nov-2023 00:41
Cadmium		U	0.000200	0.00200	mg/L	1	02-Nov-2023 00:41
<b>Calcium</b>	<b>13.2</b>		<b>0.0340</b>	<b>0.500</b>	<b>mg/L</b>	1	02-Nov-2023 00:41
Chromium		U	0.000400	0.00400	mg/L	1	02-Nov-2023 00:41
<b>Iron</b>	<b>3.22</b>		<b>0.0120</b>	<b>0.200</b>	<b>mg/L</b>	1	02-Nov-2023 00:41
Lead		U	0.000600	0.00200	mg/L	1	02-Nov-2023 00:41
<b>Magnesium</b>	<b>3.70</b>		<b>0.0100</b>	<b>0.200</b>	<b>mg/L</b>	1	02-Nov-2023 00:41
<b>Manganese</b>	<b>0.178</b>		<b>0.000700</b>	<b>0.00500</b>	<b>mg/L</b>	1	02-Nov-2023 00:41
Nickel		U	0.000600	0.00200	mg/L	1	02-Nov-2023 00:41
<b>Potassium</b>	<b>2.18</b>		<b>0.0180</b>	<b>0.200</b>	<b>mg/L</b>	1	02-Nov-2023 00:41
Selenium		U	0.00110	0.00200	mg/L	1	02-Nov-2023 00:41
Silver		U	0.000200	0.00200	mg/L	1	02-Nov-2023 00:41
<b>Sodium</b>	<b>73.5</b>		<b>0.0140</b>	<b>0.200</b>	<b>mg/L</b>	1	02-Nov-2023 13:06
<b>Strontium</b>	<b>0.165</b>		<b>0.000200</b>	<b>0.00500</b>	<b>mg/L</b>	1	02-Nov-2023 00:41
<b>Vanadium</b>	<b>0.0139</b>		<b>0.000600</b>	<b>0.00500</b>	<b>mg/L</b>	1	02-Nov-2023 00:41
<b>Zinc</b>	<b>0.166</b>		<b>0.00200</b>	<b>0.00400</b>	<b>mg/L</b>	1	02-Nov-2023 00:41
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 01-Nov-2023		Analyst: JS	
Mercury		U	0.0000300	0.000200	mg/L	1	01-Nov-2023 14:08
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide		U	0.500	1.00	mg/L	1	01-Nov-2023 15:26
<b>TOTAL DISSOLVED SOLIDS BY SM2540C -2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	<b>236</b>		<b>5.00</b>	<b>10.0</b>	<b>mg/L</b>	1	01-Nov-2023 12:00
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	<b>146</b>		<b>3.50</b>	<b>5.00</b>	<b>mg/L</b>	1	02-Nov-2023 11:17
Alkalinity, Carbonate (As CaCO3)		U	3.50	5.00	mg/L	1	02-Nov-2023 11:17
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide		U	1.70	2.00	mg/L	1	01-Nov-2023 14:50
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	<b>7.63</b>	H	<b>0.100</b>	<b>0.100</b>	<b>pH Units</b>	1	02-Nov-2023 11:17
Temp Deg C @pH	<b>15.1</b>	H	<b>0</b>	<b>0</b>	<b>°C</b>	1	02-Nov-2023 11:17
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	<b>0.122</b>		<b>0.0300</b>	<b>0.100</b>	<b>mg/L</b>	1	03-Nov-2023 00:57
Chloride	<b>56.9</b>		<b>0.200</b>	<b>0.500</b>	<b>mg/L</b>	1	03-Nov-2023 00:57
Sulfate	<b>0.491</b>	J	<b>0.200</b>	<b>0.500</b>	<b>mg/L</b>	1	03-Nov-2023 00:57
<b>SUBCONTRACT ANALYSIS - MA VPH</b>		<b>Method:SUBCONTRACT</b>				Analyst: SUB	
Subcontracted Analyses	See Attached		0		NA	1	07-Nov-2023 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: 019-995  
 Collection Date: 25-Oct-2023 13:00

**ANALYTICAL REPORT**  
 WorkOrder:HS23101864  
 Lab ID:HS23101864-05  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: AKP			
Benzene	U		0.20	1.0	ug/L	1	02-Nov-2023 15:30
Ethylbenzene	U		0.30	1.0	ug/L	1	02-Nov-2023 15:30
m,p-Xylene	U		0.50	2.0	ug/L	1	02-Nov-2023 15:30
o-Xylene	U		0.30	1.0	ug/L	1	02-Nov-2023 15:30
Toluene	U		0.20	1.0	ug/L	1	02-Nov-2023 15:30
Xylenes, Total	U		0.30	1.0	ug/L	1	02-Nov-2023 15:30
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>103</i>			<i>70-126</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 15:30</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>94.3</i>			<i>77-113</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 15:30</i>
<i>Surr: Dibromofluoromethane</i>	<i>104</i>			<i>77-123</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 15:30</i>
<i>Surr: Toluene-d8</i>	<i>90.1</i>			<i>82-127</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 15:30</i>
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 01-Nov-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	02-Nov-2023 18:33
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	02-Nov-2023 18:33
Aliphatics >C16 - C35	U		0.00800	0.00800	mg/L	1	02-Nov-2023 18:33
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	02-Nov-2023 18:33
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	02-Nov-2023 18:33
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	02-Nov-2023 18:33
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	02-Nov-2023 18:33
<i>Surr: 1-Chlorooctadecane</i>	<i>60.7</i>			<i>40-140</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 18:33</i>
<i>Surr: 2-Bromonaphthalene</i>	<i>81.5</i>			<i>40-140</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 18:33</i>
<i>Surr: 2-Fluorobiphenyl</i>	<i>83.4</i>			<i>40-140</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 18:33</i>
<i>Surr: o-Terphenyl</i>	<i>55.8</i>			<i>40-140</i>	<i>%REC</i>	<i>1</i>	<i>02-Nov-2023 18:33</i>

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: 019-995  
 Collection Date: 25-Oct-2023 13:00

**ANALYTICAL REPORT**  
 WorkOrder:HS23101864  
 Lab ID:HS23101864-05  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 01-Nov-2023		Analyst: MSC	
Arsenic	0.000623	J	0.000400	0.00200	mg/L	1	02-Nov-2023 00:43
Barium	0.174		0.00190	0.00400	mg/L	1	02-Nov-2023 00:43
Cadmium	U		0.000200	0.00200	mg/L	1	02-Nov-2023 00:43
Calcium	21.1		0.0340	0.500	mg/L	1	02-Nov-2023 00:43
Chromium	U		0.000400	0.00400	mg/L	1	02-Nov-2023 00:43
Iron	1.23		0.0120	0.200	mg/L	1	02-Nov-2023 00:43
Lead	U		0.000600	0.00200	mg/L	1	02-Nov-2023 00:43
Magnesium	6.40		0.0100	0.200	mg/L	1	02-Nov-2023 00:43
Manganese	0.222		0.000700	0.00500	mg/L	1	02-Nov-2023 00:43
Nickel	U		0.000600	0.00200	mg/L	1	02-Nov-2023 00:43
Potassium	2.20		0.0180	0.200	mg/L	1	02-Nov-2023 00:43
Selenium	U		0.00110	0.00200	mg/L	1	02-Nov-2023 00:43
Silver	U		0.000200	0.00200	mg/L	1	02-Nov-2023 00:43
Sodium	31.6		0.0140	0.200	mg/L	1	02-Nov-2023 13:08
Strontium	0.214		0.000200	0.00500	mg/L	1	02-Nov-2023 00:43
Vanadium	0.0130		0.000600	0.00500	mg/L	1	02-Nov-2023 00:43
Zinc	0.00245	J	0.00200	0.00400	mg/L	1	02-Nov-2023 00:43
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 01-Nov-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	01-Nov-2023 14:10
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	01-Nov-2023 15:26
<b>TOTAL DISSOLVED SOLIDS BY SM2540C -2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	180		5.00	10.0	mg/L	1	01-Nov-2023 12:00
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	129		3.50	5.00	mg/L	1	02-Nov-2023 11:23
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	02-Nov-2023 11:23
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	01-Nov-2023 14:50
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.49	H	0.100	0.100	pH Units	1	02-Nov-2023 11:23
Temp Deg C @pH	16.1	H	0	0	°C	1	02-Nov-2023 11:23
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	03-Nov-2023 01:08
Chloride	23.0		0.200	0.500	mg/L	1	03-Nov-2023 01:08
Sulfate	1.98		0.200	0.500	mg/L	1	03-Nov-2023 01:08
<b>SUBCONTRACT ANALYSIS - MA VPH</b>		<b>Method:SUBCONTRACT</b>				Analyst: SUB	
Subcontracted Analyses	See Attached		0		NA	1	07-Nov-2023 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Weight / Prep Log

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**Batch ID:** 202824      **Start Date:** 01 Nov 2023 11:24      **End Date:** 01 Nov 2023 11:24  
**Method:** MA EPH EXTRACTION-FRACTIONATION      **Prep Code:** MA EPH\_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23101864-01	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23101864-02	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23101864-03	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23101864-04	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23101864-05	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2

**Batch ID:** 202843      **Start Date:** 01 Nov 2023 09:00      **End Date:** 01 Nov 2023 09:00  
**Method:** MERCURY PREP BY 7470A- WATER      **Prep Code:** HG\_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23101864-01		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23101864-02		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23101864-03		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23101864-04		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23101864-05		10 (mL)	10 (mL)	1	120 plastic HNO3

**Batch ID:** 202859      **Start Date:** 01 Nov 2023 13:30      **End Date:** 01 Nov 2023 13:30  
**Method:** WATER - SW3010A      **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23101864-01		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23101864-02		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23101864-03		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23101864-04		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23101864-05		10 (mL)	10 (mL)	1	120 plastic HNO3

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID: 202824 ( 0 )</b>		<b>Test Name : MASSACHUSETTS EPH R2.1, DEC 2019</b>			<b>Matrix: Water</b>	
HS23101864-01	019-1055	25 Oct 2023 10:50		01 Nov 2023 11:24	02 Nov 2023 20:28	1
HS23101864-02	019-582	25 Oct 2023 11:20		01 Nov 2023 11:24	02 Nov 2023 20:57	1
HS23101864-03	019-580	25 Oct 2023 11:45		01 Nov 2023 11:24	02 Nov 2023 17:36	1
HS23101864-04	Cottages	25 Oct 2023 12:15		01 Nov 2023 11:24	02 Nov 2023 18:04	1
HS23101864-05	019-995	25 Oct 2023 13:00		01 Nov 2023 11:24	02 Nov 2023 18:33	1
<b>Batch ID: 202824 ( 1 )</b>		<b>Test Name : MASSACHUSETTS EPH R2.1, DEC 2019</b>			<b>Matrix: Water</b>	
HS23101864-01	019-1055	25 Oct 2023 10:50		01 Nov 2023 11:24	02 Nov 2023 20:28	1
HS23101864-02	019-582	25 Oct 2023 11:20		01 Nov 2023 11:24	02 Nov 2023 20:57	1
HS23101864-03	019-580	25 Oct 2023 11:45		01 Nov 2023 11:24	02 Nov 2023 17:36	1
HS23101864-04	Cottages	25 Oct 2023 12:15		01 Nov 2023 11:24	02 Nov 2023 18:04	1
HS23101864-05	019-995	25 Oct 2023 13:00		01 Nov 2023 11:24	02 Nov 2023 18:33	1
<b>Batch ID: 202843 ( 0 )</b>		<b>Test Name : MERCURY BY SW7470A</b>			<b>Matrix: Water</b>	
HS23101864-01	019-1055	25 Oct 2023 10:50		01 Nov 2023 09:00	01 Nov 2023 13:57	1
HS23101864-02	019-582	25 Oct 2023 11:20		01 Nov 2023 09:00	01 Nov 2023 13:59	1
HS23101864-03	019-580	25 Oct 2023 11:45		01 Nov 2023 09:00	01 Nov 2023 14:01	1
HS23101864-04	Cottages	25 Oct 2023 12:15		01 Nov 2023 09:00	01 Nov 2023 14:08	1
HS23101864-05	019-995	25 Oct 2023 13:00		01 Nov 2023 09:00	01 Nov 2023 14:10	1
<b>Batch ID: 202859 ( 0 )</b>		<b>Test Name : ICP-MS METALS BY SW6020A</b>			<b>Matrix: Water</b>	
HS23101864-01	019-1055	25 Oct 2023 10:50		01 Nov 2023 13:30	02 Nov 2023 13:00	1
HS23101864-01	019-1055	25 Oct 2023 10:50		01 Nov 2023 13:30	02 Nov 2023 00:35	1
HS23101864-02	019-582	25 Oct 2023 11:20		01 Nov 2023 13:30	02 Nov 2023 13:02	1
HS23101864-02	019-582	25 Oct 2023 11:20		01 Nov 2023 13:30	02 Nov 2023 00:37	1
HS23101864-03	019-580	25 Oct 2023 11:45		01 Nov 2023 13:30	02 Nov 2023 13:04	1
HS23101864-03	019-580	25 Oct 2023 11:45		01 Nov 2023 13:30	02 Nov 2023 00:39	1
HS23101864-04	Cottages	25 Oct 2023 12:15		01 Nov 2023 13:30	02 Nov 2023 13:06	1
HS23101864-04	Cottages	25 Oct 2023 12:15		01 Nov 2023 13:30	02 Nov 2023 00:41	1
HS23101864-05	019-995	25 Oct 2023 13:00		01 Nov 2023 13:30	02 Nov 2023 13:08	1
HS23101864-05	019-995	25 Oct 2023 13:00		01 Nov 2023 13:30	02 Nov 2023 00:43	1
<b>Batch ID: R450623 ( 0 )</b>		<b>Test Name : SULFIDE BY SM4500 S2-F-2011</b>			<b>Matrix: Water</b>	
HS23101864-01	019-1055	25 Oct 2023 10:50			01 Nov 2023 14:50	1
HS23101864-02	019-582	25 Oct 2023 11:20			01 Nov 2023 14:50	1
HS23101864-03	019-580	25 Oct 2023 11:45			01 Nov 2023 14:50	1
HS23101864-04	Cottages	25 Oct 2023 12:15			01 Nov 2023 14:50	1
HS23101864-05	019-995	25 Oct 2023 13:00			01 Nov 2023 14:50	1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID:</b> R450636 ( 0 )		<b>Test Name :</b> HYDROGEN SULFIDE BY E376.1			<b>Matrix:</b> Water	
HS23101864-01	019-1055	25 Oct 2023 10:50			01 Nov 2023 15:26	1
HS23101864-02	019-582	25 Oct 2023 11:20			01 Nov 2023 15:26	1
HS23101864-03	019-580	25 Oct 2023 11:45			01 Nov 2023 15:26	1
HS23101864-04	Cottages	25 Oct 2023 12:15			01 Nov 2023 15:26	1
HS23101864-05	019-995	25 Oct 2023 13:00			01 Nov 2023 15:26	1
<b>Batch ID:</b> R450688 ( 0 )		<b>Test Name :</b> TOTAL DISSOLVED SOLIDS BY SM2540C-2011			<b>Matrix:</b> Water	
HS23101864-01	019-1055	25 Oct 2023 10:50			01 Nov 2023 12:00	1
HS23101864-02	019-582	25 Oct 2023 11:20			01 Nov 2023 12:00	1
HS23101864-03	019-580	25 Oct 2023 11:45			01 Nov 2023 12:00	1
HS23101864-04	Cottages	25 Oct 2023 12:15			01 Nov 2023 12:00	1
HS23101864-05	019-995	25 Oct 2023 13:00			01 Nov 2023 12:00	1
<b>Batch ID:</b> R450717 ( 0 )		<b>Test Name :</b> ALKALINITY BY -2011			<b>Matrix:</b> Water	
HS23101864-01	019-1055	25 Oct 2023 10:50			02 Nov 2023 10:55	1
HS23101864-02	019-582	25 Oct 2023 11:20			02 Nov 2023 11:07	1
HS23101864-03	019-580	25 Oct 2023 11:45			02 Nov 2023 11:12	1
HS23101864-04	Cottages	25 Oct 2023 12:15			02 Nov 2023 11:17	1
HS23101864-05	019-995	25 Oct 2023 13:00			02 Nov 2023 11:23	1
<b>Batch ID:</b> R450718 ( 0 )		<b>Test Name :</b> PH BY SM4500H+ B-2011			<b>Matrix:</b> Water	
HS23101864-01	019-1055	25 Oct 2023 10:50			02 Nov 2023 10:55	1
HS23101864-02	019-582	25 Oct 2023 11:20			02 Nov 2023 11:07	1
HS23101864-03	019-580	25 Oct 2023 11:45			02 Nov 2023 11:12	1
HS23101864-04	Cottages	25 Oct 2023 12:15			02 Nov 2023 11:17	1
HS23101864-05	019-995	25 Oct 2023 13:00			02 Nov 2023 11:23	1
<b>Batch ID:</b> R450730 ( 0 )		<b>Test Name :</b> LOW LEVEL VOLATILES BY SW8260C			<b>Matrix:</b> Water	
HS23101864-05	019-995	25 Oct 2023 13:00			02 Nov 2023 15:30	1
<b>Batch ID:</b> R450732 ( 0 )		<b>Test Name :</b> LOW LEVEL VOLATILES BY SW8260C			<b>Matrix:</b> Water	
HS23101864-01	019-1055	25 Oct 2023 10:50			02 Nov 2023 11:13	1
HS23101864-02	019-582	25 Oct 2023 11:20			02 Nov 2023 11:35	1
HS23101864-03	019-580	25 Oct 2023 11:45			02 Nov 2023 11:57	1
HS23101864-04	Cottages	25 Oct 2023 12:15			02 Nov 2023 12:19	1
<b>Batch ID:</b> R450804 ( 0 )		<b>Test Name :</b> ANIONS BY SW9056A			<b>Matrix:</b> Water	
HS23101864-01	019-1055	25 Oct 2023 10:50			03 Nov 2023 00:22	1
HS23101864-02	019-582	25 Oct 2023 11:20			03 Nov 2023 00:34	1
HS23101864-03	019-580	25 Oct 2023 11:45			03 Nov 2023 00:45	1
HS23101864-04	Cottages	25 Oct 2023 12:15			03 Nov 2023 00:57	1
HS23101864-05	019-995	25 Oct 2023 13:00			03 Nov 2023 01:08	1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID:</b> R451134 ( 0 )		<b>Test Name :</b> SUBCONTRACT ANALYSIS - MA VPH			<b>Matrix:</b> Water	
HS23101864-01	019-1055	25 Oct 2023 10:50			07 Nov 2023 14:54	1
HS23101864-02	019-582	25 Oct 2023 11:20			07 Nov 2023 14:54	1
HS23101864-03	019-580	25 Oct 2023 11:45			07 Nov 2023 14:54	1
HS23101864-04	Cottages	25 Oct 2023 12:15			07 Nov 2023 14:54	1
HS23101864-05	019-995	25 Oct 2023 13:00			07 Nov 2023 14:54	1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**QC BATCH REPORT**

<b>Batch ID:</b> 202824 ( 0 )	<b>Instrument:</b> FID23	<b>Method:</b> MASSACHUSETTS EPH R2.1, DEC 2019
-------------------------------	--------------------------	---

<b>MBLK</b>	Sample ID: <b>MBLK-202824</b>	Units: <b>mg/L</b>	Analysis Date: <b>02-Nov-2023 20:00</b>							
Client ID:	Run ID: <b>FID23_450827</b>	SeqNo: <b>7650087</b>	PrepDate: <b>01-Nov-2023</b> DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Aliphatics >C10 - C12	U	0.00100								
Aliphatics >C12 - C16	U	0.00200								
Aliphatics >C16 - C35	U	0.00800								
<i>Surr: 1-Chlorooctadecane</i>	<i>0.02619</i>	<i>0</i>	<i>0.04</i>	<i>0</i>	<i>65.5</i>	<i>40 - 140</i>				

<b>LCS</b>	Sample ID: <b>LCS-202824</b>	Units: <b>mg/L</b>	Analysis Date: <b>02-Nov-2023 14:40</b>							
Client ID:	Run ID: <b>FID23_450827</b>	SeqNo: <b>7650079</b>	PrepDate: <b>01-Nov-2023</b> DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Aliphatics >C10 - C12	0.04888	0.00100	0.05	0	97.8	40 - 140				
Aliphatics >C12 - C16	0.09985	0.00200	0.1	0	99.9	40 - 140				
Aliphatics >C16 - C35	0.3714	0.00800	0.4	0	92.9	40 - 140				
<i>Surr: 1-Chlorooctadecane</i>	<i>0.03229</i>	<i>0</i>	<i>0.04</i>	<i>0</i>	<i>80.7</i>	<i>40 - 140</i>				

<b>MS</b>	Sample ID: <b>HS23101612-04MS</b>	Units: <b>mg/L</b>	Analysis Date: <b>02-Nov-2023 15:38</b>							
Client ID:	Run ID: <b>FID23_450827</b>	SeqNo: <b>7650081</b>	PrepDate: <b>01-Nov-2023</b> DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Aliphatics >C10 - C12	0.05709	0.00100	0.05	0	114	40 - 140				
Aliphatics >C12 - C16	0.1195	0.00200	0.1	0	120	40 - 140				
Aliphatics >C16 - C35	0.3763	0.00800	0.4	0	94.1	40 - 140				
<i>Surr: 1-Chlorooctadecane</i>	<i>0.03248</i>	<i>0</i>	<i>0.04</i>	<i>0</i>	<i>81.2</i>	<i>40 - 140</i>				

<b>MSD</b>	Sample ID: <b>HS23101612-04MSD</b>	Units: <b>mg/L</b>	Analysis Date: <b>02-Nov-2023 16:07</b>							
Client ID:	Run ID: <b>FID23_450827</b>	SeqNo: <b>7650082</b>	PrepDate: <b>01-Nov-2023</b> DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Aliphatics >C10 - C12	0.04674	0.00100	0.05	0	93.5	40 - 140	0.05709	19.9	50	
Aliphatics >C12 - C16	0.09871	0.00200	0.1	0	98.7	40 - 140	0.1195	19.1	50	
Aliphatics >C16 - C35	0.3379	0.00800	0.4	0	84.5	40 - 140	0.3763	10.7	50	
<i>Surr: 1-Chlorooctadecane</i>	<i>0.02754</i>	<i>0</i>	<i>0.04</i>	<i>0</i>	<i>68.9</i>	<i>40 - 140</i>	<i>0.03248</i>	<i>16.5</i>	<i>50</i>	

The following samples were analyzed in this batch: HS23101864-01 HS23101864-02 HS23101864-03 HS23101864-04  
 HS23101864-05

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**QC BATCH REPORT**

<b>Batch ID:</b> 202824 ( 1 )	<b>Instrument:</b> FID-22	<b>Method:</b> MASSACHUSETTS EPH R2.1, DEC 2019								
<b>MBLK</b>	Sample ID: <b>MBLK-202824</b>	Units: <b>mg/L</b>	Analysis Date: <b>02-Nov-2023 20:00</b>							
Client ID:	Run ID: <b>FID-22_450835</b>	SeqNo: <b>7650244</b>	PrepDate: <b>01-Nov-2023</b> DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Aromatics >C10 - C12	U	0.00100								
Aromatics >C12 - C16	U	0.00400								
Aromatics >C16 - C21	U	0.00300								
Aromatics >C21 - C35	U	0.00900								
Surr: 2-Bromonaphthalene	0.03425	0	0.04	0	85.6	40 - 140				
Surr: 2-Fluorobiphenyl	0.02215	0	0.04	0	55.4	40 - 140				
Surr: o-Terphenyl	0.02618	0	0.04	0	65.5	40 - 140				

<b>LCS</b>	Sample ID: <b>LCS-202824</b>	Units: <b>mg/L</b>	Analysis Date: <b>02-Nov-2023 14:40</b>							
Client ID:	Run ID: <b>FID-22_450835</b>	SeqNo: <b>7650236</b>	PrepDate: <b>01-Nov-2023</b> DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Aromatics >C10 - C12	0.05324	0.00100	0.05	0	106	40 - 140				
Aromatics >C12 - C16	0.2006	0.00400	0.2	0	100	40 - 140				
Aromatics >C16 - C21	0.148	0.00300	0.15	0	98.7	40 - 140				
Aromatics >C21 - C35	0.381	0.00900	0.45	0	84.7	40 - 140				
Surr: 2-Bromonaphthalene	0.03804	0	0.04	0	95.1	40 - 140				
Surr: 2-Fluorobiphenyl	0.03647	0	0.04	0	91.2	40 - 140				
Surr: o-Terphenyl	0.03003	0	0.04	0	75.1	40 - 140				

<b>MS</b>	Sample ID: <b>HS23101612-04MS</b>	Units: <b>mg/L</b>	Analysis Date: <b>02-Nov-2023 15:38</b>							
Client ID:	Run ID: <b>FID-22_450835</b>	SeqNo: <b>7650238</b>	PrepDate: <b>01-Nov-2023</b> DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Aromatics >C10 - C12	0.04196	0.00100	0.05	0	83.9	40 - 140				
Aromatics >C12 - C16	0.1767	0.00400	0.2	0	88.4	40 - 140				
Aromatics >C16 - C21	0.1386	0.00300	0.15	0	92.4	40 - 140				
Aromatics >C21 - C35	0.353	0.00900	0.45	0	78.4	40 - 140				
Surr: 2-Bromonaphthalene	0.03386	0	0.04	0	84.6	40 - 140				
Surr: 2-Fluorobiphenyl	0.02522	0	0.04	0	63.0	40 - 140				
Surr: o-Terphenyl	0.02804	0	0.04	0	70.1	40 - 140				

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**QC BATCH REPORT**

**Batch ID:** 202824 ( 1 )      **Instrument:** FID-22      **Method:** MASSACHUSETTS EPH R2.1, DEC 2019

<b>MSD</b>		Sample ID: <b>HS23101612-04MSD</b>			Units: <b>mg/L</b>		Analysis Date: <b>02-Nov-2023 16:07</b>			
Client ID:		Run ID: <b>FID-22_450835</b>			SeqNo: <b>7650239</b>		PrepDate: <b>01-Nov-2023</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C10 - C12	0.04391	0.00100	0.05	0	87.8	40 - 140	0.04196	4.56	50	
Aromatics >C12 - C16	0.1706	0.00400	0.2	0	85.3	40 - 140	0.1767	3.51	50	
Aromatics >C16 - C21	0.1294	0.00300	0.15	0	86.3	40 - 140	0.1386	6.9	50	
Aromatics >C21 - C35	0.3269	0.00900	0.45	0	72.6	40 - 140	0.353	7.68	50	
<i>Surr: 2-Bromonaphthalene</i>	<i>0.03613</i>	<i>0</i>	<i>0.04</i>	<i>0</i>	<i>90.3</i>	<i>40 - 140</i>	<i>0.03386</i>	<i>6.5</i>	<i>50</i>	
<i>Surr: 2-Fluorobiphenyl</i>	<i>0.02933</i>	<i>0</i>	<i>0.04</i>	<i>0</i>	<i>73.3</i>	<i>40 - 140</i>	<i>0.02522</i>	<i>15.1</i>	<i>50</i>	
<i>Surr: o-Terphenyl</i>	<i>0.02432</i>	<i>0</i>	<i>0.04</i>	<i>0</i>	<i>60.8</i>	<i>40 - 140</i>	<i>0.02804</i>	<i>14.2</i>	<i>50</i>	

**The following samples were analyzed in this batch:** HS23101864-01    HS23101864-02    HS23101864-03    HS23101864-04  
 HS23101864-05

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**QC BATCH REPORT**

<b>Batch ID:</b> 202843 ( 0 )	<b>Instrument:</b> HG04	<b>Method:</b> MERCURY BY SW7470A
-------------------------------	-------------------------	-----------------------------------

<b>MBLK</b>	Sample ID: <b>MBLK-202843</b>	Units: <b>mg/L</b>	Analysis Date: <b>01-Nov-2023 13:15</b>							
Client ID:	Run ID: <b>HG04_450638</b>	SeqNo: <b>7645286</b>	PrepDate: <b>01-Nov-2023</b> DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual

Mercury U 0.000200

<b>LCS</b>	Sample ID: <b>LCS-202843</b>	Units: <b>mg/L</b>	Analysis Date: <b>01-Nov-2023 13:22</b>							
Client ID:	Run ID: <b>HG04_450638</b>	SeqNo: <b>7645287</b>	PrepDate: <b>01-Nov-2023</b> DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual

Mercury 0.00465 0.000200 0.005 0 93.0 80 - 120

<b>MS</b>	Sample ID: <b>HS23101291-07MS</b>	Units: <b>mg/L</b>	Analysis Date: <b>01-Nov-2023 13:35</b>							
Client ID:	Run ID: <b>HG04_450638</b>	SeqNo: <b>7645295</b>	PrepDate: <b>01-Nov-2023</b> DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual

Mercury 0.00529 0.000200 0.005 0.000049 105 75 - 125

<b>MSD</b>	Sample ID: <b>HS23101291-07MSD</b>	Units: <b>mg/L</b>	Analysis Date: <b>01-Nov-2023 13:45</b>							
Client ID:	Run ID: <b>HG04_450638</b>	SeqNo: <b>7645298</b>	PrepDate: <b>01-Nov-2023</b> DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual

Mercury 0.00527 0.000200 0.005 0.000049 104 75 - 125 0.00529 0.379 20

The following samples were analyzed in this batch: HS23101864-01 HS23101864-02 HS23101864-03 HS23101864-04  
 HS23101864-05

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**QC BATCH REPORT**

**Batch ID:** 202859 ( 0 )      **Instrument:** ICPMS06      **Method:** ICP-MS METALS BY SW6020A

MBLK	Sample ID: MBLK-202859	Units: mg/L			Analysis Date: 01-Nov-2023 23:45					
Client ID:	Run ID: ICPMS06_450582	SeqNo: 7646286	PrepDate: 01-Nov-2023	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.00200								
Barium	U	0.00400								
Cadmium	U	0.00200								
Calcium	U	0.500								
Chromium	U	0.00400								
Iron	U	0.200								
Lead	U	0.00200								
Magnesium	0.02234	0.200								J
Manganese	U	0.00500								
Nickel	U	0.00200								
Potassium	U	0.200								
Selenium	U	0.00200								
Silver	U	0.00200								
Sodium	U	0.200								
Strontium	U	0.00500								
Vanadium	0.000889	0.00500								J
Zinc	U	0.00400								

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**QC BATCH REPORT**

**Batch ID:** 202859 ( 0 )      **Instrument:** ICPMS06      **Method:** ICP-MS METALS BY SW6020A

LCS		Sample ID: LCS-202859			Units: mg/L		Analysis Date: 01-Nov-2023 23:47			
Client ID:		Run ID: ICPMS06_450582			SeqNo: 7646287		PrepDate: 01-Nov-2023		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.04898	0.00200	0.05	0	98.0	80 - 120				
Barium	0.04724	0.00400	0.05	0	94.5	80 - 120				
Cadmium	0.04778	0.00200	0.05	0	95.6	80 - 120				
Calcium	4.8	0.500	5	0	96.0	80 - 120				
Chromium	0.04558	0.00400	0.05	0	91.2	80 - 120				
Iron	4.953	0.200	5	0	99.1	80 - 120				
Lead	0.04855	0.00200	0.05	0	97.1	80 - 120				
Magnesium	4.999	0.200	5	0	100.0	80 - 120				
Manganese	0.04846	0.00500	0.05	0	96.9	80 - 120				
Nickel	0.04763	0.00200	0.05	0	95.3	80 - 120				
Potassium	4.942	0.200	5	0	98.8	80 - 120				
Selenium	0.04765	0.00200	0.05	0	95.3	80 - 120				
Silver	0.04711	0.00200	0.05	0	94.2	80 - 120				
Sodium	4.86	0.200	5	0	97.2	80 - 120				
Strontium	0.04958	0.00500	0.05	0	99.2	80 - 120				
Vanadium	0.04672	0.00500	0.05	0	93.4	80 - 120				
Zinc	0.04888	0.00400	0.05	0	97.8	80 - 120				

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**QC BATCH REPORT**

Batch ID: 202859 ( 0 )		Instrument: ICPMS06		Method: ICP-MS METALS BY SW6020A						
MS	Sample ID: HS23101327-01MS	Units: mg/L			Analysis Date: 01-Nov-2023 23:52					
Client ID:	Run ID: ICPMS06_450582	SeqNo: 7646290	PrepDate: 01-Nov-2023	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.05242	0.00200	0.05	0.000641	104	80 - 120				
Barium	0.2264	0.00400	0.05	0.166	121	80 - 120				S
Cadmium	0.04876	0.00200	0.05	0.000115	97.3	80 - 120				
Calcium	214.2	0.500	5	227	-257	80 - 120				SEO
Chromium	0.0478	0.00400	0.05	0.00087	93.9	80 - 120				
Iron	5.066	0.200	5	0.0764	99.8	80 - 120				
Lead	0.04743	0.00200	0.05	0.000016	94.8	80 - 120				
Magnesium	20.32	0.200	5	16.52	76.0	80 - 120				S
Manganese	0.05224	0.00500	0.05	0.006172	92.1	80 - 120				
Nickel	0.04767	0.00200	0.05	0.002006	91.3	80 - 120				
Potassium	8.41	0.200	5	3.847	91.3	80 - 120				
Selenium	0.05238	0.00200	0.05	0.001851	101	80 - 120				
Silver	0.04625	0.00200	0.05	0.000018	92.5	80 - 120				
Sodium	140.4	0.200	5	146.9	-128	80 - 120				SO
Strontium	0.681	0.00500	0.1	0.5941	86.9	80 - 120				O
Vanadium	0.0502	0.00500	0.05	0.001397	97.6	80 - 120				
Zinc	0.05498	0.00400	0.05	0.009244	91.5	80 - 120				

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**QC BATCH REPORT**

Batch ID: 202859 ( 0 )		Instrument: ICPMS06			Method: ICP-MS METALS BY SW6020A					
MSD	Sample ID: HS23101327-01MSD	Units: mg/L			Analysis Date: 01-Nov-2023 23:54					
Client ID:	Run ID: ICPMS06_450582	SeqNo: 7646291	PrepDate: 01-Nov-2023	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.05044	0.00200	0.05	0.000641	99.6	80 - 120	0.05242	3.85	20	
Barium	0.22	0.00400	0.05	0.166	108	80 - 120	0.2264	2.91	20	
Cadmium	0.04715	0.00200	0.05	0.000115	94.1	80 - 120	0.04876	3.35	20	
Calcium	206.9	0.500	5	227	-402	80 - 120	214.2	3.44	20	SEO
Chromium	0.04495	0.00400	0.05	0.00087	88.2	80 - 120	0.0478	6.15	20	
Iron	4.837	0.200	5	0.0764	95.2	80 - 120	5.066	4.62	20	
Lead	0.04636	0.00200	0.05	0.000016	92.7	80 - 120	0.04743	2.3	20	
Magnesium	19.55	0.200	5	16.52	60.7	80 - 120	20.32	3.85	20	S
Manganese	0.05042	0.00500	0.05	0.006172	88.5	80 - 120	0.05224	3.56	20	
Nickel	0.04609	0.00200	0.05	0.002006	88.2	80 - 120	0.04767	3.36	20	
Potassium	8.02	0.200	5	3.847	83.5	80 - 120	8.41	4.75	20	
Selenium	0.04943	0.00200	0.05	0.001851	95.2	80 - 120	0.05238	5.79	20	
Silver	0.045	0.00200	0.05	0.000018	90.0	80 - 120	0.04625	2.73	20	
Sodium	135.8	0.200	5	146.9	-220	80 - 120	140.4	3.34	20	SO
Strontium	0.6581	0.00500	0.1	0.5941	64.0	80 - 120	0.681	3.42	20	SO
Vanadium	0.04756	0.00500	0.05	0.001397	92.3	80 - 120	0.0502	5.4	20	
Zinc	0.05269	0.00400	0.05	0.009244	86.9	80 - 120	0.05498	4.25	20	

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**QC BATCH REPORT**

Batch ID: 202859 ( 0 )		Instrument: ICPMS06			Method: ICP-MS METALS BY SW6020A					
<b>PDS</b>	Sample ID: <b>HS23101327-01PDS</b>	Units: <b>mg/L</b>			Analysis Date: <b>01-Nov-2023 23:56</b>					
Client ID:	Run ID: <b>ICPMS06_450582</b>	SeqNo: <b>7646292</b>		PrepDate: <b>01-Nov-2023</b>		DF: <b>1</b>				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.1002	0.00200	0.1	0.000641	99.6	75 - 125				
Barium	0.2644	0.00400	0.1	0.166	98.4	75 - 125				
Cadmium	0.09296	0.00200	0.1	0	93.0	75 - 125				
Chromium	0.09157	0.00400	0.1	0.00087	90.7	75 - 125				
Iron	9.719	0.200	10	0.0764	96.4	75 - 125				
Lead	0.09133	0.00200	0.1	0	91.3	75 - 125				
Magnesium	24.15	0.200	10	16.52	76.3	75 - 125				
Manganese	0.09789	0.00500	0.1	0.006172	91.7	75 - 125				
Nickel	0.09165	0.00200	0.1	0.002006	89.6	75 - 125				
Potassium	12.82	0.200	10	3.847	89.7	75 - 125				
Selenium	0.09835	0.00200	0.1	0.001851	96.5	75 - 125				
Silver	0.09	0.00200	0.1	0	90.0	75 - 125				
Strontium	0.6901	0.00500	0.1	0.5941	95.9	75 - 125				O
Vanadium	0.09496	0.00500	0.1	0.001397	93.6	75 - 125				
Zinc	0.1009	0.00400	0.1	0.009244	91.7	75 - 125				

<b>PDS</b>	Sample ID: <b>HS23101327-01PDS</b>	Units: <b>mg/L</b>			Analysis Date: <b>02-Nov-2023 12:41</b>					
Client ID:	Run ID: <b>ICPMS05_450713</b>	SeqNo: <b>7647424</b>		PrepDate: <b>01-Nov-2023</b>		DF: <b>10</b>				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	323.3	5.00	100	225.7	97.6	75 - 125				
Sodium	244.4	2.00	100	144.5	99.9	75 - 125				

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**QC BATCH REPORT**

Batch ID: 202859 ( 0 )		Instrument: ICPMS06		Method: ICP-MS METALS BY SW6020A						
<b>SD</b>	Sample ID: <b>HS23101327-01SD</b>	Units: <b>mg/L</b>			Analysis Date: <b>01-Nov-2023 23:50</b>					
Client ID:	Run ID: <b>ICPMS06_450582</b>	SeqNo: <b>7646289</b>		PrepDate: <b>01-Nov-2023</b>		DF: <b>5</b>				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	Limit Qual	
Arsenic	U	0.0100					0.000641	0	10	
Barium	0.1671	0.0200					0.166	0.626	10	
Cadmium	U	0.0100					0.000115	0	10	
Chromium	U	0.0200					0.00087	0	10	
Iron	0.07192	1.00					0.0764	0	10 J	
Lead	U	0.0100					0.000016	0	10	
Magnesium	15.2	1.00					16.52	7.99	10	
Manganese	0.005057	0.0250					0.006172	0	10 J	
Nickel	U	0.0100					0.002006	0	10	
Selenium	U	0.0100					0.001851	0	10	
Silver	U	0.0100					0.000018	0	10	
Strontium	0.6106	0.0250					0.5941	2.77	10	
Vanadium	0.005856	0.0250					0.001397	0	10 J	
Zinc	U	0.0200					0.009244	0	10	

<b>SD</b>	Sample ID: <b>HS23101327-01SD</b>	Units: <b>mg/L</b>			Analysis Date: <b>02-Nov-2023 12:39</b>				
Client ID:	Run ID: <b>ICPMS05_450713</b>	SeqNo: <b>7647423</b>		PrepDate: <b>01-Nov-2023</b>		DF: <b>50</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	Limit Qual
Calcium	229.5	25.0					225.7	1.7	10
Sodium	145.4	10.0					144.5	0.638	10

The following samples were analyzed in this batch: 

HS23101864-01	HS23101864-02	HS23101864-03	HS23101864-04
HS23101864-05			

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**QC BATCH REPORT**

<b>Batch ID:</b> R450730 ( 0 )		<b>Instrument:</b> VOA4		<b>Method:</b> LOW LEVEL VOLATILES BY SW8260C					
<b>MBLK</b>	Sample ID: <b>VBLKW-231102</b>	Units: <b>ug/L</b>			Analysis Date: <b>02-Nov-2023 10:46</b>				
Client ID:	Run ID: <b>VOA4_450730</b>	SeqNo: <b>7647589</b>		PrepDate:			DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Benzene	U	1.0							
Ethylbenzene	U	1.0							
m,p-Xylene	U	2.0							
o-Xylene	U	1.0							
Toluene	U	1.0							
Xylenes, Total	U	3.0							
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>51.75</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>104</i>	<i>70 - 123</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>48.57</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>97.1</i>	<i>77 - 113</i>			
<i>Surr: Dibromofluoromethane</i>	<i>54.74</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>109</i>	<i>73 - 126</i>			
<i>Surr: Toluene-d8</i>	<i>45.01</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>90.0</i>	<i>81 - 120</i>			

<b>LCS</b>	Sample ID: <b>VLCSW-231102</b>	Units: <b>ug/L</b>			Analysis Date: <b>02-Nov-2023 10:00</b>				
Client ID:	Run ID: <b>VOA4_450730</b>	SeqNo: <b>7647588</b>		PrepDate:			DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Benzene	21.26	1.0	20	0	106	74 - 120			
Ethylbenzene	19.37	1.0	20	0	96.9	77 - 117			
m,p-Xylene	38.78	2.0	40	0	97.0	77 - 122			
o-Xylene	19	1.0	20	0	95.0	75 - 119			
Toluene	17.67	1.0	20	0	88.3	77 - 118			
Xylenes, Total	57.78	3.0	60	0	96.3	75 - 122			
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>57.91</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>116</i>	<i>70 - 123</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>50.42</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>101</i>	<i>77 - 113</i>			
<i>Surr: Dibromofluoromethane</i>	<i>55.57</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>111</i>	<i>73 - 126</i>			
<i>Surr: Toluene-d8</i>	<i>46.21</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>92.4</i>	<i>81 - 120</i>			

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**QC BATCH REPORT**

**Batch ID:** R450730 ( 0 )      **Instrument:** VOA4      **Method:** LOW LEVEL VOLATILES BY SW8260C

<b>MS</b>		Sample ID: <b>HS23101888-05MS</b>		Units: <b>ug/L</b>		Analysis Date: <b>02-Nov-2023 12:51</b>			
Client ID:		Run ID: <b>VOA4_450730</b>		SeqNo: <b>7647594</b>		PrepDate:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	21.5	1.0	20	0	108	70 - 127			
Ethylbenzene	19.59	1.0	20	0	98.0	70 - 124			
m,p-Xylene	39.25	2.0	40	1.344	94.8	70 - 130			
o-Xylene	19.11	1.0	20	0	95.5	70 - 124			
Toluene	18.14	1.0	20	0	90.7	70 - 123			
Xylenes, Total	58.36	3.0	60	1.344	95.0	70 - 130			
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>56.6</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>113</i>	<i>70 - 126</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>51.37</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>103</i>	<i>77 - 113</i>			
<i>Surr: Dibromofluoromethane</i>	<i>56.22</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>112</i>	<i>77 - 123</i>			
<i>Surr: Toluene-d8</i>	<i>46.6</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>93.2</i>	<i>82 - 127</i>			

<b>MSD</b>		Sample ID: <b>HS23101888-05MSD</b>		Units: <b>ug/L</b>		Analysis Date: <b>02-Nov-2023 13:14</b>			
Client ID:		Run ID: <b>VOA4_450730</b>		SeqNo: <b>7647595</b>		PrepDate:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	20.11	1.0	20	0	101	70 - 127	21.5	6.71	20
Ethylbenzene	18.67	1.0	20	0	93.4	70 - 124	19.59	4.83	20
m,p-Xylene	37.24	2.0	40	1.344	89.7	70 - 130	39.25	5.26	20
o-Xylene	17.98	1.0	20	0	89.9	70 - 124	19.11	6.07	20
Toluene	17.67	1.0	20	0	88.3	70 - 123	18.14	2.62	20
Xylenes, Total	55.22	3.0	60	1.344	89.8	70 - 130	58.36	5.52	20
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>55.37</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>111</i>	<i>70 - 126</i>	<i>56.6</i>	<i>2.2</i>	<i>20</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>50.56</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>101</i>	<i>77 - 113</i>	<i>51.37</i>	<i>1.58</i>	<i>20</i>
<i>Surr: Dibromofluoromethane</i>	<i>54.76</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>110</i>	<i>77 - 123</i>	<i>56.22</i>	<i>2.64</i>	<i>20</i>
<i>Surr: Toluene-d8</i>	<i>46.49</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>93.0</i>	<i>82 - 127</i>	<i>46.6</i>	<i>0.239</i>	<i>20</i>

The following samples were analyzed in this batch: HS23101864-05

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**QC BATCH REPORT**

**Batch ID:** R450732 ( 0 )      **Instrument:** VOA7      **Method:** LOW LEVEL VOLATILES BY SW8260C

<b>MBLK</b>		Sample ID: <b>VBLKW-231102</b>		Units: <b>ug/L</b>		Analysis Date: <b>02-Nov-2023 10:31</b>			
Client ID:		Run ID: <b>VOA7_450732</b>		SeqNo: <b>7647607</b>		PrepDate:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	U	1.0							
Ethylbenzene	U	1.0							
m,p-Xylene	U	2.0							
o-Xylene	U	1.0							
Toluene	U	1.0							
Xylenes, Total	U	3.0							
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>56.37</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>113</i>	<i>70 - 123</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>50.81</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>102</i>	<i>77 - 113</i>			
<i>Surr: Dibromofluoromethane</i>	<i>55.53</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>111</i>	<i>73 - 126</i>			
<i>Surr: Toluene-d8</i>	<i>47.3</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>94.6</i>	<i>81 - 120</i>			

<b>LCS</b>		Sample ID: <b>VLCSW-231102</b>		Units: <b>ug/L</b>		Analysis Date: <b>02-Nov-2023 09:47</b>			
Client ID:		Run ID: <b>VOA7_450732</b>		SeqNo: <b>7647606</b>		PrepDate:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	22.91	1.0	20	0	115	74 - 120			
Ethylbenzene	22.28	1.0	20	0	111	77 - 117			
m,p-Xylene	44.79	2.0	40	0	112	77 - 122			
o-Xylene	22.34	1.0	20	0	112	75 - 119			
Toluene	22.15	1.0	20	0	111	77 - 118			
Xylenes, Total	67.13	3.0	60	0	112	75 - 122			
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>58.23</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>116</i>	<i>70 - 123</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>52.02</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>104</i>	<i>77 - 113</i>			
<i>Surr: Dibromofluoromethane</i>	<i>55.08</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>110</i>	<i>73 - 126</i>			
<i>Surr: Toluene-d8</i>	<i>47.8</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>95.6</i>	<i>81 - 120</i>			

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**QC BATCH REPORT**

**Batch ID:** R450732 ( 0 )      **Instrument:** VOA7      **Method:** LOW LEVEL VOLATILES BY SW8260C

<b>MS</b>		Sample ID: <b>HS23101864-01MS</b>		Units: <b>ug/L</b>		Analysis Date: <b>02-Nov-2023 12:41</b>				
Client ID: <b>019-1055</b>		Run ID: <b>VOA7_450732</b>		SeqNo: <b>7647612</b>		PrepDate:		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	23.04	1.0	20	0	115	70 - 127				
Ethylbenzene	20.95	1.0	20	0	105	70 - 124				
m,p-Xylene	41.78	2.0	40	0	104	70 - 130				
o-Xylene	20.83	1.0	20	0	104	70 - 124				
Toluene	21.09	1.0	20	0	105	70 - 123				
Xylenes, Total	62.62	3.0	60	0	104	70 - 130				
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>58.85</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>118</i>	<i>70 - 126</i>				
<i>Surr: 4-Bromofluorobenzene</i>	<i>52.22</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>104</i>	<i>77 - 113</i>				
<i>Surr: Dibromofluoromethane</i>	<i>54.72</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>109</i>	<i>77 - 123</i>				
<i>Surr: Toluene-d8</i>	<i>47.62</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>95.2</i>	<i>82 - 127</i>				

<b>MSD</b>		Sample ID: <b>HS23101864-01MSD</b>		Units: <b>ug/L</b>		Analysis Date: <b>02-Nov-2023 13:02</b>				
Client ID: <b>019-1055</b>		Run ID: <b>VOA7_450732</b>		SeqNo: <b>7647613</b>		PrepDate:		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	23.42	1.0	20	0	117	70 - 127	23.04	1.62	20	
Ethylbenzene	21.32	1.0	20	0	107	70 - 124	20.95	1.73	20	
m,p-Xylene	41.84	2.0	40	0	105	70 - 130	41.78	0.126	20	
o-Xylene	20.98	1.0	20	0	105	70 - 124	20.83	0.711	20	
Toluene	21	1.0	20	0	105	70 - 123	21.09	0.422	20	
Xylenes, Total	62.82	3.0	60	0	105	70 - 130	62.62	0.321	20	
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>57.75</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>115</i>	<i>70 - 126</i>	<i>58.85</i>	<i>1.89</i>	<i>20</i>	
<i>Surr: 4-Bromofluorobenzene</i>	<i>51.92</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>104</i>	<i>77 - 113</i>	<i>52.22</i>	<i>0.576</i>	<i>20</i>	
<i>Surr: Dibromofluoromethane</i>	<i>54.99</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>110</i>	<i>77 - 123</i>	<i>54.72</i>	<i>0.49</i>	<i>20</i>	
<i>Surr: Toluene-d8</i>	<i>47.21</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>94.4</i>	<i>82 - 127</i>	<i>47.62</i>	<i>0.855</i>	<i>20</i>	

The following samples were analyzed in this batch: HS23101864-01    HS23101864-02    HS23101864-03    HS23101864-04

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**QC BATCH REPORT**

**Batch ID:** R450623 ( 0 )      **Instrument:** WetChem\_HS      **Method:** SULFIDE BY SM4500 S2-F-2011

**MBLK**      Sample ID: **MBLK-R450623**      Units: **mg/L**      Analysis Date: **01-Nov-2023 14:50**  
 Client ID:      Run ID: **WetChem\_HS\_450623** SeqNo: **7645061**      PrepDate:      DF: **1**  
 Analyte      Result      PQL      SPK Val      SPK Ref Value      %REC      Control Limit      RPD Ref Value      %RPD      RPD Limit Qual

Sulfide      U      2.00

**LCS**      Sample ID: **LCS-R450623**      Units: **mg/L**      Analysis Date: **01-Nov-2023 14:50**  
 Client ID:      Run ID: **WetChem\_HS\_450623** SeqNo: **7645060**      PrepDate:      DF: **1**  
 Analyte      Result      PQL      SPK Val      SPK Ref Value      %REC      Control Limit      RPD Ref Value      %RPD      RPD Limit Qual

Sulfide      21.8      2.00      25      0      87.2      85 - 115

**LCSD**      Sample ID: **LCSD-R450623**      Units: **mg/L**      Analysis Date: **01-Nov-2023 14:50**  
 Client ID:      Run ID: **WetChem\_HS\_450623** SeqNo: **7645059**      PrepDate:      DF: **1**  
 Analyte      Result      PQL      SPK Val      SPK Ref Value      %REC      Control Limit      RPD Ref Value      %RPD      RPD Limit Qual

Sulfide      21.6      2.00      25      0      86.4      85 - 115      21.8      0.922      20

**MS**      Sample ID: **HS23101654-01MS**      Units: **mg/L**      Analysis Date: **01-Nov-2023 14:50**  
 Client ID:      Run ID: **WetChem\_HS\_450623** SeqNo: **7645062**      PrepDate:      DF: **1**  
 Analyte      Result      PQL      SPK Val      SPK Ref Value      %REC      Control Limit      RPD Ref Value      %RPD      RPD Limit Qual

Sulfide      21.8      2.00      25      -2      95.2      80 - 120

The following samples were analyzed in this batch: HS23101864-01      HS23101864-02      HS23101864-03      HS23101864-04  
 HS23101864-05

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**QC BATCH REPORT**

**Batch ID:** R450636 ( 0 )      **Instrument:** WetChem\_HS      **Method:** HYDROGEN SULFIDE BY E376.1

<b>MBLK</b>	Sample ID: <b>MBLK-R450636</b>	Units: <b>mg/L</b>	Analysis Date: <b>01-Nov-2023 15:26</b>							
Client ID:	Run ID: <b>WetChem_HS_450636</b>	SeqNo: <b>7645252</b>	PrepDate:	DF: <b>1</b>						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Hydrogen Sulfide      U      1.00

<b>LCS</b>	Sample ID: <b>LCS-R450636</b>	Units: <b>mg/L</b>	Analysis Date: <b>01-Nov-2023 15:26</b>							
Client ID:	Run ID: <b>WetChem_HS_450636</b>	SeqNo: <b>7645251</b>	PrepDate:	DF: <b>1</b>						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Hydrogen Sulfide      23.16      1.00      26.56      0      87.2      80 - 120

<b>LCSD</b>	Sample ID: <b>LCSD-R450636</b>	Units: <b>mg/L</b>	Analysis Date: <b>01-Nov-2023 15:26</b>							
Client ID:	Run ID: <b>WetChem_HS_450636</b>	SeqNo: <b>7645250</b>	PrepDate:	DF: <b>1</b>						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Hydrogen Sulfide      22.95      1.00      26.56      0      86.4      80 - 120      23.16      0.922      20

**The following samples were analyzed in this batch:** HS23101864-01      HS23101864-02      HS23101864-03      HS23101864-04  
 HS23101864-05

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**QC BATCH REPORT**

Batch ID: R450688 ( 0 )		Instrument: Balance1		Method: TOTAL DISSOLVED SOLIDS BY SM2540C-2011						
<b>MBLK</b>	Sample ID: <b>WMBLK-11012023</b>	Units: <b>mg/L</b>		Analysis Date: <b>01-Nov-2023 12:00</b>						
Client ID:	Run ID: <b>Balance1_450688</b>	SeqNo: <b>7646833</b>		PrepDate:			DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Total Dissolved Solids (Residue, Filterable)		U	10.0							
<b>LCS</b>	Sample ID: <b>WLCS-11012023</b>	Units: <b>mg/L</b>		Analysis Date: <b>01-Nov-2023 12:00</b>						
Client ID:	Run ID: <b>Balance1_450688</b>	SeqNo: <b>7646832</b>		PrepDate:			DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Total Dissolved Solids (Residue, Filterable)		1058	10.0	1000	0	106	85 - 115			
<b>DUP</b>	Sample ID: <b>HS23101864-01DUP</b>	Units: <b>mg/L</b>		Analysis Date: <b>01-Nov-2023 12:00</b>						
Client ID: <b>019-1055</b>	Run ID: <b>Balance1_450688</b>	SeqNo: <b>7646818</b>		PrepDate:			DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Total Dissolved Solids (Residue, Filterable)		182	10.0				180	1.1	20	
<b>DUP</b>	Sample ID: <b>HS23101794-04DUP</b>	Units: <b>mg/L</b>		Analysis Date: <b>01-Nov-2023 12:00</b>						
Client ID:	Run ID: <b>Balance1_450688</b>	SeqNo: <b>7646815</b>		PrepDate:			DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Total Dissolved Solids (Residue, Filterable)		5200	10.0				5190	0.192	20	
<b>The following samples were analyzed in this batch:</b>		HS23101864-01	HS23101864-02	HS23101864-03	HS23101864-04					
		HS23101864-05								

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**QC BATCH REPORT**

<b>Batch ID:</b> R450717 ( 0 )	<b>Instrument:</b> Skalar 03	<b>Method:</b> ALKALINITY BY -2011
--------------------------------	------------------------------	------------------------------------

<b>MBLK</b>	Sample ID: <b>MBLK-11.02.2023</b>	Units: <b>mg/L</b>	Analysis Date: <b>02-Nov-2023 10:37</b>							
Client ID:	Run ID: <b>Skalar 03_450717</b>	SeqNo: <b>7647270</b>	PrepDate: DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	U	5.00								
Alkalinity, Carbonate (As CaCO3)	U	5.00								

<b>LCS</b>	Sample ID: <b>LCS-11.02.2023</b>	Units: <b>mg/L</b>	Analysis Date: <b>02-Nov-2023 10:44</b>							
Client ID:	Run ID: <b>Skalar 03_450717</b>	SeqNo: <b>7647271</b>	PrepDate: DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Alkalinity, Carbonate (As CaCO3)	950.4	5.00	1000	0	95.0	85 - 115				

<b>LCSD</b>	Sample ID: <b>LCSD-11.02.2023</b>	Units: <b>mg/L</b>	Analysis Date: <b>02-Nov-2023 10:50</b>							
Client ID:	Run ID: <b>Skalar 03_450717</b>	SeqNo: <b>7647272</b>	PrepDate: DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Alkalinity, Carbonate (As CaCO3)	956.8	5.00	1000	0	95.7	85 - 115	950.4	0.671	20	

<b>DUP</b>	Sample ID: <b>HS23101864-01DUP</b>	Units: <b>mg/L</b>	Analysis Date: <b>02-Nov-2023 11:01</b>							
Client ID: <b>019-1055</b>	Run ID: <b>Skalar 03_450717</b>	SeqNo: <b>7647274</b>	PrepDate: DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	120.3	5.00					120.5	0.166	20	
Alkalinity, Carbonate (As CaCO3)	U	5.00					0	0	20	

The following samples were analyzed in this batch:

HS23101864-01	HS23101864-02	HS23101864-03	HS23101864-04
HS23101864-05			

Client: Environmental Resources Mgmt.  
Project: Sulphur Dome  
WorkOrder: HS23101864

QC BATCH REPORT

Batch ID: R450718 ( 0 )      Instrument: Skalar 03      Method: PH BY SM4500H+ B-2011

DUP      Sample ID: HS23101864-01DUP      Units: pH Units      Analysis Date: 02-Nov-2023 11:01  
Client ID: 019-1055      Run ID: Skalar 03\_450718      SeqNo: 7647282      PrepDate:      DF: 1  
Analyte      Result      PQL      SPK Val      SPK Ref Value      %REC      Control Limit      RPD Ref Value      %RPD      RPD Limit Qual

pH	7.26	0.100						7.22	0.552	10
Temp Deg C @pH	13.8	0						14	1.44	10

The following samples were analyzed in this batch: HS23101864-01    HS23101864-02    HS23101864-03    HS23101864-04  
HS23101864-05

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**QC BATCH REPORT**

<b>Batch ID:</b> R450804 ( 0 )		<b>Instrument:</b> ICS-Integrion		<b>Method:</b> ANIONS BY SW9056A					
<b>MBLK</b>	Sample ID: <b>MBLK</b>	Units: <b>mg/L</b>			Analysis Date: <b>02-Nov-2023 21:52</b>				
Client ID:		Run ID: <b>ICS-Integrion_450804</b>	SeqNo: <b>7649721</b>	PrepDate:	DF: <b>1</b>				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Bromide	U	0.100							
Chloride	U	0.500							
Sulfate	U	0.500							

<b>LCS</b>	Sample ID: <b>LCS</b>	Units: <b>mg/L</b>			Analysis Date: <b>02-Nov-2023 22:03</b>				
Client ID:		Run ID: <b>ICS-Integrion_450804</b>	SeqNo: <b>7649722</b>	PrepDate:	DF: <b>1</b>				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Bromide	4.307	0.100	4	0	108	80 - 120			
Chloride	20.65	0.500	20	0	103	80 - 120			
Sulfate	20.17	0.500	20	0	101	80 - 120			

<b>MS</b>	Sample ID: <b>HS23110100-01MS</b>	Units: <b>mg/L</b>			Analysis Date: <b>02-Nov-2023 22:21</b>				
Client ID:		Run ID: <b>ICS-Integrion_450804</b>	SeqNo: <b>7649725</b>	PrepDate:	DF: <b>20</b>				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Bromide	41.02	2.00	40	0	103	80 - 120			
Chloride	1406	10.0	200	1166	120	80 - 120			SO
Sulfate	463	10.0	200	290	86.5	80 - 120			

<b>MSD</b>	Sample ID: <b>HS23110100-01MSD</b>	Units: <b>mg/L</b>			Analysis Date: <b>02-Nov-2023 22:27</b>				
Client ID:		Run ID: <b>ICS-Integrion_450804</b>	SeqNo: <b>7649726</b>	PrepDate:	DF: <b>20</b>				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Bromide	41.43	2.00	40	0	104	80 - 120	41.02	0.98	20
Chloride	1402	10.0	200	1166	118	80 - 120	1406	0.271	20 O
Sulfate	464.2	10.0	200	290	87.1	80 - 120	463	0.268	20

The following samples were analyzed in this batch: HS23101864-01 HS23101864-02 HS23101864-03 HS23101864-04  
 HS23101864-05

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23101864

**QUALIFIERS,  
ACRONYMS, UNITS**

<b>Qualifier</b>	<b>Description</b>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

<b>Acronym</b>	<b>Description</b>
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

<b>Unit Reported</b>	<b>Description</b>
mg/L	Milligrams per Liter

**CERTIFICATIONS,ACCREDITATIONS & LICENSES**

<b>Agency</b>	<b>Number</b>	<b>Expire Date</b>
Arkansas	88-00356	27-Mar-2024
California	2919; 2024	30-Apr-2024
Dept of Defense	L23-358	31-May-2025
Florida	E87611-38	30-Jun-2024
Illinois	2000322023-11	30-Jun-2024
Kansas	E-10352 2023-2024	31-Jul-2024
Louisiana	03087 2023-2024	30-Jun-2024
Maryland	343; 2023-2024	30-Jun-2024
North Carolina	624-2023	31-Dec-2023
North Dakota	R-193 2023-2024	30-Apr-2024
Oklahoma	2023-140	31-Aug-2024
Texas	T104704231-23-31	30-Apr-2024
Utah	TX026932023-14	31-Jul-2024

Sample Receipt Checklist

Work Order ID: HS23101864

Date/Time Received: 26-Oct-2023 12:00

Client Name: ERMSW-HOU

Received by: Corey Grandits

Completed By: /S/ Corey Grandits	28-Oct-2023 18:51	Reviewed by: /S/ Bernadette A. Fini	29-Oct-2023 19:22
eSignature	Date/Time	eSignature	Date/Time

Matrices: **W**

Carrier name: **Client**

- Shipping container/cooler in good condition? Yes  No  Not Present
- Custody seals intact on shipping container/cooler? Yes  No  Not Present
- Custody seals intact on sample bottles? Yes  No  Not Present
- VOA/TX1005/TX1006 Solids in hermetically sealed vials? Yes  No  Not Present
- Chain of custody present? Yes  No  1 Page(s)
- Chain of custody signed when relinquished and received? Yes  No  COC IDs:305192
- Samplers name present on COC? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Samples in proper container/bottle? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No
- All samples received within holding time? Yes  No
- Container/Temp Blank temperature in compliance? Yes  No

Temperature(s)/Thermometer(s):	1.3UC/1.2C , 3.5UC/3.4C	IR31
Cooler(s)/Kit(s):	50167 , 50496	
Date/Time sample(s) sent to storage:	10/28/23	
Water - VOA vials have zero headspace?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	No VOA vials submitted <input type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted by:		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:



Cincinnati, OH  
+1 513 733 5336

Everett, WA  
+1 425 356 2600

Fort Collins, CO  
+1 970 490 1511

Holland, MI  
+1 616 399 6070

# Chain of Custody Form

Page 1 of 1

COC ID: **305162**

ALS Project Manager:

**HS23101864**

, WV

Environmental Resources Mgmt.

Sulphur Dome



Customer Information		Project Information		
Purchase Order	0701093	Project Name	Sulphur Dome	A 3260_LL_W (Low Level VOC (8260) BTEX)
Work Order		Project Number		B MA EPH_W_La (MA EPH)
Company Name	Environmental Resources Mgmt.	Bill To Company	Environmental Resources Mgmt.	C MA VPH_LA_W (MA VPH)
Send Report To	Scott Himes	Invoice Attn	Accounts Payable	D 9056_anions_W (Cl, SO4, Br)
Address	CityCentre Four	Address	CityCentre Four	E ALK_W 232DB (carb, bicarb), pH
	840 W. Sam Houston Pkwy., Suite 6		840 W. Sam Houston Pkwy., Suite 6	F H2S_W (H2S)
City/State/Zip	Houston, TX 77024	City/State/Zip	Houston TX 77024	G Hg_W (Mercury)
Phone	(281) 600-1000	Phone	(281) 600-1000	H ICP_TW (As, Ba, Cd, Ca, Cr, Fe, Pb, Mg, Mn, K, Se, Ag, Na, Sr, Zn, Ni, V)
Fax	(281) 800-1001	Fax	(281) 600-1001	I SULFD_4500S F (Sulfide)
e-Mail Address	scott.himes@erm.com	e-Mail Address	ERMNAAccountsPayable@erm.com	J TDS_W 2540C (TDS)

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	019-1055	10/25/23	10:50	W	1,2,8	12	X	X	X	X	X	X	X	X	X	X	
2	019-582	↓	11:20	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
3	019-580	↓	11:45	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
4	Cottages	↓	12:15	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
5	019-495	↓	13:00	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
6																	
7																	
8																	
9																	
10																	

<b>Sampler(s) Please Print &amp; Sign</b> Taylor Brown <i>Taylor Brown</i>		<b>Shipment Method</b> drop off		<b>Required Turnaround Time: (Check Box)</b> <input checked="" type="checkbox"/> 5 Wk Days			<b>Results Due Date:</b> 5 Wk Days	
<b>Relinquished by:</b> Taylor Brown	<b>Date:</b> 10/26/23	<b>Time:</b> 12:00	<b>Received by:</b> <i>[Signature]</i>	<b>Notes:</b> ERM Sulphur Dome				
<b>Relinquished by:</b> <i>[Signature]</i>	<b>Date:</b> 10/26/23	<b>Time:</b> 12:00	<b>Received by (Laboratory):</b> CG 10/26/23 12:00	<b>Cooler ID</b> 50107	<b>Cooler Temp.</b> 1.5	<b>QC Package: (Check One Box Below)</b> <input checked="" type="checkbox"/> Level II Std. OC		
<b>Logged by (Laboratory):</b> <i>[Signature]</i>	<b>Date:</b> 10/26/23	<b>Time:</b> 12:00	<b>Checked by (Laboratory):</b> CG 10/26/23 12:00	50496	3.50	<input type="checkbox"/> Level III Std. OC - 49hr Date <input type="checkbox"/> Level III - BAW/SECUP <input type="checkbox"/> Other		
<b>Preservative Key:</b> 1-HCl 2-HNO <sub>3</sub> 3-H <sub>2</sub> SO <sub>4</sub> 4-NaOH 5-Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> 6-NaHSO <sub>4</sub> 7-Other 8-4°C 9-5035				1231				

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.  
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.  
 3. The Chain of Custody is a legal document. All information must be completed accurately.

Copyright 2011 by ALS Environmental.



November 07, 2023

Bernadette Fini  
ALS Houston  
10450 Stancliff Road  
Suite 210  
Houston, TX 77099

RE: Project: HS23101864  
Pace Project No.: 20295592

Dear Bernadette Fini:

Enclosed are the analytical results for sample(s) received by the laboratory on November 03, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - New Orleans

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh  
ruth.welsh@pacelabs.com  
(225) 678-1833  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## CERTIFICATIONS

Project: HS23101864  
Pace Project No.: 20295592

---

### **Pace Analytical Services New Orleans**

Florida Department of Health (NELAC): E87595

Illinois Environmental Protection Agency: 2000662023-7

Kansas Department of Health and Environment (NELAC):

E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):  
02006

Texas Commission on Env. Quality (NELAC):

T104704405-23-18

U.S. Dept. of Agriculture Foreign Soil Import: 525-23-117-  
89728

---

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### SAMPLE SUMMARY

Project: HS23101864  
Pace Project No.: 20295592

Lab ID	Sample ID	Matrix	Date Collected	Date Received
20295592001	019-1055	Water	10/25/23 10:50	11/03/23 09:50
20295592002	019-582	Water	10/25/23 11:20	11/03/23 09:50
20295592003	019-580	Water	10/25/23 11:45	11/03/23 09:50
20295592004	Cottages	Water	10/25/23 12:15	11/03/23 09:50
20295592005	019-995	Water	10/25/23 13:00	11/03/23 09:50

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### SAMPLE ANALYTE COUNT

Project: HS23101864  
Pace Project No.: 20295592

---

Lab ID	Sample ID	Method	Analysts	Analytes Reported
20295592001	019-1055	MADEP VPH Mod	SLK	4
20295592002	019-582	MADEP VPH Mod	SLK	4
20295592003	019-580	MADEP VPH Mod	SLK	4
20295592004	Cottages	MADEP VPH Mod	SLK	4
20295592005	019-995	MADEP VPH Mod	SLK	4

---

PASI-N = Pace Analytical Services - New Orleans

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## PROJECT NARRATIVE

Project: HS23101864

Pace Project No.: 20295592

---

**Method:** MADEP VPH Mod

**Description:** 8015/8021 GCV VPH

**Client:** ALS\_HOUSTON, TX

**Date:** November 07, 2023

**General Information:**

5 samples were analyzed for MADEP VPH Mod by Pace Analytical Services New Orleans. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

This data package has been reviewed for quality and completeness and is approved for release.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS

Project: HS23101864

Pace Project No.: 20295592

Sample: 019-1055		Lab ID: 20295592001		Collected: 10/25/23 10:50	Received: 11/03/23 09:50	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
<b>8015/8021 GCV VPH</b>		Analytical Method: MADEP VPH Mod Pace Analytical Services - New Orleans								
Aliphatic (C06-C08)	ND	mg/L	0.085	0.017	1		11/06/23 12:05			
Aliphatic (>C08-C10)	ND	mg/L	0.070	0.019	1		11/06/23 12:05			
Aromatic (>C08-C10)	ND	mg/L	0.070	0.012	1		11/06/23 12:05			
<b>Surrogates</b>										
4-Bromofluorobenzene (S)	90	%	63-133		1		11/06/23 12:05	460-00-4		

Sample: 019-582		Lab ID: 20295592002		Collected: 10/25/23 11:20	Received: 11/03/23 09:50	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
<b>8015/8021 GCV VPH</b>		Analytical Method: MADEP VPH Mod Pace Analytical Services - New Orleans								
Aliphatic (C06-C08)	ND	ug/L	85.0	17.0	1		11/06/23 12:31			
Aliphatic (>C08-C10)	ND	ug/L	70.0	19.2	1		11/06/23 12:31			
Aromatic (>C08-C10)	ND	ug/L	70.0	12.0	1		11/06/23 12:31			
<b>Surrogates</b>										
4-Bromofluorobenzene (S)	90	%	63-133		1		11/06/23 12:31	460-00-4		

Sample: 019-580		Lab ID: 20295592003		Collected: 10/25/23 11:45	Received: 11/03/23 09:50	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
<b>8015/8021 GCV VPH</b>		Analytical Method: MADEP VPH Mod Pace Analytical Services - New Orleans								
Aliphatic (C06-C08)	ND	mg/L	0.085	0.017	1		11/06/23 12:56			
Aliphatic (>C08-C10)	ND	mg/L	0.070	0.019	1		11/06/23 12:56			
Aromatic (>C08-C10)	ND	mg/L	0.070	0.012	1		11/06/23 12:56			
<b>Surrogates</b>										
4-Bromofluorobenzene (S)	90	%	63-133		1		11/06/23 12:56	460-00-4		

Sample: Cottages		Lab ID: 20295592004		Collected: 10/25/23 12:15	Received: 11/03/23 09:50	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
<b>8015/8021 GCV VPH</b>		Analytical Method: MADEP VPH Mod Pace Analytical Services - New Orleans								
Aliphatic (C06-C08)	ND	mg/L	0.085	0.017	1		11/06/23 13:22			
Aliphatic (>C08-C10)	ND	mg/L	0.070	0.019	1		11/06/23 13:22			
Aromatic (>C08-C10)	ND	mg/L	0.070	0.012	1		11/06/23 13:22			

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS

Project: HS23101864

Pace Project No.: 20295592

Sample: Cottages		Lab ID: 20295592004		Collected: 10/25/23 12:15	Received: 11/03/23 09:50	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8015/8021 GCV VPH</b>		Analytical Method: MADEP VPH Mod Pace Analytical Services - New Orleans							
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	91	%.	63-133		1		11/06/23 13:22	460-00-4	

Sample: 019-995		Lab ID: 20295592005		Collected: 10/25/23 13:00	Received: 11/03/23 09:50	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8015/8021 GCV VPH</b>		Analytical Method: MADEP VPH Mod Pace Analytical Services - New Orleans							
Aliphatic (C06-C08)	ND	mg/L	0.085	0.017	1		11/06/23 13:48		
Aliphatic (>C08-C10)	ND	mg/L	0.070	0.019	1		11/06/23 13:48		
Aromatic (>C08-C10)	ND	mg/L	0.070	0.012	1		11/06/23 13:48		
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	90	%.	63-133		1		11/06/23 13:48	460-00-4	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



**QUALITY CONTROL DATA**

Project: HS23101864

Pace Project No.: 20295592

QC Batch:	306611	Analysis Method:	MADEP VPH Mod
QC Batch Method:	MADEP VPH Mod	Analysis Description:	8015WM VPH
		Laboratory:	Pace Analytical Services - New Orleans

Associated Lab Samples: 20295592001, 20295592002, 20295592003, 20295592004, 20295592005

METHOD BLANK: 1467561 Matrix: Water  
 Associated Lab Samples: 20295592001, 20295592002, 20295592003, 20295592004, 20295592005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aliphatic (>C08-C10)	mg/L	ND	0.070	0.019	11/06/23 10:20	
Aliphatic (C06-C08)	mg/L	ND	0.085	0.017	11/06/23 10:20	
Aromatic (>C08-C10)	mg/L	ND	0.070	0.012	11/06/23 10:20	
4-Bromofluorobenzene (S)	%	89	63-133		11/06/23 10:20	

LABORATORY CONTROL SAMPLE: 1467562

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aliphatic (>C08-C10)	mg/L	0.28	0.29	105	72-127	
Aliphatic (C06-C08)	mg/L	0.28	0.30	106	77-144	
Aromatic (>C08-C10)	mg/L	0.28	0.29	105	78-134	
4-Bromofluorobenzene (S)	%			95	63-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1467563 1467564

Parameter	Units	20295592001		MSD		MS		MSD		% Rec Limits	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	% Rec				
Aliphatic (>C08-C10)	mg/L	ND	0.28	0.28	0.30	0.31	104	106	10-171	1	20	
Aliphatic (C06-C08)	mg/L	ND	0.28	0.28	0.32	0.32	114	114	10-160	0	20	
Aromatic (>C08-C10)	mg/L	ND	0.28	0.28	0.30	0.31	107	110	10-160	3	20	
4-Bromofluorobenzene (S)	%						96	92	63-133			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



## QUALIFIERS

Project: HS23101864

Pace Project No.: 20295592

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
Page 51 of 55  
without the written consent of Pace Analytical Services, LLC.



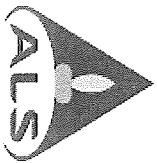
**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: HS23101864  
 Pace Project No.: 20295592

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
20295592001	019-1055	MADEP VPH Mod	306611		
20295592002	019-582	MADEP VPH Mod	306611		
20295592003	019-580	MADEP VPH Mod	306611		
20295592004	Cottages	MADEP VPH Mod	306611		
20295592005	019-995	MADEP VPH Mod	306611		

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
 without the written consent of Pace Analytical Services, LLC.



MO#: 20295592

F: +1 281 530 5887  
www.alsglobal.com

### Subcontract Chain of Custody

SAMPLING STATE: Louisiana

COC ID: 23680

**SUBCONTRACT TO:**

Pace Analytical  
7979 Innovation Park Drive  
Baton Rouge, LA 70820

Phone: +1 225 769 4900

**CUSTOMER INFORMATION:**

Company: ALS Houston  
Contact: Bernadette A. Fini  
Address: 10450 Stancliff Rd, Ste 210  
Phone: +1 281 530 5656  
Email: Bernadette.fini@alsglobal.com  
Alternate Contact: Jumoke M. Lawal  
Email: jumoke.lawal@alsglobal.com

**INVOICE INFORMATION:**

Company: ALS Houston  
Contact: Accounts Payable  
Address: 10450 Stancliff Rd, Ste 210  
Phone: +1 281 530 5656  
Reference: HS23101864  
TSR: Ron Martino

**LAB SAMPLE ID    CLIENT SAMPLE ID    MATRIX    COLLECT DATE    DUE DATE**

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE	DUE DATE
1. HS23101864-01	019-1055	Water	25 Oct 2023 10:50	- 1
MA VPH, Report units in mg/L, 4-file EQUIS EDD				
2. HS23101864-02	019-582	Water	25 Oct 2023 11:20	- 2
MA VPH, Report units in mg/L, 4-file EQUIS EDD				
3. HS23101864-03	019-580	Water	25 Oct 2023 11:45	- 3
MA VPH, Report units in mg/L, 4-file EQUIS EDD				
4. HS23101864-04	Cottages	Water	25 Oct 2023 12:15	- 4
MA VPH, Report units in mg/L, 4-file EQUIS EDD				
5. HS23101864-05	019-995	Water	25 Oct 2023 13:00	- 5
MA VPH, Report units in mg/L, 4-file EQUIS EDD				

Comments: Please analyze for La MA VPH. Need 4 file Equis EDD. Report data in mg/L.

QC Level: STD (Laboratory Standard QC: method blank and LCS required)



### Subcontract Chain of Custody

<b>SAMPLING STATE:</b> Louisiana	<b>COC ID:</b> 23680
Relinquished By: _____	Date/Time: 11.1.23 1800
Received By: <u>Donna McCune</u>	Date/Time: 11/5/23 950
Cooler ID(s): _____	Temperature(s): _____

*Page*

Sample Condition Upon Receipt

**MO# : 20295592**

Workort

PM: RM

Due Date: 11/07/23

CLIENT: BR-ALS HOUST

7979 Innovation Park Dr. Baton Rouge, LA 70806

Cooler Inspected by/date: BR 11/13/23

Means of receipt:  Pace  Client  UPS  FedEx  Other

Yes  No  NA If custody seals were present on the cooler?

Method:  Temperature Blank  Against Bottles IR Gun ID: 473 IR Gun Correction Factor: 2 °C

Cooler #1	Cooler Temp °C:	<u>16</u>	(Actual/True)	Samples on ice	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	pH Strip Lot #
Cooler #2	Cooler Temp °C:		(Actual/True)			
Cooler #3	Cooler Temp °C:		(Actual/True)	Method of coolant:	<input checked="" type="checkbox"/> Wet <input type="checkbox"/> Ice Packs <input type="checkbox"/> Dry Ice <input type="checkbox"/> None	
Cooler #4	Cooler Temp °C:		(Actual/True)			

Tracking #: 6220 8006 1684

<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Is a temperature blank present?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Was a chain of custody (COC) received?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA	Was the line and profile number listed on the COC?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Were all coolers received at or below 6.0°C? If no, notify Project Manager notified via email.
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Were proper custody procedures (relinquished/received) followed?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA	Is the sampler name and signature on the COC?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Were sample IDs listed on the COC and all sample containers?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Was collection date & time listed on the COC and all sample containers?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Did all container label information (ID, date, time) agree with the COC?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Were tests to be performed listed on the COC?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA	Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Was adequate sample volume available?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Were all samples received within ½ the holding time or 48 hours, whichever comes first?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Were all samples containers accounted for? (No missing / excess)
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Were VOA, 8015C (GRO/VPH), and RSK-175 samples free of bubbles > "pea size" (1/4" or 5mm in diameter) in any of the VOA vials?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA	Trip blank present?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA	Filtered volume received for dissolved tests? <i>If no, list affected sample(s) in comments below.</i>
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA	Were all metals/nutrient samples received at a pH of < 2?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA	Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?

Comments:

If No, was preservative added?  Yes  No  
 If added, record lots. Dispenser/dipette lot #: \_\_\_\_\_  
 HNO<sub>3</sub> \_\_\_\_\_ H<sub>2</sub>SO<sub>4</sub> \_\_\_\_\_ NaOH \_\_\_\_\_  
 Date: \_\_\_\_\_ Time: \_\_\_\_\_



---

10450 Stancliff Rd. Suite 210  
Houston, TX 77099  
T: +1 281 530 5656  
F: +1 281 530 5887

December 22, 2023

Scott Himes  
Environmental Resources Mgmt.  
CityCentre Four  
840 W. Sam Houston Pkwy., Suite 600  
Houston, TX 77024

Work Order: **HS23120955**

Laboratory Results for: **Sulphur Dome**

Dear Scott Himes,

ALS Environmental received 28 sample(s) on Dec 14, 2023 for the analysis presented in the following report.

This is a REVISED REPORT. Please see the Case Narrative for discussion concerning this revision.

Regards,

Generated By: JUMOKE.LAWAL  
Bernadette A. Fini  
Project Manager

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**Work Order:** HS23120955

**SAMPLE SUMMARY**

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS23120955-01	BS-1	Water		11-Dec-2023 10:00	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-02	7B-BS	Water		12-Dec-2023 15:40	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-03	BS-19	Water		11-Dec-2023 11:45	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-04	BS-26	Water		11-Dec-2023 13:30	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-05	BS-4	Water		11-Dec-2023 15:40	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-06	BS-3	Water		11-Dec-2023 16:30	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-07	BS-24	Water		11-Dec-2023 17:00	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-08	BS-8	Water		12-Dec-2023 08:30	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-09	BS-12	Water		12-Dec-2023 10:00	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-10	BS-7	Water		12-Dec-2023 11:20	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-11	BS-6	Water		12-Dec-2023 13:15	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-12	BS-25	Water		12-Dec-2023 13:50	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-13	BS-23	Water		12-Dec-2023 14:10	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-14	7A-BS	Water		11-Dec-2023 11:00	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-15	BS-13	Water		13-Dec-2023 09:15	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-16	BS-14	Water		13-Dec-2023 09:30	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-17	BS-22	Water		13-Dec-2023 09:50	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-18	BS-21	Water		13-Dec-2023 10:50	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-19	BS-18	Water		13-Dec-2023 11:00	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-20	BS-5	Water		13-Dec-2023 13:15	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-21	BS-17	Water		13-Dec-2023 14:20	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-22	BS-9	Water		13-Dec-2023 15:25	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-23	WW #19	Water		14-Dec-2023 07:45	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-24	WW #11	Water		14-Dec-2023 08:00	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-25	WW #12	Water		14-Dec-2023 08:45	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-26	WW #13	Water		14-Dec-2023 09:00	14-Dec-2023 14:30	<input type="checkbox"/>

Revision:1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**Work Order:** HS23120955

**SAMPLE SUMMARY**

---

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS23120955-27	Cottages Well	Water		14-Dec-2023 09:15	14-Dec-2023 14:30	<input type="checkbox"/>
HS23120955-28	WW #40	Water		14-Dec-2023 10:30	14-Dec-2023 14:30	<input type="checkbox"/>

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**Work Order:** HS23120955

**CASE NARRATIVE**

---

**Work Order Comments**

- Report revised on December 22, 2023 to correct the date and time for 7A-BS to 12/11/2023 11:00, and 7B-BS to 12/12/2023 15:40 incorrectly written on the chain of custody.

---

**Work Order Comments**

- Login notes: collection time discrepancies.

7B-BS COC=11:00 Labels=15:05  
BS-4 COC=15:40 Labels=16:00  
BS-3 COC=15:40 Labels=15:30  
BS-12 COC=10:00 Labels=09:00  
BS-7 COC=11:20 Labels=10:30  
BS-6 COC=13:15 Labels=13:00  
BS-25 COC=13:50 Labels=14:30  
BS-23 COC=14:10 Labels=13:45  
7A-BS COC=15:40 Labels=11:00  
BS-13 COC=09:15 Labels=08:30  
BS-14 COC=09:30 Labels=09:15  
BS-22 COC=09:50 Labels=10:00  
BS-21 COC=10:50 Labels=10:45  
BS-18 COC=11:00 Labels=11:15  
BS-5 COC=13:15 Labels=13:00  
BS-17 COC=13:45 Labels=13:45  
WW#19 COC=07:45 Labels=07:30  
WW#12 COC=08:45 Labels=09:15  
WW#13 COC=09:00 Labels=08:45

- Sample received outside method holding time for pH. pH is an immediate test. Sample results are flagged with an "H" qualifier.  
The temperature at the time of pH is reported. Please note that all pH results are already normalized to a temperature of 25 °C.

---

**GC Semivolatiles by Method MA EPH****Batch ID: 204938**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

**Batch ID: 204967****Sample ID: LCSD-204967**

- The RPD between the LCS and LCSD was outside of the control limit.

---

**GC Volatiles by Method MA VPH****Batch ID: R454472,R454475,R454536,R454537**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

---

**GCMS Volatiles by Method SW8260****Batch ID: R454350****Sample ID: VLCSW-23215**

- Insufficient sample received to perform MS/MSD. An LCS/LCSD was performed as batch quality control.

**Batch ID: R454788**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**Work Order:** HS23120955

**CASE NARRATIVE**

---

**GCMS Volatiles by Method SW8260**

**Batch ID: R454382**

**Sample ID: VLCSW-231216**

- Insufficient sample received to perform MS/MSD. An LCS/LCSD was performed as batch quality control.

---

**Metals by Method SW7470A**

**Batch ID: 205066,205080**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

---

**Metals by Method SW6020A**

**Batch ID: 204917**

**Sample ID: 7B-BS (HS23120955-02)**

- Sample ran at a 5X dilution due to high concentration of Sodium.

**Sample ID: HS23120377-21MS**

- MS and MSD are for an unrelated sample

**Sample ID: HS23120377-21PDS**

- PDS is for an unrelated sample

**Batch ID: 204946**

**Sample ID: HS23121100-01MS**

- MS and MSD are for an unrelated sample

**Sample ID: HS23121100-01SD**

- SD is for an unrelated sample

**Batch ID: 204996**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

---

**Wet Chemistry by Method SW9056**

**Batch ID: R454705**

**Sample ID: HS23120535-01MS**

- MS and MSD are for an unrelated sample

---

**WetChemistry by Method SM2320B**

**Batch ID: R454876,R454884**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

---

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**Work Order:** HS23120955

---

**CASE NARRATIVE**

---

**WetChemistry by Method SM4500H+ B**

**Batch ID: R454880,R454882**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
- 

**WetChemistry by Method M2540C**

**Batch ID: R454504,R454505,R454578,R454579**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
- 

**WetChemistry by Method E376.1**

**Batch ID: R454290,R454744**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
- 

**WetChemistry by Method SM4500 S2-F**

**Batch ID: R454284,R454739**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
- 

**WetChemistry by Method SW9056**

**Batch ID: R454695**

**Sample ID: 7B-BS (HS23120955-02)**

- The reporting limit is elevated due to dilution for high concentrations of non-target analytes. (Bromide)

**Sample ID: BS-26 (HS23120955-04MS)**

- The recovery of the Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) associated with this analyte was outside of the established control limits. However, the LCS was within control limits. The recovery of the MS/MSD may be due to sample matrix interference. (Bromide,Sulfate)
-

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-1  
 Collection Date: 11-Dec-2023 10:00

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-01  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: TS			
Benzene	0.66	J	0.20	1.0	ug/L	1	15-Dec-2023 22:52
Ethylbenzene	U		0.30	1.0	ug/L	1	15-Dec-2023 22:52
m,p-Xylene	0.66	J	0.50	2.0	ug/L	1	15-Dec-2023 22:52
o-Xylene	U		0.30	1.0	ug/L	1	15-Dec-2023 22:52
Toluene	U		0.20	1.0	ug/L	1	15-Dec-2023 22:52
Xylenes, Total	0.66	J	0.30	1.0	ug/L	1	15-Dec-2023 22:52
Surr: 1,2-Dichloroethane-d4	102			70-126	%REC	1	15-Dec-2023 22:52
Surr: 4-Bromofluorobenzene	96.4			77-113	%REC	1	15-Dec-2023 22:52
Surr: Dibromofluoromethane	96.7			77-123	%REC	1	15-Dec-2023 22:52
Surr: Toluene-d8	109			82-127	%REC	1	15-Dec-2023 22:52
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: TS			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	17-Dec-2023 17:17
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	17-Dec-2023 17:17
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	17-Dec-2023 17:17
Surr: 2,5-Dibromotoluene (Aliphatic)	70.8			70-130	%REC	1	17-Dec-2023 17:17
Surr: 2,5-Dibromotoluene (Aromatic)	79.3			70-130	%REC	1	17-Dec-2023 17:17
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 17-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	18-Dec-2023 22:01
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	18-Dec-2023 22:01
Aliphatics >C16 - C35	0.0367		0.00800	0.00800	mg/L	1	18-Dec-2023 22:01
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	18-Dec-2023 22:01
Aromatics >C12 - C16	0.0146		0.00400	0.00400	mg/L	1	18-Dec-2023 22:01
Aromatics >C16 - C21	0.0259		0.00300	0.00300	mg/L	1	18-Dec-2023 22:01
Aromatics >C21 - C35	0.0197		0.00900	0.00900	mg/L	1	18-Dec-2023 22:01
Surr: 1-Chlorooctadecane	58.4			40-140	%REC	1	18-Dec-2023 22:01
Surr: 2-Bromonaphthalene	87.0			40-140	%REC	1	18-Dec-2023 22:01
Surr: 2-Fluorobiphenyl	91.5			40-140	%REC	1	18-Dec-2023 22:01
Surr: o-Terphenyl	57.8			40-140	%REC	1	18-Dec-2023 22:01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-1  
 Collection Date: 11-Dec-2023 10:00

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-01  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 16-Dec-2023		Analyst: JC	
Arsenic	0.00135	J	0.000400	0.00200	mg/L	1	19-Dec-2023 23:38
Barium	0.122		0.00190	0.00400	mg/L	1	19-Dec-2023 23:38
Cadmium	U		0.000200	0.00200	mg/L	1	19-Dec-2023 23:38
Calcium	98.2		0.0340	0.500	mg/L	1	19-Dec-2023 23:38
Chromium	0.000590	J	0.000400	0.00400	mg/L	1	19-Dec-2023 23:38
Iron	0.879		0.0120	0.200	mg/L	1	19-Dec-2023 23:38
Lead	U		0.000600	0.00200	mg/L	1	19-Dec-2023 23:38
Magnesium	25.9		0.0100	0.200	mg/L	1	19-Dec-2023 23:38
Manganese	1.34		0.000700	0.00500	mg/L	1	19-Dec-2023 23:38
Nickel	0.00473		0.000600	0.00200	mg/L	1	19-Dec-2023 23:38
Potassium	2.81		0.0180	0.200	mg/L	1	19-Dec-2023 23:38
Selenium	U		0.00110	0.00200	mg/L	1	19-Dec-2023 23:38
Silver	U		0.000200	0.00200	mg/L	1	19-Dec-2023 23:38
Sodium	161		0.0140	0.200	mg/L	1	19-Dec-2023 23:38
Strontium	0.622		0.000200	0.00500	mg/L	1	19-Dec-2023 23:38
Vanadium	0.00189	J	0.000600	0.00500	mg/L	1	19-Dec-2023 23:38
Zinc	0.0135		0.00200	0.00400	mg/L	1	19-Dec-2023 23:38
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	20-Dec-2023 11:59
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	15-Dec-2023 14:23
<b>TOTAL DISSOLVED SOLIDS BY SM2540C -2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	716		5.00	10.0	mg/L	1	15-Dec-2023 12:30
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	84.9		3.50	5.00	mg/L	1	20-Dec-2023 13:26
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 13:26
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	15-Dec-2023 13:59
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.18	H	0.100	0.100	pH Units	1	20-Dec-2023 13:26
Temp Deg C @pH	17.8	H	0	0	°C	1	20-Dec-2023 13:26
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	19-Dec-2023 21:08
Chloride	346		2.00	5.00	mg/L	10	19-Dec-2023 21:13
Sulfate	179		2.00	5.00	mg/L	10	19-Dec-2023 21:13

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: 7B-BS  
 Collection Date: 12-Dec-2023 15:40

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-02  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: TS			
Benzene	3.0		0.20	1.0	ug/L	1	15-Dec-2023 23:13
Ethylbenzene	3.4		0.30	1.0	ug/L	1	15-Dec-2023 23:13
m,p-Xylene	6.1		0.50	2.0	ug/L	1	15-Dec-2023 23:13
o-Xylene	4.5		0.30	1.0	ug/L	1	15-Dec-2023 23:13
Toluene	1.0		0.20	1.0	ug/L	1	15-Dec-2023 23:13
Xylenes, Total	11		0.30	1.0	ug/L	1	15-Dec-2023 23:13
Surr: 1,2-Dichloroethane-d4	105			70-126	%REC	1	15-Dec-2023 23:13
Surr: 4-Bromofluorobenzene	93.9			77-113	%REC	1	15-Dec-2023 23:13
Surr: Dibromofluoromethane	97.2			77-123	%REC	1	15-Dec-2023 23:13
Surr: Toluene-d8	108			82-127	%REC	1	15-Dec-2023 23:13
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: TS			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	17-Dec-2023 17:55
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	17-Dec-2023 17:55
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	17-Dec-2023 17:55
Surr: 2,5-Dibromotoluene (Aliphatic)	93.7			70-130	%REC	1	17-Dec-2023 17:55
Surr: 2,5-Dibromotoluene (Aromatic)	104			70-130	%REC	1	17-Dec-2023 17:55
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 17-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	18-Dec-2023 22:29
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	18-Dec-2023 22:29
<b>Aliphatics &gt;C16 - C35</b>	<b>0.0824</b>		<b>0.00800</b>	<b>0.00800</b>	<b>mg/L</b>	1	18-Dec-2023 22:29
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	18-Dec-2023 22:29
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	18-Dec-2023 22:29
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	18-Dec-2023 22:29
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	18-Dec-2023 22:29
Surr: 1-Chlorooctadecane	49.8			40-140	%REC	1	18-Dec-2023 22:29
Surr: 2-Bromonaphthalene	83.5			40-140	%REC	1	18-Dec-2023 22:29
Surr: 2-Fluorobiphenyl	86.3			40-140	%REC	1	18-Dec-2023 22:29
Surr: o-Terphenyl	57.6			40-140	%REC	1	18-Dec-2023 22:29

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: 7B-BS  
 Collection Date: 12-Dec-2023 15:40

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-02  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 16-Dec-2023		Analyst: JC	
Arsenic		U	0.00200	0.0100	mg/L	5	20-Dec-2023 11:56
<b>Barium</b>	<b>1.04</b>		<b>0.00950</b>	<b>0.0200</b>	<b>mg/L</b>	5	20-Dec-2023 11:56
Cadmium		U	0.00100	0.0100	mg/L	5	20-Dec-2023 11:56
<b>Calcium</b>	<b>61.9</b>		<b>0.170</b>	<b>2.50</b>	<b>mg/L</b>	5	20-Dec-2023 11:56
<b>Chromium</b>	<b>0.00341</b>	J	<b>0.00200</b>	<b>0.0200</b>	<b>mg/L</b>	5	20-Dec-2023 11:56
<b>Iron</b>	<b>1.35</b>		<b>0.0600</b>	<b>1.00</b>	<b>mg/L</b>	5	20-Dec-2023 11:56
<b>Lead</b>	<b>0.00409</b>	J	<b>0.00300</b>	<b>0.0100</b>	<b>mg/L</b>	5	20-Dec-2023 11:56
<b>Magnesium</b>	<b>1.77</b>		<b>0.0500</b>	<b>1.00</b>	<b>mg/L</b>	5	20-Dec-2023 11:56
<b>Manganese</b>	<b>0.324</b>		<b>0.00350</b>	<b>0.0250</b>	<b>mg/L</b>	5	20-Dec-2023 11:56
<b>Nickel</b>	<b>0.00858</b>	J	<b>0.00300</b>	<b>0.0100</b>	<b>mg/L</b>	5	20-Dec-2023 11:56
<b>Potassium</b>	<b>3.58</b>		<b>0.0900</b>	<b>1.00</b>	<b>mg/L</b>	5	20-Dec-2023 11:56
Selenium		U	0.00550	0.0100	mg/L	5	20-Dec-2023 11:56
Silver		U	0.00100	0.0100	mg/L	5	20-Dec-2023 11:56
<b>Sodium</b>	<b>11,200</b>		<b>7.00</b>	<b>100</b>	<b>mg/L</b>	500	20-Dec-2023 13:06
<b>Strontium</b>	<b>0.427</b>		<b>0.00100</b>	<b>0.0250</b>	<b>mg/L</b>	5	20-Dec-2023 11:56
Vanadium		U	0.00300	0.0250	mg/L	5	20-Dec-2023 11:56
<b>Zinc</b>	<b>0.427</b>		<b>0.0100</b>	<b>0.0200</b>	<b>mg/L</b>	5	20-Dec-2023 11:56
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury		U	0.0000300	0.000200	mg/L	1	20-Dec-2023 12:01
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide		U	0.500	1.00	mg/L	1	15-Dec-2023 14:23
<b>TOTAL DISSOLVED SOLIDS BY SM2540C -2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	<b>45,200</b>		<b>5.00</b>	<b>10.0</b>	<b>mg/L</b>	1	15-Dec-2023 12:30
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	<b>112</b>		<b>3.50</b>	<b>5.00</b>	<b>mg/L</b>	1	20-Dec-2023 13:32
Alkalinity, Carbonate (As CaCO3)		U	3.50	5.00	mg/L	1	20-Dec-2023 13:32
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide		U	1.70	2.00	mg/L	1	15-Dec-2023 13:59
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	<b>7.34</b>	H	<b>0.100</b>	<b>0.100</b>	<b>pH Units</b>	1	20-Dec-2023 13:32
Temp Deg C @pH	<b>17.3</b>	H	<b>0</b>	<b>0</b>	<b>°C</b>	1	20-Dec-2023 13:32
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide		U	0.300	1.00	mg/L	10	19-Dec-2023 21:49
<b>Chloride</b>	<b>16,500</b>		<b>40.0</b>	<b>100</b>	<b>mg/L</b>	200	19-Dec-2023 21:54
<b>Sulfate</b>	<b>57.0</b>		<b>2.00</b>	<b>5.00</b>	<b>mg/L</b>	10	19-Dec-2023 21:49

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-19  
 Collection Date: 11-Dec-2023 11:45

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-03  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: TS			
Benzene	U		0.20	1.0	ug/L	1	15-Dec-2023 23:34
Ethylbenzene	U		0.30	1.0	ug/L	1	15-Dec-2023 23:34
m,p-Xylene	U		0.50	2.0	ug/L	1	15-Dec-2023 23:34
o-Xylene	U		0.30	1.0	ug/L	1	15-Dec-2023 23:34
Toluene	U		0.20	1.0	ug/L	1	15-Dec-2023 23:34
Xylenes, Total	U		0.30	1.0	ug/L	1	15-Dec-2023 23:34
<i>Surr: 1,2-Dichloroethane-d4</i>	105			70-126	%REC	1	15-Dec-2023 23:34
<i>Surr: 4-Bromofluorobenzene</i>	95.2			77-113	%REC	1	15-Dec-2023 23:34
<i>Surr: Dibromofluoromethane</i>	100			77-123	%REC	1	15-Dec-2023 23:34
<i>Surr: Toluene-d8</i>	109			82-127	%REC	1	15-Dec-2023 23:34
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: TS			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	17-Dec-2023 18:33
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	17-Dec-2023 18:33
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	17-Dec-2023 18:33
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	79.7			70-130	%REC	1	17-Dec-2023 18:33
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	88.3			70-130	%REC	1	17-Dec-2023 18:33
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 17-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	19-Dec-2023 15:14
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	19-Dec-2023 15:14
Aliphatics >C16 - C35	U		0.00800	0.00800	mg/L	1	19-Dec-2023 15:14
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	19-Dec-2023 15:14
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	19-Dec-2023 15:14
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	19-Dec-2023 15:14
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	19-Dec-2023 15:14
<i>Surr: 1-Chlorooctadecane</i>	40.9			40-140	%REC	1	19-Dec-2023 15:14
<i>Surr: 2-Bromonaphthalene</i>	84.5			40-140	%REC	1	19-Dec-2023 15:14
<i>Surr: 2-Fluorobiphenyl</i>	84.1			40-140	%REC	1	19-Dec-2023 15:14
<i>Surr: o-Terphenyl</i>	56.9			40-140	%REC	1	19-Dec-2023 15:14

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-19  
 Collection Date: 11-Dec-2023 11:45

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-03  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 16-Dec-2023		Analyst: JC	
Arsenic	0.00111	J	0.000400	0.00200	mg/L	1	19-Dec-2023 23:45
Barium	0.0326		0.00190	0.00400	mg/L	1	19-Dec-2023 23:45
Cadmium	U		0.000200	0.00200	mg/L	1	19-Dec-2023 23:45
Calcium	267		0.680	10.0	mg/L	20	20-Dec-2023 12:47
Chromium	U		0.000400	0.00400	mg/L	1	19-Dec-2023 23:45
Iron	0.657		0.0120	0.200	mg/L	1	19-Dec-2023 23:45
Lead	U		0.000600	0.00200	mg/L	1	19-Dec-2023 23:45
Magnesium	23.7		0.0100	0.200	mg/L	1	19-Dec-2023 23:45
Manganese	0.0462		0.000700	0.00500	mg/L	1	19-Dec-2023 23:45
Nickel	0.00384		0.000600	0.00200	mg/L	1	19-Dec-2023 23:45
Potassium	3.22		0.0180	0.200	mg/L	1	19-Dec-2023 23:45
Selenium	U		0.00110	0.00200	mg/L	1	19-Dec-2023 23:45
Silver	U		0.000200	0.00200	mg/L	1	19-Dec-2023 23:45
Sodium	200		0.280	4.00	mg/L	20	20-Dec-2023 12:47
Strontium	1.36		0.000200	0.00500	mg/L	1	19-Dec-2023 23:45
Vanadium	0.00105	J	0.000600	0.00500	mg/L	1	19-Dec-2023 23:45
Zinc	0.0121		0.00200	0.00400	mg/L	1	19-Dec-2023 23:45
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	20-Dec-2023 12:02
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	15-Dec-2023 14:23
<b>TOTAL DISSOLVED SOLIDS BY SM2540C-2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	1,640		5.00	10.0	mg/L	1	15-Dec-2023 12:30
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	73.5		3.50	5.00	mg/L	1	20-Dec-2023 13:37
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 13:37
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	15-Dec-2023 13:59
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.72	H	0.100	0.100	pH Units	1	20-Dec-2023 13:37
Temp Deg C @pH	17.3	H	0	0	°C	1	20-Dec-2023 13:37
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	19-Dec-2023 22:00
Chloride	221		4.00	10.0	mg/L	20	19-Dec-2023 22:06
Sulfate	1,110		4.00	10.0	mg/L	20	19-Dec-2023 22:06

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-26  
 Collection Date: 11-Dec-2023 13:30

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-04  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: TS			
Benzene	U		0.20	1.0	ug/L	1	15-Dec-2023 23:55
Ethylbenzene	U		0.30	1.0	ug/L	1	15-Dec-2023 23:55
m,p-Xylene	U		0.50	2.0	ug/L	1	15-Dec-2023 23:55
o-Xylene	U		0.30	1.0	ug/L	1	15-Dec-2023 23:55
Toluene	U		0.20	1.0	ug/L	1	15-Dec-2023 23:55
Xylenes, Total	U		0.30	1.0	ug/L	1	15-Dec-2023 23:55
<i>Surr: 1,2-Dichloroethane-d4</i>	104			70-126	%REC	1	15-Dec-2023 23:55
<i>Surr: 4-Bromofluorobenzene</i>	94.0			77-113	%REC	1	15-Dec-2023 23:55
<i>Surr: Dibromofluoromethane</i>	99.0			77-123	%REC	1	15-Dec-2023 23:55
<i>Surr: Toluene-d8</i>	109			82-127	%REC	1	15-Dec-2023 23:55
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: TS			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	17-Dec-2023 19:11
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	17-Dec-2023 19:11
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	17-Dec-2023 19:11
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	76.1			70-130	%REC	1	17-Dec-2023 19:11
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	84.4			70-130	%REC	1	17-Dec-2023 19:11
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 17-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	21-Dec-2023 10:53
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	21-Dec-2023 10:53
Aliphatics >C16 - C35	U		0.00800	0.00800	mg/L	1	21-Dec-2023 10:53
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	21-Dec-2023 10:53
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	21-Dec-2023 10:53
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	21-Dec-2023 10:53
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	21-Dec-2023 10:53
<i>Surr: 1-Chlorooctadecane</i>	79.2			40-140	%REC	1	21-Dec-2023 10:53
<i>Surr: 2-Bromonaphthalene</i>	89.5			40-140	%REC	1	21-Dec-2023 10:53
<i>Surr: 2-Fluorobiphenyl</i>	78.4			40-140	%REC	1	21-Dec-2023 10:53
<i>Surr: o-Terphenyl</i>	72.1			40-140	%REC	1	21-Dec-2023 10:53

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-26  
 Collection Date: 11-Dec-2023 13:30

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-04  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 16-Dec-2023		Analyst: JC	
Arsenic	0.00190	J	0.000400	0.00200	mg/L	1	19-Dec-2023 23:47
Barium	0.504		0.00190	0.00400	mg/L	1	19-Dec-2023 23:47
Cadmium	U		0.000200	0.00200	mg/L	1	19-Dec-2023 23:47
Calcium	10.2		0.0340	0.500	mg/L	1	19-Dec-2023 23:47
Chromium	0.000515	J	0.000400	0.00400	mg/L	1	19-Dec-2023 23:47
Iron	0.146	J	0.0120	0.200	mg/L	1	19-Dec-2023 23:47
Lead	0.000846	J	0.000600	0.00200	mg/L	1	19-Dec-2023 23:47
Magnesium	1.91		0.0100	0.200	mg/L	1	19-Dec-2023 23:47
Manganese	0.0524		0.000700	0.00500	mg/L	1	19-Dec-2023 23:47
Nickel	0.000815	J	0.000600	0.00200	mg/L	1	19-Dec-2023 23:47
Potassium	1.55		0.0180	0.200	mg/L	1	19-Dec-2023 23:47
Selenium	U		0.00110	0.00200	mg/L	1	19-Dec-2023 23:47
Silver	U		0.000200	0.00200	mg/L	1	19-Dec-2023 23:47
Sodium	37.1		0.0140	0.200	mg/L	1	19-Dec-2023 23:47
Strontium	0.153		0.000200	0.00500	mg/L	1	19-Dec-2023 23:47
Vanadium	0.00248	J	0.000600	0.00500	mg/L	1	19-Dec-2023 23:47
Zinc	0.0438		0.00200	0.00400	mg/L	1	19-Dec-2023 23:47
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	20-Dec-2023 12:04
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	15-Dec-2023 14:23
<b>TOTAL DISSOLVED SOLIDS BY SM2540C -2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	140		5.00	10.0	mg/L	1	15-Dec-2023 12:30
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	40.9		3.50	5.00	mg/L	1	20-Dec-2023 13:42
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 13:42
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	15-Dec-2023 13:59
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.44	H	0.100	0.100	pH Units	1	20-Dec-2023 13:42
Temp Deg C @pH	18.5	H	0	0	°C	1	20-Dec-2023 13:42
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	19-Dec-2023 22:12
Chloride	38.3		0.200	0.500	mg/L	1	19-Dec-2023 22:12
Sulfate	21.7		0.200	0.500	mg/L	1	19-Dec-2023 22:12

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-4  
 Collection Date: 11-Dec-2023 15:40

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-05  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: TS			
<b>Benzene</b>	<b>1.1</b>		<b>0.20</b>	<b>1.0</b>	<b>ug/L</b>	1	16-Dec-2023 00:16
Ethylbenzene	U		0.30	1.0	ug/L	1	16-Dec-2023 00:16
m,p-Xylene	U		0.50	2.0	ug/L	1	16-Dec-2023 00:16
o-Xylene	U		0.30	1.0	ug/L	1	16-Dec-2023 00:16
<b>Toluene</b>	<b>0.87</b>	J	<b>0.20</b>	<b>1.0</b>	<b>ug/L</b>	1	16-Dec-2023 00:16
Xylenes, Total	U		0.30	1.0	ug/L	1	16-Dec-2023 00:16
<i>Surr: 1,2-Dichloroethane-d4</i>	106			70-126	%REC	1	16-Dec-2023 00:16
<i>Surr: 4-Bromofluorobenzene</i>	95.7			77-113	%REC	1	16-Dec-2023 00:16
<i>Surr: Dibromofluoromethane</i>	98.5			77-123	%REC	1	16-Dec-2023 00:16
<i>Surr: Toluene-d8</i>	110			82-127	%REC	1	16-Dec-2023 00:16
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: TS			
<b>Aliphatics &gt;C6 - C8</b>	<b>0.0645</b>		<b>0.0100</b>	<b>0.0100</b>	<b>mg/L</b>	1	17-Dec-2023 19:49
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	17-Dec-2023 19:49
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	17-Dec-2023 19:49
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	73.2			70-130	%REC	1	17-Dec-2023 19:49
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	82.4			70-130	%REC	1	17-Dec-2023 19:49
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 17-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	19-Dec-2023 16:12
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	19-Dec-2023 16:12
Aliphatics >C16 - C35	U		0.00800	0.00800	mg/L	1	19-Dec-2023 16:12
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	19-Dec-2023 16:12
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	19-Dec-2023 16:12
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	19-Dec-2023 16:12
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	19-Dec-2023 16:12
<i>Surr: 1-Chlorooctadecane</i>	48.6			40-140	%REC	1	19-Dec-2023 16:12
<i>Surr: 2-Bromonaphthalene</i>	78.3			40-140	%REC	1	19-Dec-2023 16:12
<i>Surr: 2-Fluorobiphenyl</i>	80.8			40-140	%REC	1	19-Dec-2023 16:12
<i>Surr: o-Terphenyl</i>	56.7			40-140	%REC	1	19-Dec-2023 16:12

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-4  
 Collection Date: 11-Dec-2023 15:40

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-05  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 16-Dec-2023		Analyst: JC	
Arsenic	0.00211		0.000400	0.00200	mg/L	1	19-Dec-2023 23:56
Barium	0.201		0.00190	0.00400	mg/L	1	19-Dec-2023 23:56
Cadmium	U		0.000200	0.00200	mg/L	1	19-Dec-2023 23:56
Calcium	175		0.680	10.0	mg/L	20	20-Dec-2023 12:50
Chromium	0.00159	J	0.000400	0.00400	mg/L	1	19-Dec-2023 23:56
Iron	8.23		0.0120	0.200	mg/L	1	19-Dec-2023 23:56
Lead	0.00103	J	0.000600	0.00200	mg/L	1	19-Dec-2023 23:56
Magnesium	42.6		0.0100	0.200	mg/L	1	19-Dec-2023 23:56
Manganese	3.15		0.0140	0.100	mg/L	20	20-Dec-2023 12:50
Nickel	0.00519		0.000600	0.00200	mg/L	1	19-Dec-2023 23:56
Potassium	5.52		0.0180	0.200	mg/L	1	19-Dec-2023 23:56
Selenium	U		0.00110	0.00200	mg/L	1	19-Dec-2023 23:56
Silver	U		0.000200	0.00200	mg/L	1	19-Dec-2023 23:56
Sodium	581		0.280	4.00	mg/L	20	20-Dec-2023 12:50
Strontium	1.21		0.000200	0.00500	mg/L	1	19-Dec-2023 23:56
Vanadium	0.00569		0.000600	0.00500	mg/L	1	19-Dec-2023 23:56
Zinc	0.0186		0.00200	0.00400	mg/L	1	19-Dec-2023 23:56
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	20-Dec-2023 12:06
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	15-Dec-2023 14:23
<b>TOTAL DISSOLVED SOLIDS BY SM2540C-2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	2,940		5.00	10.0	mg/L	1	15-Dec-2023 12:30
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	105		3.50	5.00	mg/L	1	20-Dec-2023 13:48
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 13:48
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	15-Dec-2023 13:59
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	6.93	H	0.100	0.100	pH Units	1	20-Dec-2023 13:48
Temp Deg C @pH	19.5	H	0	0	°C	1	20-Dec-2023 13:48
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	19-Dec-2023 22:30
Chloride	1,140		4.00	10.0	mg/L	20	19-Dec-2023 22:35
Sulfate	531		4.00	10.0	mg/L	20	19-Dec-2023 22:35

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-3  
 Collection Date: 11-Dec-2023 16:30

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-06  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: TS			
Benzene	U		0.20	1.0	ug/L	1	16-Dec-2023 00:37
Ethylbenzene	U		0.30	1.0	ug/L	1	16-Dec-2023 00:37
m,p-Xylene	U		0.50	2.0	ug/L	1	16-Dec-2023 00:37
o-Xylene	U		0.30	1.0	ug/L	1	16-Dec-2023 00:37
Toluene	U		0.20	1.0	ug/L	1	16-Dec-2023 00:37
Xylenes, Total	U		0.30	1.0	ug/L	1	16-Dec-2023 00:37
<i>Surr: 1,2-Dichloroethane-d4</i>	110			70-126	%REC	1	16-Dec-2023 00:37
<i>Surr: 4-Bromofluorobenzene</i>	93.1			77-113	%REC	1	16-Dec-2023 00:37
<i>Surr: Dibromofluoromethane</i>	106			77-123	%REC	1	16-Dec-2023 00:37
<i>Surr: Toluene-d8</i>	109			82-127	%REC	1	16-Dec-2023 00:37
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: TS			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	17-Dec-2023 20:28
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	17-Dec-2023 20:28
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	17-Dec-2023 20:28
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	71.6			70-130	%REC	1	17-Dec-2023 20:28
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	80.5			70-130	%REC	1	17-Dec-2023 20:28
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 17-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	19-Dec-2023 16:40
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	19-Dec-2023 16:40
Aliphatics >C16 - C35	U		0.00800	0.00800	mg/L	1	19-Dec-2023 16:40
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	19-Dec-2023 16:40
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	19-Dec-2023 16:40
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	19-Dec-2023 16:40
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	19-Dec-2023 16:40
<i>Surr: 1-Chlorooctadecane</i>	40.5			40-140	%REC	1	19-Dec-2023 16:40
<i>Surr: 2-Bromonaphthalene</i>	82.6			40-140	%REC	1	19-Dec-2023 16:40
<i>Surr: 2-Fluorobiphenyl</i>	85.4			40-140	%REC	1	19-Dec-2023 16:40
<i>Surr: o-Terphenyl</i>	52.9			40-140	%REC	1	19-Dec-2023 16:40

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-3  
 Collection Date: 11-Dec-2023 16:30

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-06  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 16-Dec-2023		Analyst: JC	
Arsenic	0.00142	J	0.000400	0.00200	mg/L	1	20-Dec-2023 00:01
Barium	0.344		0.00190	0.00400	mg/L	1	20-Dec-2023 00:01
Cadmium	U		0.000200	0.00200	mg/L	1	20-Dec-2023 00:01
Calcium	174		0.0340	0.500	mg/L	1	20-Dec-2023 00:01
Chromium	0.000578	J	0.000400	0.00400	mg/L	1	20-Dec-2023 00:01
Iron	1.06		0.0120	0.200	mg/L	1	20-Dec-2023 00:01
Lead	U		0.000600	0.00200	mg/L	1	20-Dec-2023 00:01
Magnesium	41.8		0.0100	0.200	mg/L	1	20-Dec-2023 00:01
Manganese	0.977		0.000700	0.00500	mg/L	1	20-Dec-2023 00:01
Nickel	0.00838		0.000600	0.00200	mg/L	1	20-Dec-2023 00:01
Potassium	5.28		0.0180	0.200	mg/L	1	20-Dec-2023 00:01
Selenium	U		0.00110	0.00200	mg/L	1	20-Dec-2023 00:01
Silver	U		0.000200	0.00200	mg/L	1	20-Dec-2023 00:01
Sodium	630		0.280	4.00	mg/L	20	20-Dec-2023 13:01
Strontium	1.32		0.000200	0.00500	mg/L	1	20-Dec-2023 00:01
Vanadium	0.00626		0.000600	0.00500	mg/L	1	20-Dec-2023 00:01
Zinc	0.0395		0.00200	0.00400	mg/L	1	20-Dec-2023 00:01
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	20-Dec-2023 12:07
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	15-Dec-2023 14:23
<b>TOTAL DISSOLVED SOLIDS BY SM2540C -2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	2,500		5.00	10.0	mg/L	1	15-Dec-2023 12:30
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	114		3.50	5.00	mg/L	1	20-Dec-2023 13:53
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 13:53
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	15-Dec-2023 13:59
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.41	H	0.100	0.100	pH Units	1	20-Dec-2023 13:53
Temp Deg C @pH	18.9	H	0	0	°C	1	20-Dec-2023 13:53
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	19-Dec-2023 23:11
Chloride	1,110		4.00	10.0	mg/L	20	19-Dec-2023 23:16
Sulfate	473		4.00	10.0	mg/L	20	19-Dec-2023 23:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-24  
 Collection Date: 11-Dec-2023 17:00

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-07  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: TS			
Benzene	3.7		0.20	1.0	ug/L	1	16-Dec-2023 00:58
Ethylbenzene	0.44	J	0.30	1.0	ug/L	1	16-Dec-2023 00:58
m,p-Xylene	U		0.50	2.0	ug/L	1	16-Dec-2023 00:58
o-Xylene	U		0.30	1.0	ug/L	1	16-Dec-2023 00:58
Toluene	5.0		0.20	1.0	ug/L	1	16-Dec-2023 00:58
Xylenes, Total	U		0.30	1.0	ug/L	1	16-Dec-2023 00:58
Surr: 1,2-Dichloroethane-d4	100			70-126	%REC	1	16-Dec-2023 00:58
Surr: 4-Bromofluorobenzene	93.8			77-113	%REC	1	16-Dec-2023 00:58
Surr: Dibromofluoromethane	96.8			77-123	%REC	1	16-Dec-2023 00:58
Surr: Toluene-d8	108			82-127	%REC	1	16-Dec-2023 00:58
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: FT			
Aliphatics >C6 - C8	0.719		0.100	0.100	mg/L	10	19-Dec-2023 01:41
Aliphatics >C8 - C10	U		0.100	0.100	mg/L	10	19-Dec-2023 01:41
Aromatics >C8 - C10	U		0.100	0.100	mg/L	10	19-Dec-2023 01:41
Surr: 2,5-Dibromotoluene (Aliphatic)	74.1			70-130	%REC	10	19-Dec-2023 01:41
Surr: 2,5-Dibromotoluene (Aromatic)	77.0			70-130	%REC	10	19-Dec-2023 01:41
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 17-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	19-Dec-2023 17:09
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	19-Dec-2023 17:09
Aliphatics >C16 - C35	U		0.00800	0.00800	mg/L	1	19-Dec-2023 17:09
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	19-Dec-2023 17:09
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	19-Dec-2023 17:09
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	19-Dec-2023 17:09
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	19-Dec-2023 17:09
Surr: 1-Chlorooctadecane	72.7			40-140	%REC	1	19-Dec-2023 17:09
Surr: 2-Bromonaphthalene	76.7			40-140	%REC	1	19-Dec-2023 17:09
Surr: 2-Fluorobiphenyl	78.7			40-140	%REC	1	19-Dec-2023 17:09
Surr: o-Terphenyl	57.5			40-140	%REC	1	19-Dec-2023 17:09

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-24  
 Collection Date: 11-Dec-2023 17:00

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-07  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 16-Dec-2023		Analyst: JC	
Arsenic	0.00173	J	0.000400	0.00200	mg/L	1	20-Dec-2023 00:03
Barium	0.327		0.00190	0.00400	mg/L	1	20-Dec-2023 00:03
Cadmium	U		0.000200	0.00200	mg/L	1	20-Dec-2023 00:03
Calcium	192		0.680	10.0	mg/L	20	20-Dec-2023 13:04
Chromium	0.00100	J	0.000400	0.00400	mg/L	1	20-Dec-2023 00:03
Iron	2.56		0.0120	0.200	mg/L	1	20-Dec-2023 00:03
Lead	0.000602	J	0.000600	0.00200	mg/L	1	20-Dec-2023 00:03
Magnesium	40.2		0.0100	0.200	mg/L	1	20-Dec-2023 00:03
Manganese	2.22		0.0140	0.100	mg/L	20	20-Dec-2023 13:04
Nickel	0.00410		0.000600	0.00200	mg/L	1	20-Dec-2023 00:03
Potassium	7.04		0.0180	0.200	mg/L	1	20-Dec-2023 00:03
Selenium	U		0.00110	0.00200	mg/L	1	20-Dec-2023 00:03
Silver	U		0.000200	0.00200	mg/L	1	20-Dec-2023 00:03
Sodium	385		0.280	4.00	mg/L	20	20-Dec-2023 13:04
Strontium	1.28		0.000200	0.00500	mg/L	1	20-Dec-2023 00:03
Vanadium	0.00442	J	0.000600	0.00500	mg/L	1	20-Dec-2023 00:03
Zinc	0.0428		0.00200	0.00400	mg/L	1	20-Dec-2023 00:03
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	20-Dec-2023 12:09
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	15-Dec-2023 14:23
<b>TOTAL DISSOLVED SOLIDS BY SM2540C-2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	1,570		5.00	10.0	mg/L	1	15-Dec-2023 12:30
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	197		3.50	5.00	mg/L	1	20-Dec-2023 13:59
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 13:59
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	15-Dec-2023 13:59
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.24	H	0.100	0.100	pH Units	1	20-Dec-2023 13:59
Temp Deg C @pH	19.0	H	0	0	°C	1	20-Dec-2023 13:59
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	19-Dec-2023 23:22
Chloride	905		4.00	10.0	mg/L	20	19-Dec-2023 23:28
Sulfate	492		4.00	10.0	mg/L	20	19-Dec-2023 23:28

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-8  
 Collection Date: 12-Dec-2023 08:30

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-08  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: TS			
Benzene	U		0.20	1.0	ug/L	1	16-Dec-2023 01:19
Ethylbenzene	U		0.30	1.0	ug/L	1	16-Dec-2023 01:19
m,p-Xylene	U		0.50	2.0	ug/L	1	16-Dec-2023 01:19
o-Xylene	U		0.30	1.0	ug/L	1	16-Dec-2023 01:19
Toluene	U		0.20	1.0	ug/L	1	16-Dec-2023 01:19
Xylenes, Total	U		0.30	1.0	ug/L	1	16-Dec-2023 01:19
<i>Surr: 1,2-Dichloroethane-d4</i>	106			70-126	%REC	1	16-Dec-2023 01:19
<i>Surr: 4-Bromofluorobenzene</i>	94.9			77-113	%REC	1	16-Dec-2023 01:19
<i>Surr: Dibromofluoromethane</i>	103			77-123	%REC	1	16-Dec-2023 01:19
<i>Surr: Toluene-d8</i>	109			82-127	%REC	1	16-Dec-2023 01:19
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: TS			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	17-Dec-2023 23:02
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	17-Dec-2023 23:02
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	17-Dec-2023 23:02
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	75.2			70-130	%REC	1	17-Dec-2023 23:02
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	78.4			70-130	%REC	1	17-Dec-2023 23:02
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 17-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	19-Dec-2023 17:38
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	19-Dec-2023 17:38
Aliphatics >C16 - C35	U		0.00800	0.00800	mg/L	1	19-Dec-2023 17:38
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	19-Dec-2023 17:38
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	19-Dec-2023 17:38
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	19-Dec-2023 17:38
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	19-Dec-2023 17:38
<i>Surr: 1-Chlorooctadecane</i>	48.0			40-140	%REC	1	19-Dec-2023 17:38
<i>Surr: 2-Bromonaphthalene</i>	83.5			40-140	%REC	1	19-Dec-2023 17:38
<i>Surr: 2-Fluorobiphenyl</i>	85.6			40-140	%REC	1	19-Dec-2023 17:38
<i>Surr: o-Terphenyl</i>	52.6			40-140	%REC	1	19-Dec-2023 17:38

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-8  
 Collection Date: 12-Dec-2023 08:30

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-08  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 18-Dec-2023		Analyst: MSC	
Arsenic	0.00134	J	0.000400	0.00200	mg/L	1	18-Dec-2023 16:25
Barium	0.388		0.00190	0.00400	mg/L	1	18-Dec-2023 16:25
Cadmium	U		0.000200	0.00200	mg/L	1	18-Dec-2023 16:25
Calcium	140		0.0340	0.500	mg/L	1	18-Dec-2023 16:25
Chromium	0.00238	J	0.000400	0.00400	mg/L	1	18-Dec-2023 16:25
Iron	0.0580	J	0.0120	0.200	mg/L	1	18-Dec-2023 16:25
Lead	U		0.000600	0.00200	mg/L	1	18-Dec-2023 16:25
Magnesium	37.9		0.0100	0.200	mg/L	1	18-Dec-2023 16:25
Manganese	0.146		0.000700	0.00500	mg/L	1	18-Dec-2023 16:25
Nickel	0.00254		0.000600	0.00200	mg/L	1	18-Dec-2023 16:25
Potassium	4.47		0.0180	0.200	mg/L	1	18-Dec-2023 16:25
Selenium	U		0.00110	0.00200	mg/L	1	18-Dec-2023 16:25
Silver	U		0.000200	0.00200	mg/L	1	18-Dec-2023 16:25
Sodium	653		1.40	20.0	mg/L	100	19-Dec-2023 14:51
Strontium	1.15		0.000200	0.00500	mg/L	1	18-Dec-2023 16:25
Vanadium	0.00599		0.000600	0.00500	mg/L	1	18-Dec-2023 16:25
Zinc	0.0823		0.00200	0.00400	mg/L	1	18-Dec-2023 16:25
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	20-Dec-2023 12:11
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	15-Dec-2023 14:23
<b>TOTAL DISSOLVED SOLIDS BY SM2540C-2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	2,770		5.00	10.0	mg/L	1	15-Dec-2023 13:00
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	144		3.50	5.00	mg/L	1	20-Dec-2023 14:05
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 14:05
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	15-Dec-2023 13:59
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.84	H	0.100	0.100	pH Units	1	20-Dec-2023 14:05
Temp Deg C @pH	19.4	H	0	0	°C	1	20-Dec-2023 14:05
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	19-Dec-2023 23:34
Chloride	1,180		4.00	10.0	mg/L	20	19-Dec-2023 23:40
Sulfate	388		4.00	10.0	mg/L	20	19-Dec-2023 23:40

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-12  
 Collection Date: 12-Dec-2023 10:00

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-09  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: TS			
Benzene	U		0.20	1.0	ug/L	1	16-Dec-2023 01:40
Ethylbenzene	U		0.30	1.0	ug/L	1	16-Dec-2023 01:40
m,p-Xylene	U		0.50	2.0	ug/L	1	16-Dec-2023 01:40
o-Xylene	U		0.30	1.0	ug/L	1	16-Dec-2023 01:40
Toluene	U		0.20	1.0	ug/L	1	16-Dec-2023 01:40
Xylenes, Total	U		0.30	1.0	ug/L	1	16-Dec-2023 01:40
<i>Surr: 1,2-Dichloroethane-d4</i>	109			70-126	%REC	1	16-Dec-2023 01:40
<i>Surr: 4-Bromofluorobenzene</i>	94.4			77-113	%REC	1	16-Dec-2023 01:40
<i>Surr: Dibromofluoromethane</i>	104			77-123	%REC	1	16-Dec-2023 01:40
<i>Surr: Toluene-d8</i>	108			82-127	%REC	1	16-Dec-2023 01:40
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: TS			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	17-Dec-2023 23:41
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	17-Dec-2023 23:41
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	17-Dec-2023 23:41
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	76.0			70-130	%REC	1	17-Dec-2023 23:41
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	79.0			70-130	%REC	1	17-Dec-2023 23:41
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 17-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	20-Dec-2023 11:15
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	20-Dec-2023 11:15
Aliphatics >C16 - C35	U		0.00800	0.00800	mg/L	1	20-Dec-2023 11:15
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	20-Dec-2023 11:15
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	20-Dec-2023 11:15
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	20-Dec-2023 11:15
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	20-Dec-2023 11:15
<i>Surr: 1-Chlorooctadecane</i>	43.9			40-140	%REC	1	20-Dec-2023 11:15
<i>Surr: 2-Bromonaphthalene</i>	73.7			40-140	%REC	1	20-Dec-2023 11:15
<i>Surr: 2-Fluorobiphenyl</i>	75.5			40-140	%REC	1	20-Dec-2023 11:15
<i>Surr: o-Terphenyl</i>	45.8			40-140	%REC	1	20-Dec-2023 11:15

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-12  
 Collection Date: 12-Dec-2023 10:00

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-09  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 18-Dec-2023		Analyst: MSC	
Arsenic	0.00135	J	0.000400	0.00200	mg/L	1	18-Dec-2023 16:27
Barium	0.411		0.00190	0.00400	mg/L	1	18-Dec-2023 16:27
Cadmium	U		0.000200	0.00200	mg/L	1	18-Dec-2023 16:27
Calcium	151		0.0340	0.500	mg/L	1	18-Dec-2023 16:27
Chromium	0.00236	J	0.000400	0.00400	mg/L	1	18-Dec-2023 16:27
Iron	0.0689	J	0.0120	0.200	mg/L	1	18-Dec-2023 16:27
Lead	U		0.000600	0.00200	mg/L	1	18-Dec-2023 16:27
Magnesium	41.4		0.0100	0.200	mg/L	1	18-Dec-2023 16:27
Manganese	0.159		0.000700	0.00500	mg/L	1	18-Dec-2023 16:27
Nickel	0.00255		0.000600	0.00200	mg/L	1	18-Dec-2023 16:27
Potassium	4.93		0.0180	0.200	mg/L	1	18-Dec-2023 16:27
Selenium	U		0.00110	0.00200	mg/L	1	18-Dec-2023 16:27
Silver	U		0.000200	0.00200	mg/L	1	18-Dec-2023 16:27
Sodium	693		1.40	20.0	mg/L	100	19-Dec-2023 15:10
Strontium	1.25		0.000200	0.00500	mg/L	1	18-Dec-2023 16:27
Vanadium	0.00592		0.000600	0.00500	mg/L	1	18-Dec-2023 16:27
Zinc	0.0134		0.00200	0.00400	mg/L	1	18-Dec-2023 16:27
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	20-Dec-2023 14:16
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	15-Dec-2023 14:23
<b>TOTAL DISSOLVED SOLIDS BY SM2540C-2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	2,510		5.00	10.0	mg/L	1	15-Dec-2023 13:00
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	148		3.50	5.00	mg/L	1	20-Dec-2023 14:22
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 14:22
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	15-Dec-2023 13:59
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.87	H	0.100	0.100	pH Units	1	20-Dec-2023 14:22
Temp Deg C @pH	18.3	H	0	0	°C	1	20-Dec-2023 14:22
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	19-Dec-2023 23:46
Chloride	1,170		4.00	10.0	mg/L	20	19-Dec-2023 23:51
Sulfate	385		4.00	10.0	mg/L	20	19-Dec-2023 23:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-7  
 Collection Date: 12-Dec-2023 11:20

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-10  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: TS			
Benzene	U		0.20	1.0	ug/L	1	16-Dec-2023 02:01
Ethylbenzene	U		0.30	1.0	ug/L	1	16-Dec-2023 02:01
m,p-Xylene	U		0.50	2.0	ug/L	1	16-Dec-2023 02:01
o-Xylene	U		0.30	1.0	ug/L	1	16-Dec-2023 02:01
Toluene	U		0.20	1.0	ug/L	1	16-Dec-2023 02:01
Xylenes, Total	U		0.30	1.0	ug/L	1	16-Dec-2023 02:01
<i>Surr: 1,2-Dichloroethane-d4</i>	105			70-126	%REC	1	16-Dec-2023 02:01
<i>Surr: 4-Bromofluorobenzene</i>	96.7			77-113	%REC	1	16-Dec-2023 02:01
<i>Surr: Dibromofluoromethane</i>	99.9			77-123	%REC	1	16-Dec-2023 02:01
<i>Surr: Toluene-d8</i>	109			82-127	%REC	1	16-Dec-2023 02:01
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: TS			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	18-Dec-2023 00:20
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 00:20
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 00:20
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	75.6			70-130	%REC	1	18-Dec-2023 00:20
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	76.6			70-130	%REC	1	18-Dec-2023 00:20
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 17-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	19-Dec-2023 18:35
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	19-Dec-2023 18:35
<b>Aliphatics &gt;C16 - C35</b>	<b>0.0207</b>		<b>0.00800</b>	<b>0.00800</b>	<b>mg/L</b>	1	19-Dec-2023 18:35
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	19-Dec-2023 18:35
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	19-Dec-2023 18:35
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	19-Dec-2023 18:35
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	19-Dec-2023 18:35
<i>Surr: 1-Chlorooctadecane</i>	51.0			40-140	%REC	1	19-Dec-2023 18:35
<i>Surr: 2-Bromonaphthalene</i>	84.8			40-140	%REC	1	19-Dec-2023 18:35
<i>Surr: 2-Fluorobiphenyl</i>	87.3			40-140	%REC	1	19-Dec-2023 18:35
<i>Surr: o-Terphenyl</i>	62.0			40-140	%REC	1	19-Dec-2023 18:35

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-7  
 Collection Date: 12-Dec-2023 11:20

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-10  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 18-Dec-2023		Analyst: MSC	
Arsenic	0.00129	J	0.000400	0.00200	mg/L	1	18-Dec-2023 16:29
Barium	0.355		0.00190	0.00400	mg/L	1	18-Dec-2023 16:29
Cadmium	U		0.000200	0.00200	mg/L	1	18-Dec-2023 16:29
Calcium	132		0.0340	0.500	mg/L	1	18-Dec-2023 16:29
Chromium	0.00179	J	0.000400	0.00400	mg/L	1	18-Dec-2023 16:29
Iron	0.0657	J	0.0120	0.200	mg/L	1	18-Dec-2023 16:29
Lead	U		0.000600	0.00200	mg/L	1	18-Dec-2023 16:29
Magnesium	35.8		0.0100	0.200	mg/L	1	18-Dec-2023 16:29
Manganese	0.194		0.000700	0.00500	mg/L	1	18-Dec-2023 16:29
Nickel	0.00255		0.000600	0.00200	mg/L	1	18-Dec-2023 16:29
Potassium	4.30		0.0180	0.200	mg/L	1	18-Dec-2023 16:29
Selenium	U		0.00110	0.00200	mg/L	1	18-Dec-2023 16:29
Silver	U		0.000200	0.00200	mg/L	1	18-Dec-2023 16:29
Sodium	592		1.40	20.0	mg/L	100	19-Dec-2023 15:12
Strontium	1.07		0.000200	0.00500	mg/L	1	18-Dec-2023 16:29
Vanadium	0.00568		0.000600	0.00500	mg/L	1	18-Dec-2023 16:29
Zinc	0.00463		0.00200	0.00400	mg/L	1	18-Dec-2023 16:29
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	20-Dec-2023 14:18
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	15-Dec-2023 14:23
<b>TOTAL DISSOLVED SOLIDS BY SM2540C-2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	2,530		5.00	10.0	mg/L	1	15-Dec-2023 13:00
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	144		3.50	5.00	mg/L	1	20-Dec-2023 14:27
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 14:27
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	15-Dec-2023 13:59
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.83	H	0.100	0.100	pH Units	1	20-Dec-2023 14:27
Temp Deg C @pH	18.1	H	0	0	°C	1	20-Dec-2023 14:27
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	19-Dec-2023 23:57
Chloride	1,170		4.00	10.0	mg/L	20	20-Dec-2023 00:03
Sulfate	386		4.00	10.0	mg/L	20	20-Dec-2023 00:03

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-6  
 Collection Date: 12-Dec-2023 13:15

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-11  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: TS			
Benzene	U		0.20	1.0	ug/L	1	16-Dec-2023 02:22
Ethylbenzene	U		0.30	1.0	ug/L	1	16-Dec-2023 02:22
m,p-Xylene	U		0.50	2.0	ug/L	1	16-Dec-2023 02:22
o-Xylene	U		0.30	1.0	ug/L	1	16-Dec-2023 02:22
Toluene	U		0.20	1.0	ug/L	1	16-Dec-2023 02:22
Xylenes, Total	U		0.30	1.0	ug/L	1	16-Dec-2023 02:22
<i>Surr: 1,2-Dichloroethane-d4</i>	103			70-126	%REC	1	16-Dec-2023 02:22
<i>Surr: 4-Bromofluorobenzene</i>	92.8			77-113	%REC	1	16-Dec-2023 02:22
<i>Surr: Dibromofluoromethane</i>	98.1			77-123	%REC	1	16-Dec-2023 02:22
<i>Surr: Toluene-d8</i>	109			82-127	%REC	1	16-Dec-2023 02:22
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: TS			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	18-Dec-2023 00:58
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 00:58
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 00:58
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	78.0			70-130	%REC	1	18-Dec-2023 00:58
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	76.2			70-130	%REC	1	18-Dec-2023 00:58
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 17-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	19-Dec-2023 19:04
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	19-Dec-2023 19:04
<b>Aliphatics &gt;C16 - C35</b>	<b>0.0288</b>		<b>0.00800</b>	<b>0.00800</b>	<b>mg/L</b>	1	19-Dec-2023 19:04
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	19-Dec-2023 19:04
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	19-Dec-2023 19:04
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	19-Dec-2023 19:04
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	19-Dec-2023 19:04
<i>Surr: 1-Chlorooctadecane</i>	52.0			40-140	%REC	1	19-Dec-2023 19:04
<i>Surr: 2-Bromonaphthalene</i>	80.7			40-140	%REC	1	19-Dec-2023 19:04
<i>Surr: 2-Fluorobiphenyl</i>	82.3			40-140	%REC	1	19-Dec-2023 19:04
<i>Surr: o-Terphenyl</i>	56.5			40-140	%REC	1	19-Dec-2023 19:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-6  
 Collection Date: 12-Dec-2023 13:15

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-11  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 18-Dec-2023		Analyst: MSC	
Arsenic	0.00134	J	0.000400	0.00200	mg/L	1	18-Dec-2023 16:31
Barium	0.370		0.00190	0.00400	mg/L	1	18-Dec-2023 16:31
Cadmium	U		0.000200	0.00200	mg/L	1	18-Dec-2023 16:31
Calcium	142		0.0340	0.500	mg/L	1	18-Dec-2023 16:31
Chromium	0.00196	J	0.000400	0.00400	mg/L	1	18-Dec-2023 16:31
Iron	0.0757	J	0.0120	0.200	mg/L	1	18-Dec-2023 16:31
Lead	U		0.000600	0.00200	mg/L	1	18-Dec-2023 16:31
Magnesium	38.8		0.0100	0.200	mg/L	1	18-Dec-2023 16:31
Manganese	0.190		0.000700	0.00500	mg/L	1	18-Dec-2023 16:31
Nickel	0.00265		0.000600	0.00200	mg/L	1	18-Dec-2023 16:31
Potassium	4.71		0.0180	0.200	mg/L	1	18-Dec-2023 16:31
Selenium	U		0.00110	0.00200	mg/L	1	18-Dec-2023 16:31
Silver	U		0.000200	0.00200	mg/L	1	18-Dec-2023 16:31
Sodium	649		1.40	20.0	mg/L	100	19-Dec-2023 15:14
Strontium	1.14		0.000200	0.00500	mg/L	1	18-Dec-2023 16:31
Vanadium	0.00593		0.000600	0.00500	mg/L	1	18-Dec-2023 16:31
Zinc	0.00469		0.00200	0.00400	mg/L	1	18-Dec-2023 16:31
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	20-Dec-2023 14:20
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	15-Dec-2023 14:23
<b>TOTAL DISSOLVED SOLIDS BY SM2540C-2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	2,810		5.00	10.0	mg/L	1	15-Dec-2023 13:00
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	146		3.50	5.00	mg/L	1	20-Dec-2023 14:33
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 14:33
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	15-Dec-2023 13:59
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.96	H	0.100	0.100	pH Units	1	20-Dec-2023 14:33
Temp Deg C @pH	19.3	H	0	0	°C	1	20-Dec-2023 14:33
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	20-Dec-2023 00:38
Chloride	1,150		4.00	10.0	mg/L	20	20-Dec-2023 00:44
Sulfate	386		4.00	10.0	mg/L	20	20-Dec-2023 00:44

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-25  
 Collection Date: 12-Dec-2023 13:50

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-12  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: TS			
Benzene	U		0.20	1.0	ug/L	1	16-Dec-2023 02:43
Ethylbenzene	U		0.30	1.0	ug/L	1	16-Dec-2023 02:43
m,p-Xylene	U		0.50	2.0	ug/L	1	16-Dec-2023 02:43
o-Xylene	U		0.30	1.0	ug/L	1	16-Dec-2023 02:43
Toluene	U		0.20	1.0	ug/L	1	16-Dec-2023 02:43
Xylenes, Total	U		0.30	1.0	ug/L	1	16-Dec-2023 02:43
<i>Surr: 1,2-Dichloroethane-d4</i>	103			70-126	%REC	1	16-Dec-2023 02:43
<i>Surr: 4-Bromofluorobenzene</i>	95.5			77-113	%REC	1	16-Dec-2023 02:43
<i>Surr: Dibromofluoromethane</i>	100			77-123	%REC	1	16-Dec-2023 02:43
<i>Surr: Toluene-d8</i>	111			82-127	%REC	1	16-Dec-2023 02:43
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: TS			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	18-Dec-2023 01:37
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 01:37
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 01:37
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	78.3			70-130	%REC	1	18-Dec-2023 01:37
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	80.5			70-130	%REC	1	18-Dec-2023 01:37
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 17-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	20-Dec-2023 13:38
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	20-Dec-2023 13:38
Aliphatics >C16 - C35	U		0.00800	0.00800	mg/L	1	20-Dec-2023 13:38
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	20-Dec-2023 13:38
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	20-Dec-2023 13:38
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	20-Dec-2023 13:38
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	20-Dec-2023 13:38
<i>Surr: 1-Chlorooctadecane</i>	43.0			40-140	%REC	1	20-Dec-2023 13:38
<i>Surr: 2-Bromonaphthalene</i>	87.1			40-140	%REC	1	20-Dec-2023 13:38
<i>Surr: 2-Fluorobiphenyl</i>	88.7			40-140	%REC	1	20-Dec-2023 13:38
<i>Surr: o-Terphenyl</i>	50.8			40-140	%REC	1	20-Dec-2023 13:38

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-25  
 Collection Date: 12-Dec-2023 13:50

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-12  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 18-Dec-2023		Analyst: MSC	
Arsenic	0.00143	J	0.000400	0.00200	mg/L	1	18-Dec-2023 16:33
Barium	0.386		0.00190	0.00400	mg/L	1	18-Dec-2023 16:33
Cadmium	U		0.000200	0.00200	mg/L	1	18-Dec-2023 16:33
Calcium	151		0.0340	0.500	mg/L	1	18-Dec-2023 16:33
Chromium	0.00224	J	0.000400	0.00400	mg/L	1	18-Dec-2023 16:33
Iron	0.0452	J	0.0120	0.200	mg/L	1	18-Dec-2023 16:33
Lead	U		0.000600	0.00200	mg/L	1	18-Dec-2023 16:33
Magnesium	40.6		0.0100	0.200	mg/L	1	18-Dec-2023 16:33
Manganese	0.181		0.000700	0.00500	mg/L	1	18-Dec-2023 16:33
Nickel	0.00249		0.000600	0.00200	mg/L	1	18-Dec-2023 16:33
Potassium	4.87		0.0180	0.200	mg/L	1	18-Dec-2023 16:33
Selenium	U		0.00110	0.00200	mg/L	1	18-Dec-2023 16:33
Silver	U		0.000200	0.00200	mg/L	1	18-Dec-2023 16:33
Sodium	685		1.40	20.0	mg/L	100	19-Dec-2023 15:16
Strontium	1.22		0.000200	0.00500	mg/L	1	18-Dec-2023 16:33
Vanadium	0.00580		0.000600	0.00500	mg/L	1	18-Dec-2023 16:33
Zinc	0.00468		0.00200	0.00400	mg/L	1	18-Dec-2023 16:33
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	20-Dec-2023 14:22
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	15-Dec-2023 14:23
<b>TOTAL DISSOLVED SOLIDS BY SM2540C-2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	2,600		5.00	10.0	mg/L	1	15-Dec-2023 13:00
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	148		3.50	5.00	mg/L	1	20-Dec-2023 14:38
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 14:38
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	15-Dec-2023 13:59
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.98	H	0.100	0.100	pH Units	1	20-Dec-2023 14:38
Temp Deg C @pH	20.0	H	0	0	°C	1	20-Dec-2023 14:38
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	20-Dec-2023 00:50
Chloride	1,160		4.00	10.0	mg/L	20	20-Dec-2023 00:56
Sulfate	391		4.00	10.0	mg/L	20	20-Dec-2023 00:56

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-23  
 Collection Date: 12-Dec-2023 14:10

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-13  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: TS			
Benzene	U		0.20	1.0	ug/L	1	16-Dec-2023 03:04
Ethylbenzene	U		0.30	1.0	ug/L	1	16-Dec-2023 03:04
m,p-Xylene	U		0.50	2.0	ug/L	1	16-Dec-2023 03:04
o-Xylene	U		0.30	1.0	ug/L	1	16-Dec-2023 03:04
Toluene	U		0.20	1.0	ug/L	1	16-Dec-2023 03:04
Xylenes, Total	U		0.30	1.0	ug/L	1	16-Dec-2023 03:04
<i>Surr: 1,2-Dichloroethane-d4</i>	108			70-126	%REC	1	16-Dec-2023 03:04
<i>Surr: 4-Bromofluorobenzene</i>	93.7			77-113	%REC	1	16-Dec-2023 03:04
<i>Surr: Dibromofluoromethane</i>	102			77-123	%REC	1	16-Dec-2023 03:04
<i>Surr: Toluene-d8</i>	109			82-127	%REC	1	16-Dec-2023 03:04
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: TS			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	18-Dec-2023 02:15
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 02:15
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 02:15
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	75.3			70-130	%REC	1	18-Dec-2023 02:15
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	84.9			70-130	%REC	1	18-Dec-2023 02:15
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 17-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	19-Dec-2023 21:27
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	19-Dec-2023 21:27
<b>Aliphatics &gt;C16 - C35</b>	<b>0.0197</b>		<b>0.00800</b>	<b>0.00800</b>	<b>mg/L</b>	1	19-Dec-2023 21:27
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	19-Dec-2023 21:27
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	19-Dec-2023 21:27
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	19-Dec-2023 21:27
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	19-Dec-2023 21:27
<i>Surr: 1-Chlorooctadecane</i>	52.4			40-140	%REC	1	19-Dec-2023 21:27
<i>Surr: 2-Bromonaphthalene</i>	77.2			40-140	%REC	1	19-Dec-2023 21:27
<i>Surr: 2-Fluorobiphenyl</i>	78.9			40-140	%REC	1	19-Dec-2023 21:27
<i>Surr: o-Terphenyl</i>	50.6			40-140	%REC	1	19-Dec-2023 21:27

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-23  
 Collection Date: 12-Dec-2023 14:10

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-13  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 18-Dec-2023		Analyst: MSC	
Arsenic	0.00142	J	0.000400	0.00200	mg/L	1	18-Dec-2023 16:35
Barium	0.393		0.00190	0.00400	mg/L	1	18-Dec-2023 16:35
Cadmium	U		0.000200	0.00200	mg/L	1	18-Dec-2023 16:35
Calcium	149		0.0340	0.500	mg/L	1	18-Dec-2023 16:35
Chromium	0.00248	J	0.000400	0.00400	mg/L	1	18-Dec-2023 16:35
Iron	0.0799	J	0.0120	0.200	mg/L	1	18-Dec-2023 16:35
Lead	U		0.000600	0.00200	mg/L	1	18-Dec-2023 16:35
Magnesium	40.5		0.0100	0.200	mg/L	1	18-Dec-2023 16:35
Manganese	0.216		0.000700	0.00500	mg/L	1	18-Dec-2023 16:35
Nickel	0.00277		0.000600	0.00200	mg/L	1	18-Dec-2023 16:35
Potassium	4.90		0.0180	0.200	mg/L	1	18-Dec-2023 16:35
Selenium	U		0.00110	0.00200	mg/L	1	18-Dec-2023 16:35
Silver	U		0.000200	0.00200	mg/L	1	18-Dec-2023 16:35
Sodium	661		1.40	20.0	mg/L	100	19-Dec-2023 15:18
Strontium	1.20		0.000200	0.00500	mg/L	1	18-Dec-2023 16:35
Vanadium	0.00612		0.000600	0.00500	mg/L	1	18-Dec-2023 16:35
Zinc	0.00868		0.00200	0.00400	mg/L	1	18-Dec-2023 16:35
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	20-Dec-2023 14:23
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	15-Dec-2023 14:23
<b>TOTAL DISSOLVED SOLIDS BY SM2540C-2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	2,580		5.00	10.0	mg/L	1	15-Dec-2023 13:00
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	146		3.50	5.00	mg/L	1	20-Dec-2023 15:13
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 15:13
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	15-Dec-2023 13:59
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.89	H	0.100	0.100	pH Units	1	20-Dec-2023 15:13
Temp Deg C @pH	19.3	H	0	0	°C	1	20-Dec-2023 15:13
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	20-Dec-2023 01:02
Chloride	1,160		4.00	10.0	mg/L	20	20-Dec-2023 01:07
Sulfate	387		4.00	10.0	mg/L	20	20-Dec-2023 01:07

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: 7A-BS  
 Collection Date: 11-Dec-2023 11:00

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-14  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: TS			
Benzene	0.59	J	0.20	1.0	ug/L	1	16-Dec-2023 03:25
Ethylbenzene	2.0		0.30	1.0	ug/L	1	16-Dec-2023 03:25
m,p-Xylene	2.4		0.50	2.0	ug/L	1	16-Dec-2023 03:25
o-Xylene	0.52	J	0.30	1.0	ug/L	1	16-Dec-2023 03:25
Toluene	1.8		0.20	1.0	ug/L	1	16-Dec-2023 03:25
Xylenes, Total	2.9		0.30	1.0	ug/L	1	16-Dec-2023 03:25
Surr: 1,2-Dichloroethane-d4	106			70-126	%REC	1	16-Dec-2023 03:25
Surr: 4-Bromofluorobenzene	92.9			77-113	%REC	1	16-Dec-2023 03:25
Surr: Dibromofluoromethane	98.5			77-123	%REC	1	16-Dec-2023 03:25
Surr: Toluene-d8	108			82-127	%REC	1	16-Dec-2023 03:25
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: TS			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	18-Dec-2023 02:54
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 02:54
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 02:54
Surr: 2,5-Dibromotoluene (Aliphatic)	78.3			70-130	%REC	1	18-Dec-2023 02:54
Surr: 2,5-Dibromotoluene (Aromatic)	82.0			70-130	%REC	1	18-Dec-2023 02:54
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 17-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	19-Dec-2023 21:55
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	19-Dec-2023 21:55
<b>Aliphatics &gt;C16 - C35</b>	<b>0.0217</b>		<b>0.00800</b>	<b>0.00800</b>	<b>mg/L</b>	1	19-Dec-2023 21:55
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	19-Dec-2023 21:55
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	19-Dec-2023 21:55
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	19-Dec-2023 21:55
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	19-Dec-2023 21:55
Surr: 1-Chlorooctadecane	62.6			40-140	%REC	1	19-Dec-2023 21:55
Surr: 2-Bromonaphthalene	79.9			40-140	%REC	1	19-Dec-2023 21:55
Surr: 2-Fluorobiphenyl	81.4			40-140	%REC	1	19-Dec-2023 21:55
Surr: o-Terphenyl	44.0			40-140	%REC	1	19-Dec-2023 21:55

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: 7A-BS  
 Collection Date: 11-Dec-2023 11:00

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-14  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 18-Dec-2023		Analyst: MSC	
Arsenic	0.00192	J	0.000400	0.00200	mg/L	1	18-Dec-2023 16:37
Barium	0.133		0.00190	0.00400	mg/L	1	18-Dec-2023 16:37
Cadmium	0.000664	J	0.000200	0.00200	mg/L	1	18-Dec-2023 16:37
Calcium	29.8		0.0340	0.500	mg/L	1	18-Dec-2023 16:37
Chromium	0.00218	J	0.000400	0.00400	mg/L	1	18-Dec-2023 16:37
Iron	0.267		0.0120	0.200	mg/L	1	18-Dec-2023 16:37
Lead	0.00251		0.000600	0.00200	mg/L	1	18-Dec-2023 16:37
Magnesium	2.29		0.0100	0.200	mg/L	1	18-Dec-2023 16:37
Manganese	0.0205		0.000700	0.00500	mg/L	1	18-Dec-2023 16:37
Nickel	0.00330		0.000600	0.00200	mg/L	1	18-Dec-2023 16:37
Potassium	1.42		0.0180	0.200	mg/L	1	18-Dec-2023 16:37
Selenium	U		0.00110	0.00200	mg/L	1	18-Dec-2023 16:37
Silver	U		0.000200	0.00200	mg/L	1	18-Dec-2023 16:37
Sodium	6.20		0.0140	0.200	mg/L	1	18-Dec-2023 16:37
Strontium	0.186		0.000200	0.00500	mg/L	1	18-Dec-2023 16:37
Vanadium	0.00830		0.000600	0.00500	mg/L	1	18-Dec-2023 16:37
Zinc	0.209		0.00200	0.00400	mg/L	1	18-Dec-2023 16:37
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	20-Dec-2023 14:25
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	15-Dec-2023 14:23
<b>TOTAL DISSOLVED SOLIDS BY SM2540C -2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	70.0		5.00	10.0	mg/L	1	18-Dec-2023 12:27
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	67.3		3.50	5.00	mg/L	1	20-Dec-2023 15:18
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 15:18
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	15-Dec-2023 13:59
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.82	H	0.100	0.100	pH Units	1	20-Dec-2023 15:18
Temp Deg C @pH	19.2	H	0	0	°C	1	20-Dec-2023 15:18
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	20-Dec-2023 01:13
Chloride	5.60		0.200	0.500	mg/L	1	20-Dec-2023 01:13
Sulfate	13.3		0.200	0.500	mg/L	1	20-Dec-2023 01:13

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-13  
 Collection Date: 13-Dec-2023 09:15

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-15  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: TS			
Benzene	U		0.20	1.0	ug/L	1	16-Dec-2023 03:46
Ethylbenzene	U		0.30	1.0	ug/L	1	16-Dec-2023 03:46
m,p-Xylene	U		0.50	2.0	ug/L	1	16-Dec-2023 03:46
o-Xylene	U		0.30	1.0	ug/L	1	16-Dec-2023 03:46
Toluene	U		0.20	1.0	ug/L	1	16-Dec-2023 03:46
Xylenes, Total	U		0.30	1.0	ug/L	1	16-Dec-2023 03:46
<i>Surr: 1,2-Dichloroethane-d4</i>	104			70-126	%REC	1	16-Dec-2023 03:46
<i>Surr: 4-Bromofluorobenzene</i>	89.0			77-113	%REC	1	16-Dec-2023 03:46
<i>Surr: Dibromofluoromethane</i>	95.5			77-123	%REC	1	16-Dec-2023 03:46
<i>Surr: Toluene-d8</i>	107			82-127	%REC	1	16-Dec-2023 03:46
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: TS			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	18-Dec-2023 03:33
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 03:33
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 03:33
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	77.4			70-130	%REC	1	18-Dec-2023 03:33
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	80.3			70-130	%REC	1	18-Dec-2023 03:33
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 17-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	19-Dec-2023 22:24
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	19-Dec-2023 22:24
Aliphatics >C16 - C35	U		0.00800	0.00800	mg/L	1	19-Dec-2023 22:24
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	19-Dec-2023 22:24
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	19-Dec-2023 22:24
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	19-Dec-2023 22:24
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	19-Dec-2023 22:24
<i>Surr: 1-Chlorooctadecane</i>	58.6			40-140	%REC	1	19-Dec-2023 22:24
<i>Surr: 2-Bromonaphthalene</i>	79.2			40-140	%REC	1	19-Dec-2023 22:24
<i>Surr: 2-Fluorobiphenyl</i>	81.1			40-140	%REC	1	19-Dec-2023 22:24
<i>Surr: o-Terphenyl</i>	59.5			40-140	%REC	1	19-Dec-2023 22:24

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-13  
 Collection Date: 13-Dec-2023 09:15

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-15  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 18-Dec-2023		Analyst: MSC	
Arsenic	0.00152	J	0.000400	0.00200	mg/L	1	18-Dec-2023 16:39
Barium	0.407		0.00190	0.00400	mg/L	1	18-Dec-2023 16:39
Cadmium	U		0.000200	0.00200	mg/L	1	18-Dec-2023 16:39
Calcium	152		0.0340	0.500	mg/L	1	18-Dec-2023 16:39
Chromium	0.00260	J	0.000400	0.00400	mg/L	1	18-Dec-2023 16:39
Iron	0.0712	J	0.0120	0.200	mg/L	1	18-Dec-2023 16:39
Lead	U		0.000600	0.00200	mg/L	1	18-Dec-2023 16:39
Magnesium	41.0		0.0100	0.200	mg/L	1	18-Dec-2023 16:39
Manganese	0.134		0.000700	0.00500	mg/L	1	18-Dec-2023 16:39
Nickel	0.00340		0.000600	0.00200	mg/L	1	18-Dec-2023 16:39
Potassium	4.85		0.0180	0.200	mg/L	1	18-Dec-2023 16:39
Selenium	U		0.00110	0.00200	mg/L	1	18-Dec-2023 16:39
Silver	U		0.000200	0.00200	mg/L	1	18-Dec-2023 16:39
Sodium	626		1.40	20.0	mg/L	100	19-Dec-2023 15:55
Strontium	1.24		0.000200	0.00500	mg/L	1	18-Dec-2023 16:39
Vanadium	0.00506		0.000600	0.00500	mg/L	1	18-Dec-2023 16:39
Zinc	0.00759		0.00200	0.00400	mg/L	1	18-Dec-2023 16:39
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	20-Dec-2023 14:27
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	15-Dec-2023 14:23
<b>TOTAL DISSOLVED SOLIDS BY SM2540C-2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	1,970		5.00	10.0	mg/L	1	18-Dec-2023 12:27
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	144		3.50	5.00	mg/L	1	20-Dec-2023 15:24
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 15:24
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	15-Dec-2023 13:59
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.85	H	0.100	0.100	pH Units	1	20-Dec-2023 15:24
Temp Deg C @pH	20.1	H	0	0	°C	1	20-Dec-2023 15:24
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	20-Dec-2023 01:19
Chloride	1,170		4.00	10.0	mg/L	20	20-Dec-2023 01:25
Sulfate	391		4.00	10.0	mg/L	20	20-Dec-2023 01:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-14  
 Collection Date: 13-Dec-2023 09:30

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-16  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: FT			
Benzene	U		0.20	1.0	ug/L	1	20-Dec-2023 23:54
Ethylbenzene	U		0.30	1.0	ug/L	1	20-Dec-2023 23:54
m,p-Xylene	U		0.50	2.0	ug/L	1	20-Dec-2023 23:54
o-Xylene	U		0.30	1.0	ug/L	1	20-Dec-2023 23:54
Toluene	U		0.20	1.0	ug/L	1	20-Dec-2023 23:54
Xylenes, Total	U		0.30	1.0	ug/L	1	20-Dec-2023 23:54
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>89.0</i>			<i>70-126</i>	<i>%REC</i>	<i>1</i>	<i>20-Dec-2023 23:54</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>102</i>			<i>77-113</i>	<i>%REC</i>	<i>1</i>	<i>20-Dec-2023 23:54</i>
<i>Surr: Dibromofluoromethane</i>	<i>83.2</i>			<i>77-123</i>	<i>%REC</i>	<i>1</i>	<i>20-Dec-2023 23:54</i>
<i>Surr: Toluene-d8</i>	<i>103</i>			<i>82-127</i>	<i>%REC</i>	<i>1</i>	<i>20-Dec-2023 23:54</i>
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: TS			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	18-Dec-2023 04:12
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 04:12
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 04:12
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	<i>77.4</i>			<i>70-130</i>	<i>%REC</i>	<i>1</i>	<i>18-Dec-2023 04:12</i>
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	<i>80.9</i>			<i>70-130</i>	<i>%REC</i>	<i>1</i>	<i>18-Dec-2023 04:12</i>
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 17-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	21-Dec-2023 11:22
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	21-Dec-2023 11:22
<b>Aliphatics &gt;C16 - C35</b>	<b>0.0173</b>		<b>0.00800</b>	<b>0.00800</b>	<b>mg/L</b>	<b>1</b>	<b>21-Dec-2023 11:22</b>
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	21-Dec-2023 11:22
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	21-Dec-2023 11:22
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	21-Dec-2023 11:22
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	21-Dec-2023 11:22
<i>Surr: 1-Chlorooctadecane</i>	<i>62.1</i>			<i>40-140</i>	<i>%REC</i>	<i>1</i>	<i>21-Dec-2023 11:22</i>
<i>Surr: 2-Bromonaphthalene</i>	<i>82.4</i>			<i>40-140</i>	<i>%REC</i>	<i>1</i>	<i>21-Dec-2023 11:22</i>
<i>Surr: 2-Fluorobiphenyl</i>	<i>84.6</i>			<i>40-140</i>	<i>%REC</i>	<i>1</i>	<i>21-Dec-2023 11:22</i>
<i>Surr: o-Terphenyl</i>	<i>57.3</i>			<i>40-140</i>	<i>%REC</i>	<i>1</i>	<i>21-Dec-2023 11:22</i>

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-14  
 Collection Date: 13-Dec-2023 09:30

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-16  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 18-Dec-2023		Analyst: MSC	
Arsenic	0.00133	J	0.000400	0.00200	mg/L	1	18-Dec-2023 17:40
Barium	0.371		0.00190	0.00400	mg/L	1	18-Dec-2023 17:40
Cadmium	U		0.000200	0.00200	mg/L	1	18-Dec-2023 17:40
Calcium	147		0.0340	0.500	mg/L	1	18-Dec-2023 17:40
Chromium	0.00227	J	0.000400	0.00400	mg/L	1	18-Dec-2023 17:40
Iron	0.0460	J	0.0120	0.200	mg/L	1	18-Dec-2023 17:40
Lead	U		0.000600	0.00200	mg/L	1	18-Dec-2023 17:40
Magnesium	38.2		0.0100	0.200	mg/L	1	18-Dec-2023 17:40
Manganese	0.233		0.000700	0.00500	mg/L	1	18-Dec-2023 17:40
Nickel	0.00238		0.000600	0.00200	mg/L	1	18-Dec-2023 17:40
Potassium	4.71		0.0180	0.200	mg/L	1	18-Dec-2023 17:40
Selenium	U		0.00110	0.00200	mg/L	1	18-Dec-2023 17:40
Silver	U		0.000200	0.00200	mg/L	1	18-Dec-2023 17:40
Sodium	674		1.40	20.0	mg/L	100	19-Dec-2023 16:07
Strontium	1.19		0.000200	0.00500	mg/L	1	18-Dec-2023 17:40
Vanadium	0.00527		0.000600	0.00500	mg/L	1	18-Dec-2023 17:40
Zinc	0.00472		0.00200	0.00400	mg/L	1	18-Dec-2023 17:40
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	20-Dec-2023 14:28
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	15-Dec-2023 14:23
<b>TOTAL DISSOLVED SOLIDS BY SM2540C-2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	2,140		5.00	10.0	mg/L	1	18-Dec-2023 12:27
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	144		3.50	5.00	mg/L	1	20-Dec-2023 15:35
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 15:35
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	15-Dec-2023 13:59
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.91	H	0.100	0.100	pH Units	1	20-Dec-2023 15:35
Temp Deg C @pH	19.9	H	0	0	°C	1	20-Dec-2023 15:35
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	20-Dec-2023 02:23
Chloride	1,130		4.00	10.0	mg/L	20	20-Dec-2023 02:29
Sulfate	397		4.00	10.0	mg/L	20	20-Dec-2023 02:29

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-22  
 Collection Date: 13-Dec-2023 09:50

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-17  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: TS			
Benzene	U		0.20	1.0	ug/L	1	16-Dec-2023 04:28
Ethylbenzene	U		0.30	1.0	ug/L	1	16-Dec-2023 04:28
m,p-Xylene	U		0.50	2.0	ug/L	1	16-Dec-2023 04:28
o-Xylene	U		0.30	1.0	ug/L	1	16-Dec-2023 04:28
Toluene	U		0.20	1.0	ug/L	1	16-Dec-2023 04:28
Xylenes, Total	U		0.30	1.0	ug/L	1	16-Dec-2023 04:28
<i>Surr: 1,2-Dichloroethane-d4</i>	107			70-126	%REC	1	16-Dec-2023 04:28
<i>Surr: 4-Bromofluorobenzene</i>	94.0			77-113	%REC	1	16-Dec-2023 04:28
<i>Surr: Dibromofluoromethane</i>	100			77-123	%REC	1	16-Dec-2023 04:28
<i>Surr: Toluene-d8</i>	107			82-127	%REC	1	16-Dec-2023 04:28
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: TS			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	18-Dec-2023 04:50
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 04:50
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 04:50
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	80.4			70-130	%REC	1	18-Dec-2023 04:50
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	80.5			70-130	%REC	1	18-Dec-2023 04:50
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 17-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	21-Dec-2023 11:51
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	21-Dec-2023 11:51
<b>Aliphatics &gt;C16 - C35</b>	<b>0.0172</b>		<b>0.00800</b>	<b>0.00800</b>	<b>mg/L</b>	1	21-Dec-2023 11:51
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	21-Dec-2023 11:51
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	21-Dec-2023 11:51
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	21-Dec-2023 11:51
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	21-Dec-2023 11:51
<i>Surr: 1-Chlorooctadecane</i>	61.5			40-140	%REC	1	21-Dec-2023 11:51
<i>Surr: 2-Bromonaphthalene</i>	61.2			40-140	%REC	1	21-Dec-2023 11:51
<i>Surr: 2-Fluorobiphenyl</i>	57.7			40-140	%REC	1	21-Dec-2023 11:51
<i>Surr: o-Terphenyl</i>	40.1			40-140	%REC	1	21-Dec-2023 11:51

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-22  
 Collection Date: 13-Dec-2023 09:50

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-17  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 18-Dec-2023		Analyst: MSC	
Arsenic	0.00136	J	0.000400	0.00200	mg/L	1	18-Dec-2023 17:42
Barium	0.388		0.00190	0.00400	mg/L	1	18-Dec-2023 17:42
Cadmium	U		0.000200	0.00200	mg/L	1	18-Dec-2023 17:42
Calcium	155		0.0340	0.500	mg/L	1	18-Dec-2023 17:42
Chromium	0.00231	J	0.000400	0.00400	mg/L	1	18-Dec-2023 17:42
Iron	0.0448	J	0.0120	0.200	mg/L	1	18-Dec-2023 17:42
Lead	U		0.000600	0.00200	mg/L	1	18-Dec-2023 17:42
Magnesium	40.7		0.0100	0.200	mg/L	1	18-Dec-2023 17:42
Manganese	0.196		0.000700	0.00500	mg/L	1	18-Dec-2023 17:42
Nickel	0.00267		0.000600	0.00200	mg/L	1	18-Dec-2023 17:42
Potassium	4.93		0.0180	0.200	mg/L	1	18-Dec-2023 17:42
Selenium	U		0.00110	0.00200	mg/L	1	18-Dec-2023 17:42
Silver	U		0.000200	0.00200	mg/L	1	18-Dec-2023 17:42
Sodium	679		1.40	20.0	mg/L	100	19-Dec-2023 16:09
Strontium	1.24		0.000200	0.00500	mg/L	1	18-Dec-2023 17:42
Vanadium	0.00583		0.000600	0.00500	mg/L	1	18-Dec-2023 17:42
Zinc	0.0143		0.00200	0.00400	mg/L	1	18-Dec-2023 17:42
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	20-Dec-2023 14:38
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	20-Dec-2023 15:10
<b>TOTAL DISSOLVED SOLIDS BY SM2540C-2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	2,680		5.00	10.0	mg/L	1	18-Dec-2023 12:27
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	142		3.50	5.00	mg/L	1	20-Dec-2023 15:40
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 15:40
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	20-Dec-2023 14:48
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.88	H	0.100	0.100	pH Units	1	20-Dec-2023 15:40
Temp Deg C @pH	19.8	H	0	0	°C	1	20-Dec-2023 15:40
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	20-Dec-2023 02:35
Chloride	1,170		4.00	10.0	mg/L	20	20-Dec-2023 02:41
Sulfate	400		4.00	10.0	mg/L	20	20-Dec-2023 02:41

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-21  
 Collection Date: 13-Dec-2023 10:50

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-18  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: TS			
Benzene	U		0.20	1.0	ug/L	1	16-Dec-2023 04:49
Ethylbenzene	U		0.30	1.0	ug/L	1	16-Dec-2023 04:49
m,p-Xylene	U		0.50	2.0	ug/L	1	16-Dec-2023 04:49
o-Xylene	U		0.30	1.0	ug/L	1	16-Dec-2023 04:49
Toluene	U		0.20	1.0	ug/L	1	16-Dec-2023 04:49
Xylenes, Total	U		0.30	1.0	ug/L	1	16-Dec-2023 04:49
<i>Surr: 1,2-Dichloroethane-d4</i>	105			70-126	%REC	1	16-Dec-2023 04:49
<i>Surr: 4-Bromofluorobenzene</i>	93.9			77-113	%REC	1	16-Dec-2023 04:49
<i>Surr: Dibromofluoromethane</i>	99.4			77-123	%REC	1	16-Dec-2023 04:49
<i>Surr: Toluene-d8</i>	108			82-127	%REC	1	16-Dec-2023 04:49
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: TS			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	18-Dec-2023 06:46
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 06:46
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 06:46
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	75.4			70-130	%REC	1	18-Dec-2023 06:46
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	80.6			70-130	%REC	1	18-Dec-2023 06:46
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 17-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	21-Dec-2023 12:19
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	21-Dec-2023 12:19
<b>Aliphatics &gt;C16 - C35</b>	<b>0.0183</b>		<b>0.00800</b>	<b>0.00800</b>	<b>mg/L</b>	1	21-Dec-2023 12:19
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	21-Dec-2023 12:19
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	21-Dec-2023 12:19
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	21-Dec-2023 12:19
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	21-Dec-2023 12:19
<i>Surr: 1-Chlorooctadecane</i>	63.1			40-140	%REC	1	21-Dec-2023 12:19
<i>Surr: 2-Bromonaphthalene</i>	83.5			40-140	%REC	1	21-Dec-2023 12:19
<i>Surr: 2-Fluorobiphenyl</i>	84.1			40-140	%REC	1	21-Dec-2023 12:19
<i>Surr: o-Terphenyl</i>	61.4			40-140	%REC	1	21-Dec-2023 12:19

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-21  
 Collection Date: 13-Dec-2023 10:50

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-18  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 18-Dec-2023		Analyst: MSC	
Arsenic	0.00138	J	0.000400	0.00200	mg/L	1	18-Dec-2023 17:44
Barium	0.395		0.00190	0.00400	mg/L	1	18-Dec-2023 17:44
Cadmium	U		0.000200	0.00200	mg/L	1	18-Dec-2023 17:44
Calcium	146		0.0340	0.500	mg/L	1	18-Dec-2023 17:44
Chromium	0.00271	J	0.000400	0.00400	mg/L	1	18-Dec-2023 17:44
Iron	0.0827	J	0.0120	0.200	mg/L	1	18-Dec-2023 17:44
Lead	U		0.000600	0.00200	mg/L	1	18-Dec-2023 17:44
Magnesium	39.8		0.0100	0.200	mg/L	1	18-Dec-2023 17:44
Manganese	0.142		0.000700	0.00500	mg/L	1	18-Dec-2023 17:44
Nickel	0.00298		0.000600	0.00200	mg/L	1	18-Dec-2023 17:44
Potassium	4.71		0.0180	0.200	mg/L	1	18-Dec-2023 17:44
Selenium	U		0.00110	0.00200	mg/L	1	18-Dec-2023 17:44
Silver	U		0.000200	0.00200	mg/L	1	18-Dec-2023 17:44
Sodium	664		1.40	20.0	mg/L	100	19-Dec-2023 16:10
Strontium	1.20		0.000200	0.00500	mg/L	1	18-Dec-2023 17:44
Vanadium	0.00592		0.000600	0.00500	mg/L	1	18-Dec-2023 17:44
Zinc	0.0139		0.00200	0.00400	mg/L	1	18-Dec-2023 17:44
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	20-Dec-2023 14:40
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	20-Dec-2023 15:10
<b>TOTAL DISSOLVED SOLIDS BY SM2540C-2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	2,460		5.00	10.0	mg/L	1	18-Dec-2023 12:27
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	148		3.50	5.00	mg/L	1	20-Dec-2023 15:46
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 15:46
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	20-Dec-2023 14:48
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.87	H	0.100	0.100	pH Units	1	20-Dec-2023 15:46
Temp Deg C @pH	20.0	H	0	0	°C	1	20-Dec-2023 15:46
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	20-Dec-2023 02:46
Chloride	1,120		4.00	10.0	mg/L	20	20-Dec-2023 02:52
Sulfate	375		4.00	10.0	mg/L	20	20-Dec-2023 02:52

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-18  
 Collection Date: 13-Dec-2023 11:00

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-19  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: TS			
Benzene	U		0.20	1.0	ug/L	1	16-Dec-2023 05:10
Ethylbenzene	U		0.30	1.0	ug/L	1	16-Dec-2023 05:10
m,p-Xylene	U		0.50	2.0	ug/L	1	16-Dec-2023 05:10
o-Xylene	U		0.30	1.0	ug/L	1	16-Dec-2023 05:10
Toluene	U		0.20	1.0	ug/L	1	16-Dec-2023 05:10
Xylenes, Total	U		0.30	1.0	ug/L	1	16-Dec-2023 05:10
<i>Surr: 1,2-Dichloroethane-d4</i>	108			70-126	%REC	1	16-Dec-2023 05:10
<i>Surr: 4-Bromofluorobenzene</i>	94.3			77-113	%REC	1	16-Dec-2023 05:10
<i>Surr: Dibromofluoromethane</i>	99.8			77-123	%REC	1	16-Dec-2023 05:10
<i>Surr: Toluene-d8</i>	108			82-127	%REC	1	16-Dec-2023 05:10
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: TS			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	18-Dec-2023 07:25
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 07:25
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 07:25
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	79.3			70-130	%REC	1	18-Dec-2023 07:25
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	82.4			70-130	%REC	1	18-Dec-2023 07:25
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 17-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	20-Dec-2023 00:19
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	20-Dec-2023 00:19
Aliphatics >C16 - C35	U		0.00800	0.00800	mg/L	1	20-Dec-2023 00:19
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	20-Dec-2023 00:19
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	20-Dec-2023 00:19
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	20-Dec-2023 00:19
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	20-Dec-2023 00:19
<i>Surr: 1-Chlorooctadecane</i>	40.2			40-140	%REC	1	20-Dec-2023 00:19
<i>Surr: 2-Bromonaphthalene</i>	77.6			40-140	%REC	1	20-Dec-2023 00:19
<i>Surr: 2-Fluorobiphenyl</i>	80.2			40-140	%REC	1	20-Dec-2023 00:19
<i>Surr: o-Terphenyl</i>	47.5			40-140	%REC	1	20-Dec-2023 00:19

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-18  
 Collection Date: 13-Dec-2023 11:00

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-19  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 18-Dec-2023		Analyst: MSC	
Arsenic	0.00132	J	0.000400	0.00200	mg/L	1	18-Dec-2023 17:46
Barium	0.405		0.00190	0.00400	mg/L	1	18-Dec-2023 17:46
Cadmium	U		0.000200	0.00200	mg/L	1	18-Dec-2023 17:46
Calcium	150		0.0340	0.500	mg/L	1	18-Dec-2023 17:46
Chromium	0.00244	J	0.000400	0.00400	mg/L	1	18-Dec-2023 17:46
Iron	0.0896	J	0.0120	0.200	mg/L	1	18-Dec-2023 17:46
Lead	U		0.000600	0.00200	mg/L	1	18-Dec-2023 17:46
Magnesium	41.0		0.0100	0.200	mg/L	1	18-Dec-2023 17:46
Manganese	0.134		0.000700	0.00500	mg/L	1	18-Dec-2023 17:46
Nickel	0.00290		0.000600	0.00200	mg/L	1	18-Dec-2023 17:46
Potassium	4.84		0.0180	0.200	mg/L	1	18-Dec-2023 17:46
Selenium	U		0.00110	0.00200	mg/L	1	18-Dec-2023 17:46
Silver	U		0.000200	0.00200	mg/L	1	18-Dec-2023 17:46
Sodium	843		1.40	20.0	mg/L	100	19-Dec-2023 16:50
Strontium	1.24		0.000200	0.00500	mg/L	1	18-Dec-2023 17:46
Vanadium	0.00609		0.000600	0.00500	mg/L	1	18-Dec-2023 17:46
Zinc	0.00572		0.00200	0.00400	mg/L	1	18-Dec-2023 17:46
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	20-Dec-2023 14:42
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	20-Dec-2023 15:10
<b>TOTAL DISSOLVED SOLIDS BY SM2540C -2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	2,330		5.00	10.0	mg/L	1	18-Dec-2023 12:27
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	146		3.50	5.00	mg/L	1	20-Dec-2023 16:02
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 16:02
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	20-Dec-2023 14:48
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.90	H	0.100	0.100	pH Units	1	20-Dec-2023 16:02
Temp Deg C @pH	20.2	H	0	0	°C	1	20-Dec-2023 16:02
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	20-Dec-2023 02:58
Chloride	1,140		4.00	10.0	mg/L	20	20-Dec-2023 03:04
Sulfate	379		4.00	10.0	mg/L	20	20-Dec-2023 03:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-5  
 Collection Date: 13-Dec-2023 13:15

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-20  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: TS			
Benzene	U		0.20	1.0	ug/L	1	16-Dec-2023 05:31
Ethylbenzene	U		0.30	1.0	ug/L	1	16-Dec-2023 05:31
m,p-Xylene	U		0.50	2.0	ug/L	1	16-Dec-2023 05:31
o-Xylene	U		0.30	1.0	ug/L	1	16-Dec-2023 05:31
Toluene	U		0.20	1.0	ug/L	1	16-Dec-2023 05:31
Xylenes, Total	U		0.30	1.0	ug/L	1	16-Dec-2023 05:31
<i>Surr: 1,2-Dichloroethane-d4</i>	110			70-126	%REC	1	16-Dec-2023 05:31
<i>Surr: 4-Bromofluorobenzene</i>	91.0			77-113	%REC	1	16-Dec-2023 05:31
<i>Surr: Dibromofluoromethane</i>	106			77-123	%REC	1	16-Dec-2023 05:31
<i>Surr: Toluene-d8</i>	110			82-127	%REC	1	16-Dec-2023 05:31
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: TS			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	18-Dec-2023 08:04
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 08:04
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 08:04
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	78.8			70-130	%REC	1	18-Dec-2023 08:04
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	81.1			70-130	%REC	1	18-Dec-2023 08:04
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 18-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	21-Dec-2023 12:48
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	21-Dec-2023 12:48
<b>Aliphatics &gt;C16 - C35</b>	<b>0.0193</b>		<b>0.00800</b>	<b>0.00800</b>	<b>mg/L</b>	1	21-Dec-2023 12:48
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	21-Dec-2023 12:48
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	21-Dec-2023 12:48
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	21-Dec-2023 12:48
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	21-Dec-2023 12:48
<i>Surr: 1-Chlorooctadecane</i>	46.6			40-140	%REC	1	21-Dec-2023 12:48
<i>Surr: 2-Bromonaphthalene</i>	79.1			40-140	%REC	1	21-Dec-2023 12:48
<i>Surr: 2-Fluorobiphenyl</i>	81.1			40-140	%REC	1	21-Dec-2023 12:48
<i>Surr: o-Terphenyl</i>	48.9			40-140	%REC	1	21-Dec-2023 12:48

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-5  
 Collection Date: 13-Dec-2023 13:15

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-20  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 18-Dec-2023		Analyst: MSC	
Arsenic	0.00151	J	0.000400	0.00200	mg/L	1	18-Dec-2023 17:47
Barium	0.385		0.00190	0.00400	mg/L	1	18-Dec-2023 17:47
Cadmium	U		0.000200	0.00200	mg/L	1	18-Dec-2023 17:47
Calcium	147		0.0340	0.500	mg/L	1	18-Dec-2023 17:47
Chromium	0.00274	J	0.000400	0.00400	mg/L	1	18-Dec-2023 17:47
Iron	0.0794	J	0.0120	0.200	mg/L	1	18-Dec-2023 17:47
Lead	U		0.000600	0.00200	mg/L	1	18-Dec-2023 17:47
Magnesium	40.1		0.0100	0.200	mg/L	1	18-Dec-2023 17:47
Manganese	0.145		0.000700	0.00500	mg/L	1	18-Dec-2023 17:47
Nickel	0.00322		0.000600	0.00200	mg/L	1	18-Dec-2023 17:47
Potassium	4.78		0.0180	0.200	mg/L	1	18-Dec-2023 17:47
Selenium	U		0.00110	0.00200	mg/L	1	18-Dec-2023 17:47
Silver	U		0.000200	0.00200	mg/L	1	18-Dec-2023 17:47
Sodium	792		1.40	20.0	mg/L	100	19-Dec-2023 16:52
Strontium	1.19		0.000200	0.00500	mg/L	1	18-Dec-2023 17:47
Vanadium	0.00628		0.000600	0.00500	mg/L	1	18-Dec-2023 17:47
Zinc	0.0297		0.00200	0.00400	mg/L	1	18-Dec-2023 17:47
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	20-Dec-2023 14:44
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	20-Dec-2023 15:10
<b>TOTAL DISSOLVED SOLIDS BY SM2540C-2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	2,870		5.00	10.0	mg/L	1	18-Dec-2023 12:27
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	146		3.50	5.00	mg/L	1	20-Dec-2023 16:08
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 16:08
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	20-Dec-2023 14:48
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.85	H	0.100	0.100	pH Units	1	20-Dec-2023 16:08
Temp Deg C @pH	20.3	H	0	0	°C	1	20-Dec-2023 16:08
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	20-Dec-2023 03:39
Chloride	1,140		4.00	10.0	mg/L	20	20-Dec-2023 03:45
Sulfate	388		4.00	10.0	mg/L	20	20-Dec-2023 03:45

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-17  
 Collection Date: 13-Dec-2023 14:20

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-21  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: AKP			
Benzene	U		0.20	1.0	ug/L	1	17-Dec-2023 03:37
Ethylbenzene	U		0.30	1.0	ug/L	1	17-Dec-2023 03:37
m,p-Xylene	U		0.50	2.0	ug/L	1	17-Dec-2023 03:37
o-Xylene	U		0.30	1.0	ug/L	1	17-Dec-2023 03:37
Toluene	U		0.20	1.0	ug/L	1	17-Dec-2023 03:37
Xylenes, Total	U		0.30	1.0	ug/L	1	17-Dec-2023 03:37
<i>Surr: 1,2-Dichloroethane-d4</i>	104			70-126	%REC	1	17-Dec-2023 03:37
<i>Surr: 4-Bromofluorobenzene</i>	100			77-113	%REC	1	17-Dec-2023 03:37
<i>Surr: Dibromofluoromethane</i>	102			77-123	%REC	1	17-Dec-2023 03:37
<i>Surr: Toluene-d8</i>	99.8			82-127	%REC	1	17-Dec-2023 03:37
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: FT			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	18-Dec-2023 17:20
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 17:20
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 17:20
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	70.9			70-130	%REC	1	18-Dec-2023 17:20
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	74.2			70-130	%REC	1	18-Dec-2023 17:20
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 18-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	20-Dec-2023 17:37
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	20-Dec-2023 17:37
Aliphatics >C16 - C35	U		0.00800	0.00800	mg/L	1	20-Dec-2023 17:37
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	20-Dec-2023 17:37
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	20-Dec-2023 17:37
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	20-Dec-2023 17:37
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	20-Dec-2023 17:37
<i>Surr: 1-Chlorooctadecane</i>	51.8			40-140	%REC	1	20-Dec-2023 17:37
<i>Surr: 2-Bromonaphthalene</i>	83.0			40-140	%REC	1	20-Dec-2023 17:37
<i>Surr: 2-Fluorobiphenyl</i>	85.3			40-140	%REC	1	20-Dec-2023 17:37
<i>Surr: o-Terphenyl</i>	53.0			40-140	%REC	1	20-Dec-2023 17:37

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-17  
 Collection Date: 13-Dec-2023 14:20

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-21  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 18-Dec-2023		Analyst: MSC	
Arsenic	0.00140	J	0.000400	0.00200	mg/L	1	18-Dec-2023 17:49
Barium	0.400		0.00190	0.00400	mg/L	1	18-Dec-2023 17:49
Cadmium	U		0.000200	0.00200	mg/L	1	18-Dec-2023 17:49
Calcium	156		0.0340	0.500	mg/L	1	18-Dec-2023 17:49
Chromium	0.00200	J	0.000400	0.00400	mg/L	1	18-Dec-2023 17:49
Iron	0.162	J	0.0120	0.200	mg/L	1	18-Dec-2023 17:49
Lead	U		0.000600	0.00200	mg/L	1	18-Dec-2023 17:49
Magnesium	42.1		0.0100	0.200	mg/L	1	18-Dec-2023 17:49
Manganese	0.195		0.000700	0.00500	mg/L	1	18-Dec-2023 17:49
Nickel	0.00398		0.000600	0.00200	mg/L	1	18-Dec-2023 17:49
Potassium	5.00		0.0180	0.200	mg/L	1	18-Dec-2023 17:49
Selenium	U		0.00110	0.00200	mg/L	1	18-Dec-2023 17:49
Silver	U		0.000200	0.00200	mg/L	1	18-Dec-2023 17:49
Sodium	808		1.40	20.0	mg/L	100	19-Dec-2023 16:54
Strontium	1.24		0.000200	0.00500	mg/L	1	18-Dec-2023 17:49
Vanadium	0.00637		0.000600	0.00500	mg/L	1	18-Dec-2023 17:49
Zinc	0.0321		0.00200	0.00400	mg/L	1	18-Dec-2023 17:49
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	20-Dec-2023 15:42
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	20-Dec-2023 15:10
<b>TOTAL DISSOLVED SOLIDS BY SM2540C-2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	2,390		5.00	10.0	mg/L	1	18-Dec-2023 12:27
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	143		3.50	5.00	mg/L	1	20-Dec-2023 16:13
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 16:13
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	20-Dec-2023 14:48
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.85	H	0.100	0.100	pH Units	1	20-Dec-2023 16:13
Temp Deg C @pH	20.8	H	0	0	°C	1	20-Dec-2023 16:13
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	20-Dec-2023 03:50
Chloride	1,170		4.00	10.0	mg/L	20	20-Dec-2023 03:56
Sulfate	400		4.00	10.0	mg/L	20	20-Dec-2023 03:56

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-9  
 Collection Date: 13-Dec-2023 15:25

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-22  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: AKP			
Benzene	U		0.20	1.0	ug/L	1	17-Dec-2023 03:58
Ethylbenzene	U		0.30	1.0	ug/L	1	17-Dec-2023 03:58
m,p-Xylene	U		0.50	2.0	ug/L	1	17-Dec-2023 03:58
o-Xylene	U		0.30	1.0	ug/L	1	17-Dec-2023 03:58
Toluene	U		0.20	1.0	ug/L	1	17-Dec-2023 03:58
Xylenes, Total	U		0.30	1.0	ug/L	1	17-Dec-2023 03:58
<i>Surr: 1,2-Dichloroethane-d4</i>	109			70-126	%REC	1	17-Dec-2023 03:58
<i>Surr: 4-Bromofluorobenzene</i>	98.3			77-113	%REC	1	17-Dec-2023 03:58
<i>Surr: Dibromofluoromethane</i>	108			77-123	%REC	1	17-Dec-2023 03:58
<i>Surr: Toluene-d8</i>	97.6			82-127	%REC	1	17-Dec-2023 03:58
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: FT			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	18-Dec-2023 17:58
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 17:58
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 17:58
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	70.4			70-130	%REC	1	18-Dec-2023 17:58
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	72.7			70-130	%REC	1	18-Dec-2023 17:58
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 18-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	20-Dec-2023 18:06
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	20-Dec-2023 18:06
Aliphatics >C16 - C35	U		0.00800	0.00800	mg/L	1	20-Dec-2023 18:06
<b>Aromatics &gt;C10 - C12</b>	<b>0.00424</b>		<b>0.00100</b>	<b>0.00100</b>	<b>mg/L</b>	1	20-Dec-2023 18:06
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	20-Dec-2023 18:06
<b>Aromatics &gt;C16 - C21</b>	<b>0.0137</b>		<b>0.00300</b>	<b>0.00300</b>	<b>mg/L</b>	1	20-Dec-2023 18:06
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	20-Dec-2023 18:06
<i>Surr: 1-Chlorooctadecane</i>	42.8			40-140	%REC	1	20-Dec-2023 18:06
<i>Surr: 2-Bromonaphthalene</i>	87.9			40-140	%REC	1	20-Dec-2023 18:06
<i>Surr: 2-Fluorobiphenyl</i>	90.1			40-140	%REC	1	20-Dec-2023 18:06
<i>Surr: o-Terphenyl</i>	61.9			40-140	%REC	1	20-Dec-2023 18:06

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: BS-9  
 Collection Date: 13-Dec-2023 15:25

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-22  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 18-Dec-2023		Analyst: MSC	
Arsenic	0.00154	J	0.000400	0.00200	mg/L	1	18-Dec-2023 17:51
Barium	0.0370		0.00190	0.00400	mg/L	1	18-Dec-2023 17:51
Cadmium	U		0.000200	0.00200	mg/L	1	18-Dec-2023 17:51
Calcium	303		3.40	50.0	mg/L	100	19-Dec-2023 16:56
Chromium	0.00192	J	0.000400	0.00400	mg/L	1	18-Dec-2023 17:51
Iron	1.83		0.0120	0.200	mg/L	1	18-Dec-2023 17:51
Lead	U		0.000600	0.00200	mg/L	1	18-Dec-2023 17:51
Magnesium	26.5		0.0100	0.200	mg/L	1	18-Dec-2023 17:51
Manganese	0.110		0.000700	0.00500	mg/L	1	18-Dec-2023 17:51
Nickel	0.00504		0.000600	0.00200	mg/L	1	18-Dec-2023 17:51
Potassium	3.45		0.0180	0.200	mg/L	1	18-Dec-2023 17:51
Selenium	U		0.00110	0.00200	mg/L	1	18-Dec-2023 17:51
Silver	U		0.000200	0.00200	mg/L	1	18-Dec-2023 17:51
Sodium	334		1.40	20.0	mg/L	100	19-Dec-2023 16:56
Strontium	1.40		0.000200	0.00500	mg/L	1	18-Dec-2023 17:51
Vanadium	0.00487	J	0.000600	0.00500	mg/L	1	18-Dec-2023 17:51
Zinc	0.0516		0.00200	0.00400	mg/L	1	18-Dec-2023 17:51
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	20-Dec-2023 15:47
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	20-Dec-2023 15:10
<b>TOTAL DISSOLVED SOLIDS BY SM2540C-2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	1,640		5.00	10.0	mg/L	1	18-Dec-2023 12:27
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	71.0		3.50	5.00	mg/L	1	20-Dec-2023 16:18
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 16:18
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	20-Dec-2023 14:48
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.76	H	0.100	0.100	pH Units	1	20-Dec-2023 16:18
Temp Deg C @pH	20.8	H	0	0	°C	1	20-Dec-2023 16:18
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	20-Dec-2023 04:02
Chloride	241		4.00	10.0	mg/L	20	20-Dec-2023 04:08
Sulfate	1,170		4.00	10.0	mg/L	20	20-Dec-2023 04:08

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: WW #19  
 Collection Date: 14-Dec-2023 07:45

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-23  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: AKP			
Benzene	U		0.20	1.0	ug/L	1	17-Dec-2023 04:19
Ethylbenzene	U		0.30	1.0	ug/L	1	17-Dec-2023 04:19
m,p-Xylene	U		0.50	2.0	ug/L	1	17-Dec-2023 04:19
o-Xylene	U		0.30	1.0	ug/L	1	17-Dec-2023 04:19
Toluene	U		0.20	1.0	ug/L	1	17-Dec-2023 04:19
Xylenes, Total	U		0.30	1.0	ug/L	1	17-Dec-2023 04:19
<i>Surr: 1,2-Dichloroethane-d4</i>	105			70-126	%REC	1	17-Dec-2023 04:19
<i>Surr: 4-Bromofluorobenzene</i>	102			77-113	%REC	1	17-Dec-2023 04:19
<i>Surr: Dibromofluoromethane</i>	105			77-123	%REC	1	17-Dec-2023 04:19
<i>Surr: Toluene-d8</i>	99.5			82-127	%REC	1	17-Dec-2023 04:19
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: FT			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	18-Dec-2023 18:37
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 18:37
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 18:37
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	71.0			70-130	%REC	1	18-Dec-2023 18:37
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	74.7			70-130	%REC	1	18-Dec-2023 18:37
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 18-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	20-Dec-2023 18:34
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	20-Dec-2023 18:34
Aliphatics >C16 - C35	U		0.00800	0.00800	mg/L	1	20-Dec-2023 18:34
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	20-Dec-2023 18:34
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	20-Dec-2023 18:34
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	20-Dec-2023 18:34
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	20-Dec-2023 18:34
<i>Surr: 1-Chlorooctadecane</i>	49.8			40-140	%REC	1	20-Dec-2023 18:34
<i>Surr: 2-Bromonaphthalene</i>	83.4			40-140	%REC	1	20-Dec-2023 18:34
<i>Surr: 2-Fluorobiphenyl</i>	85.3			40-140	%REC	1	20-Dec-2023 18:34
<i>Surr: o-Terphenyl</i>	52.6			40-140	%REC	1	20-Dec-2023 18:34

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: WW #19  
 Collection Date: 14-Dec-2023 07:45

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-23  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		Method:SW6020A		Prep:SW3010A / 18-Dec-2023		Analyst: MSC	
Arsenic	0.000661	J	0.000400	0.00200	mg/L	1	18-Dec-2023 17:53
Barium	0.258		0.00190	0.00400	mg/L	1	18-Dec-2023 17:53
Cadmium	U		0.000200	0.00200	mg/L	1	18-Dec-2023 17:53
Calcium	25.7		0.0340	0.500	mg/L	1	18-Dec-2023 17:53
Chromium	0.00105	J	0.000400	0.00400	mg/L	1	18-Dec-2023 17:53
Iron	3.63		0.0120	0.200	mg/L	1	18-Dec-2023 17:53
Lead	U		0.000600	0.00200	mg/L	1	18-Dec-2023 17:53
Magnesium	8.06		0.0100	0.200	mg/L	1	18-Dec-2023 17:53
Manganese	0.388		0.000700	0.00500	mg/L	1	18-Dec-2023 17:53
Nickel	U		0.000600	0.00200	mg/L	1	18-Dec-2023 17:53
Potassium	2.75		0.0180	0.200	mg/L	1	18-Dec-2023 17:53
Selenium	U		0.00110	0.00200	mg/L	1	18-Dec-2023 17:53
Silver	U		0.000200	0.00200	mg/L	1	18-Dec-2023 17:53
Sodium	32.2		0.0140	0.200	mg/L	1	18-Dec-2023 17:53
Strontium	0.230		0.000200	0.00500	mg/L	1	18-Dec-2023 17:53
Vanadium	0.00629		0.000600	0.00500	mg/L	1	18-Dec-2023 17:53
Zinc	0.00595		0.00200	0.00400	mg/L	1	18-Dec-2023 17:53
<b>MERCURY BY SW7470A</b>		Method:SW7470A		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	0.0000690	J	0.0000300	0.000200	mg/L	1	20-Dec-2023 15:54
<b>HYDROGEN SULFIDE BY E376.1</b>		Method:E376.1				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	20-Dec-2023 15:10
<b>TOTAL DISSOLVED SOLIDS BY SM2540C -2011</b>		Method:M2540C				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	236		5.00	10.0	mg/L	1	18-Dec-2023 13:30
<b>ALKALINITY BY -2011</b>		Method:SM2320B				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	118		3.50	5.00	mg/L	1	20-Dec-2023 16:24
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 16:24
<b>SULFIDE BY SM4500 S2-F-2011</b>		Method:SM4500 S2-F				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	20-Dec-2023 14:48
<b>PH BY SM4500H+ B-2011</b>		Method:SM4500H+ B				Analyst: DW	
pH	7.52	H	0.100	0.100	pH Units	1	20-Dec-2023 16:24
Temp Deg C @pH	20.4	H	0	0	°C	1	20-Dec-2023 16:24
<b>ANIONS BY SW9056A</b>		Method:SW9056				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	20-Dec-2023 04:14
Chloride	39.8		0.200	0.500	mg/L	1	20-Dec-2023 04:14
Sulfate	4.44		0.200	0.500	mg/L	1	20-Dec-2023 04:14

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: WW #11  
 Collection Date: 14-Dec-2023 08:00

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-24  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: AKP			
Benzene	U		0.20	1.0	ug/L	1	17-Dec-2023 04:40
Ethylbenzene	U		0.30	1.0	ug/L	1	17-Dec-2023 04:40
m,p-Xylene	U		0.50	2.0	ug/L	1	17-Dec-2023 04:40
o-Xylene	U		0.30	1.0	ug/L	1	17-Dec-2023 04:40
Toluene	U		0.20	1.0	ug/L	1	17-Dec-2023 04:40
Xylenes, Total	U		0.30	1.0	ug/L	1	17-Dec-2023 04:40
<i>Surr: 1,2-Dichloroethane-d4</i>	108			70-126	%REC	1	17-Dec-2023 04:40
<i>Surr: 4-Bromofluorobenzene</i>	99.1			77-113	%REC	1	17-Dec-2023 04:40
<i>Surr: Dibromofluoromethane</i>	108			77-123	%REC	1	17-Dec-2023 04:40
<i>Surr: Toluene-d8</i>	100.0			82-127	%REC	1	17-Dec-2023 04:40
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: FT			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	18-Dec-2023 19:15
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 19:15
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 19:15
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	73.0			70-130	%REC	1	18-Dec-2023 19:15
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	71.6			70-130	%REC	1	18-Dec-2023 19:15
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 18-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	21-Dec-2023 13:17
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	21-Dec-2023 13:17
<b>Aliphatics &gt;C16 - C35</b>	<b>0.0243</b>		<b>0.00800</b>	<b>0.00800</b>	<b>mg/L</b>	1	21-Dec-2023 13:17
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	21-Dec-2023 13:17
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	21-Dec-2023 13:17
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	21-Dec-2023 13:17
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	21-Dec-2023 13:17
<i>Surr: 1-Chlorooctadecane</i>	50.8			40-140	%REC	1	21-Dec-2023 13:17
<i>Surr: 2-Bromonaphthalene</i>	97.7			40-140	%REC	1	21-Dec-2023 13:17
<i>Surr: 2-Fluorobiphenyl</i>	103			40-140	%REC	1	21-Dec-2023 13:17
<i>Surr: o-Terphenyl</i>	61.0			40-140	%REC	1	21-Dec-2023 13:17

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: WW #11  
 Collection Date: 14-Dec-2023 08:00

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-24  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 19-Dec-2023		Analyst: MSC	
Arsenic		U	0.000400	0.00200	mg/L	1	20-Dec-2023 20:46
<b>Barium</b>	<b>0.207</b>		<b>0.00190</b>	<b>0.00400</b>	<b>mg/L</b>	1	20-Dec-2023 20:46
Cadmium		U	0.000200	0.00200	mg/L	1	20-Dec-2023 20:46
<b>Calcium</b>	<b>24.0</b>		<b>0.0340</b>	<b>0.500</b>	<b>mg/L</b>	1	20-Dec-2023 20:46
<b>Chromium</b>	<b>0.000681</b>	J	<b>0.000400</b>	<b>0.00400</b>	<b>mg/L</b>	1	20-Dec-2023 20:46
<b>Iron</b>	<b>3.66</b>		<b>0.0120</b>	<b>0.200</b>	<b>mg/L</b>	1	20-Dec-2023 20:46
Lead		U	0.000600	0.00200	mg/L	1	20-Dec-2023 20:46
<b>Magnesium</b>	<b>7.35</b>		<b>0.0100</b>	<b>0.200</b>	<b>mg/L</b>	1	20-Dec-2023 20:46
<b>Manganese</b>	<b>0.373</b>		<b>0.000700</b>	<b>0.00500</b>	<b>mg/L</b>	1	20-Dec-2023 20:46
Nickel		U	0.000600	0.00200	mg/L	1	20-Dec-2023 20:46
<b>Potassium</b>	<b>2.63</b>		<b>0.0180</b>	<b>0.200</b>	<b>mg/L</b>	1	20-Dec-2023 20:46
Selenium		U	0.00110	0.00200	mg/L	1	20-Dec-2023 20:46
Silver		U	0.000200	0.00200	mg/L	1	20-Dec-2023 20:46
<b>Sodium</b>	<b>24.8</b>		<b>0.0140</b>	<b>0.200</b>	<b>mg/L</b>	1	20-Dec-2023 20:46
<b>Strontium</b>	<b>0.195</b>		<b>0.000200</b>	<b>0.00500</b>	<b>mg/L</b>	1	20-Dec-2023 20:46
Vanadium		U	0.000600	0.00500	mg/L	1	20-Dec-2023 20:46
<b>Zinc</b>	<b>0.00650</b>		<b>0.00200</b>	<b>0.00400</b>	<b>mg/L</b>	1	20-Dec-2023 20:46
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury		U	0.0000300	0.000200	mg/L	1	20-Dec-2023 15:56
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide		U	0.500	1.00	mg/L	1	20-Dec-2023 15:10
<b>TOTAL DISSOLVED SOLIDS BY SM2540C -2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	<b>138</b>		<b>5.00</b>	<b>10.0</b>	<b>mg/L</b>	1	18-Dec-2023 13:30
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	<b>113</b>		<b>3.50</b>	<b>5.00</b>	<b>mg/L</b>	1	20-Dec-2023 16:29
Alkalinity, Carbonate (As CaCO3)		U	3.50	5.00	mg/L	1	20-Dec-2023 16:29
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide		U	1.70	2.00	mg/L	1	20-Dec-2023 14:48
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	<b>7.48</b>	H	<b>0.100</b>	<b>0.100</b>	<b>pH Units</b>	1	20-Dec-2023 16:29
Temp Deg C @pH	<b>20.3</b>	H	<b>0</b>	<b>0</b>	<b>°C</b>	1	20-Dec-2023 16:29
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide		U	0.0300	0.100	mg/L	1	20-Dec-2023 04:25
<b>Chloride</b>	<b>23.8</b>		<b>0.200</b>	<b>0.500</b>	<b>mg/L</b>	1	20-Dec-2023 04:25
<b>Sulfate</b>	<b>4.65</b>		<b>0.200</b>	<b>0.500</b>	<b>mg/L</b>	1	20-Dec-2023 04:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: WW #12  
 Collection Date: 14-Dec-2023 08:45

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-25  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: AKP			
Benzene	U		0.20	1.0	ug/L	1	17-Dec-2023 05:01
Ethylbenzene	U		0.30	1.0	ug/L	1	17-Dec-2023 05:01
m,p-Xylene	U		0.50	2.0	ug/L	1	17-Dec-2023 05:01
o-Xylene	U		0.30	1.0	ug/L	1	17-Dec-2023 05:01
Toluene	U		0.20	1.0	ug/L	1	17-Dec-2023 05:01
Xylenes, Total	U		0.30	1.0	ug/L	1	17-Dec-2023 05:01
<i>Surr: 1,2-Dichloroethane-d4</i>	106			70-126	%REC	1	17-Dec-2023 05:01
<i>Surr: 4-Bromofluorobenzene</i>	99.3			77-113	%REC	1	17-Dec-2023 05:01
<i>Surr: Dibromofluoromethane</i>	104			77-123	%REC	1	17-Dec-2023 05:01
<i>Surr: Toluene-d8</i>	99.3			82-127	%REC	1	17-Dec-2023 05:01
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: FT			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	18-Dec-2023 19:54
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 19:54
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 19:54
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	75.0			70-130	%REC	1	18-Dec-2023 19:54
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	74.4			70-130	%REC	1	18-Dec-2023 19:54
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 18-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	20-Dec-2023 19:32
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	20-Dec-2023 19:32
<b>Aliphatics &gt;C16 - C35</b>	<b>0.0235</b>		<b>0.00800</b>	<b>0.00800</b>	<b>mg/L</b>	1	20-Dec-2023 19:32
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	20-Dec-2023 19:32
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	20-Dec-2023 19:32
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	20-Dec-2023 19:32
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	20-Dec-2023 19:32
<i>Surr: 1-Chlorooctadecane</i>	49.7			40-140	%REC	1	20-Dec-2023 19:32
<i>Surr: 2-Bromonaphthalene</i>	93.3			40-140	%REC	1	20-Dec-2023 19:32
<i>Surr: 2-Fluorobiphenyl</i>	95.8			40-140	%REC	1	20-Dec-2023 19:32
<i>Surr: o-Terphenyl</i>	58.2			40-140	%REC	1	20-Dec-2023 19:32

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: WW #12  
 Collection Date: 14-Dec-2023 08:45

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-25  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 19-Dec-2023		Analyst: MSC	
Arsenic	0.000461	J	0.000400	0.00200	mg/L	1	20-Dec-2023 20:48
Barium	0.194		0.00190	0.00400	mg/L	1	20-Dec-2023 20:48
Cadmium	U		0.000200	0.00200	mg/L	1	20-Dec-2023 20:48
Calcium	24.1		0.0340	0.500	mg/L	1	20-Dec-2023 20:48
Chromium	0.000577	J	0.000400	0.00400	mg/L	1	20-Dec-2023 20:48
Iron	1.38		0.0120	0.200	mg/L	1	20-Dec-2023 20:48
Lead	U		0.000600	0.00200	mg/L	1	20-Dec-2023 20:48
Magnesium	7.40		0.0100	0.200	mg/L	1	20-Dec-2023 20:48
Manganese	0.411		0.000700	0.00500	mg/L	1	20-Dec-2023 20:48
Nickel	U		0.000600	0.00200	mg/L	1	20-Dec-2023 20:48
Potassium	2.61		0.0180	0.200	mg/L	1	20-Dec-2023 20:48
Selenium	U		0.00110	0.00200	mg/L	1	20-Dec-2023 20:48
Silver	U		0.000200	0.00200	mg/L	1	20-Dec-2023 20:48
Sodium	25.4		0.0140	0.200	mg/L	1	20-Dec-2023 20:48
Strontium	0.201		0.000200	0.00500	mg/L	1	20-Dec-2023 20:48
Vanadium	U		0.000600	0.00500	mg/L	1	20-Dec-2023 20:48
Zinc	0.00244	J	0.00200	0.00400	mg/L	1	20-Dec-2023 20:48
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	20-Dec-2023 15:58
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	20-Dec-2023 15:10
<b>TOTAL DISSOLVED SOLIDS BY SM2540C -2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	138		5.00	10.0	mg/L	1	18-Dec-2023 13:30
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	116		3.50	5.00	mg/L	1	20-Dec-2023 16:35
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 16:35
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	20-Dec-2023 14:48
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.75	H	0.100	0.100	pH Units	1	20-Dec-2023 16:35
Temp Deg C @pH	20.3	H	0	0	°C	1	20-Dec-2023 16:35
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	20-Dec-2023 05:06
Chloride	23.6		0.200	0.500	mg/L	1	20-Dec-2023 05:06
Sulfate	4.04		0.200	0.500	mg/L	1	20-Dec-2023 05:06

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: WW #13  
 Collection Date: 14-Dec-2023 09:00

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-26  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: AKP			
Benzene	U		0.20	1.0	ug/L	1	17-Dec-2023 05:22
Ethylbenzene	U		0.30	1.0	ug/L	1	17-Dec-2023 05:22
m,p-Xylene	U		0.50	2.0	ug/L	1	17-Dec-2023 05:22
o-Xylene	U		0.30	1.0	ug/L	1	17-Dec-2023 05:22
Toluene	U		0.20	1.0	ug/L	1	17-Dec-2023 05:22
Xylenes, Total	U		0.30	1.0	ug/L	1	17-Dec-2023 05:22
<i>Surr: 1,2-Dichloroethane-d4</i>	105			70-126	%REC	1	17-Dec-2023 05:22
<i>Surr: 4-Bromofluorobenzene</i>	98.6			77-113	%REC	1	17-Dec-2023 05:22
<i>Surr: Dibromofluoromethane</i>	104			77-123	%REC	1	17-Dec-2023 05:22
<i>Surr: Toluene-d8</i>	97.5			82-127	%REC	1	17-Dec-2023 05:22
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: FT			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	18-Dec-2023 20:32
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 20:32
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 20:32
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	71.9			70-130	%REC	1	18-Dec-2023 20:32
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	74.7			70-130	%REC	1	18-Dec-2023 20:32
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 18-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	20-Dec-2023 20:00
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	20-Dec-2023 20:00
<b>Aliphatics &gt;C16 - C35</b>	<b>0.0205</b>		<b>0.00800</b>	<b>0.00800</b>	<b>mg/L</b>	1	20-Dec-2023 20:00
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	20-Dec-2023 20:00
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	20-Dec-2023 20:00
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	20-Dec-2023 20:00
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	20-Dec-2023 20:00
<i>Surr: 1-Chlorooctadecane</i>	58.2			40-140	%REC	1	20-Dec-2023 20:00
<i>Surr: 2-Bromonaphthalene</i>	89.8			40-140	%REC	1	20-Dec-2023 20:00
<i>Surr: 2-Fluorobiphenyl</i>	93.2			40-140	%REC	1	20-Dec-2023 20:00
<i>Surr: o-Terphenyl</i>	61.1			40-140	%REC	1	20-Dec-2023 20:00

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: WW #13  
 Collection Date: 14-Dec-2023 09:00

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-26  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 19-Dec-2023		Analyst: MSC	
Arsenic		U	0.000400	0.00200	mg/L	1	20-Dec-2023 20:50
<b>Barium</b>	<b>0.206</b>		<b>0.00190</b>	<b>0.00400</b>	<b>mg/L</b>	1	20-Dec-2023 20:50
Cadmium		U	0.000200	0.00200	mg/L	1	20-Dec-2023 20:50
<b>Calcium</b>	<b>23.5</b>		<b>0.0340</b>	<b>0.500</b>	<b>mg/L</b>	1	20-Dec-2023 20:50
<b>Chromium</b>	<b>0.000929</b>	J	<b>0.000400</b>	<b>0.00400</b>	<b>mg/L</b>	1	20-Dec-2023 20:50
<b>Iron</b>	<b>4.70</b>		<b>0.0120</b>	<b>0.200</b>	<b>mg/L</b>	1	20-Dec-2023 20:50
Lead		U	0.000600	0.00200	mg/L	1	20-Dec-2023 20:50
<b>Magnesium</b>	<b>7.08</b>		<b>0.0100</b>	<b>0.200</b>	<b>mg/L</b>	1	20-Dec-2023 20:50
<b>Manganese</b>	<b>0.388</b>		<b>0.000700</b>	<b>0.00500</b>	<b>mg/L</b>	1	20-Dec-2023 20:50
<b>Nickel</b>	<b>0.000872</b>	J	<b>0.000600</b>	<b>0.00200</b>	<b>mg/L</b>	1	20-Dec-2023 20:50
<b>Potassium</b>	<b>2.54</b>		<b>0.0180</b>	<b>0.200</b>	<b>mg/L</b>	1	20-Dec-2023 20:50
Selenium		U	0.00110	0.00200	mg/L	1	20-Dec-2023 20:50
Silver		U	0.000200	0.00200	mg/L	1	20-Dec-2023 20:50
<b>Sodium</b>	<b>24.4</b>		<b>0.0140</b>	<b>0.200</b>	<b>mg/L</b>	1	20-Dec-2023 20:50
<b>Strontium</b>	<b>0.192</b>		<b>0.000200</b>	<b>0.00500</b>	<b>mg/L</b>	1	20-Dec-2023 20:50
Vanadium		U	0.000600	0.00500	mg/L	1	20-Dec-2023 20:50
<b>Zinc</b>	<b>0.00922</b>		<b>0.00200</b>	<b>0.00400</b>	<b>mg/L</b>	1	20-Dec-2023 20:50
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury		U	0.0000300	0.000200	mg/L	1	20-Dec-2023 15:59
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide		U	0.500	1.00	mg/L	1	20-Dec-2023 15:10
<b>TOTAL DISSOLVED SOLIDS BY SM2540C -2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	<b>158</b>		<b>5.00</b>	<b>10.0</b>	<b>mg/L</b>	1	18-Dec-2023 13:30
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	<b>113</b>		<b>3.50</b>	<b>5.00</b>	<b>mg/L</b>	1	20-Dec-2023 16:40
Alkalinity, Carbonate (As CaCO3)		U	3.50	5.00	mg/L	1	20-Dec-2023 16:40
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide		U	1.70	2.00	mg/L	1	20-Dec-2023 14:48
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	<b>7.57</b>	H	<b>0.100</b>	<b>0.100</b>	<b>pH Units</b>	1	20-Dec-2023 16:40
Temp Deg C @pH	<b>20.5</b>	H	<b>0</b>	<b>0</b>	<b>°C</b>	1	20-Dec-2023 16:40
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide		U	0.0300	0.100	mg/L	1	20-Dec-2023 05:18
<b>Chloride</b>	<b>23.8</b>		<b>0.200</b>	<b>0.500</b>	<b>mg/L</b>	1	20-Dec-2023 05:18
<b>Sulfate</b>	<b>4.42</b>		<b>0.200</b>	<b>0.500</b>	<b>mg/L</b>	1	20-Dec-2023 05:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: Cottages Well  
 Collection Date: 14-Dec-2023 09:15

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-27  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: AKP			
Benzene	U		0.20	1.0	ug/L	1	17-Dec-2023 05:43
Ethylbenzene	U		0.30	1.0	ug/L	1	17-Dec-2023 05:43
m,p-Xylene	U		0.50	2.0	ug/L	1	17-Dec-2023 05:43
o-Xylene	U		0.30	1.0	ug/L	1	17-Dec-2023 05:43
Toluene	U		0.20	1.0	ug/L	1	17-Dec-2023 05:43
Xylenes, Total	U		0.30	1.0	ug/L	1	17-Dec-2023 05:43
<i>Surr: 1,2-Dichloroethane-d4</i>	108			70-126	%REC	1	17-Dec-2023 05:43
<i>Surr: 4-Bromofluorobenzene</i>	97.5			77-113	%REC	1	17-Dec-2023 05:43
<i>Surr: Dibromofluoromethane</i>	105			77-123	%REC	1	17-Dec-2023 05:43
<i>Surr: Toluene-d8</i>	99.2			82-127	%REC	1	17-Dec-2023 05:43
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: FT			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	18-Dec-2023 21:11
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 21:11
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 21:11
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	72.2			70-130	%REC	1	18-Dec-2023 21:11
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	76.3			70-130	%REC	1	18-Dec-2023 21:11
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 18-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	20-Dec-2023 20:29
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	20-Dec-2023 20:29
<b>Aliphatics &gt;C16 - C35</b>	<b>0.0216</b>		<b>0.00800</b>	<b>0.00800</b>	<b>mg/L</b>	1	20-Dec-2023 20:29
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	20-Dec-2023 20:29
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	20-Dec-2023 20:29
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	20-Dec-2023 20:29
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	20-Dec-2023 20:29
<i>Surr: 1-Chlorooctadecane</i>	48.4			40-140	%REC	1	20-Dec-2023 20:29
<i>Surr: 2-Bromonaphthalene</i>	95.6			40-140	%REC	1	20-Dec-2023 20:29
<i>Surr: 2-Fluorobiphenyl</i>	98.7			40-140	%REC	1	20-Dec-2023 20:29
<i>Surr: o-Terphenyl</i>	63.9			40-140	%REC	1	20-Dec-2023 20:29

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: Cottages Well  
 Collection Date: 14-Dec-2023 09:15

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-27  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 19-Dec-2023		Analyst: MSC	
Arsenic		U	0.000400	0.00200	mg/L	1	20-Dec-2023 20:51
<b>Barium</b>	<b>0.188</b>		<b>0.00190</b>	<b>0.00400</b>	<b>mg/L</b>	1	20-Dec-2023 20:51
Cadmium		U	0.000200	0.00200	mg/L	1	20-Dec-2023 20:51
<b>Calcium</b>	<b>13.8</b>		<b>0.0340</b>	<b>0.500</b>	<b>mg/L</b>	1	20-Dec-2023 20:51
<b>Chromium</b>	<b>0.000404</b>	J	<b>0.000400</b>	<b>0.00400</b>	<b>mg/L</b>	1	20-Dec-2023 20:51
<b>Iron</b>	<b>3.32</b>		<b>0.0120</b>	<b>0.200</b>	<b>mg/L</b>	1	20-Dec-2023 20:51
Lead		U	0.000600	0.00200	mg/L	1	20-Dec-2023 20:51
<b>Magnesium</b>	<b>3.85</b>		<b>0.0100</b>	<b>0.200</b>	<b>mg/L</b>	1	20-Dec-2023 20:51
<b>Manganese</b>	<b>0.182</b>		<b>0.000700</b>	<b>0.00500</b>	<b>mg/L</b>	1	20-Dec-2023 20:51
Nickel		U	0.000600	0.00200	mg/L	1	20-Dec-2023 20:51
<b>Potassium</b>	<b>2.18</b>		<b>0.0180</b>	<b>0.200</b>	<b>mg/L</b>	1	20-Dec-2023 20:51
Selenium		U	0.00110	0.00200	mg/L	1	20-Dec-2023 20:51
Silver		U	0.000200	0.00200	mg/L	1	20-Dec-2023 20:51
<b>Sodium</b>	<b>72.5</b>		<b>0.0140</b>	<b>0.200</b>	<b>mg/L</b>	1	20-Dec-2023 20:51
<b>Strontium</b>	<b>0.161</b>		<b>0.000200</b>	<b>0.00500</b>	<b>mg/L</b>	1	20-Dec-2023 20:51
Vanadium		U	0.000600	0.00500	mg/L	1	20-Dec-2023 20:51
<b>Zinc</b>	<b>0.151</b>		<b>0.00200</b>	<b>0.00400</b>	<b>mg/L</b>	1	20-Dec-2023 20:51
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury		U	0.0000300	0.000200	mg/L	1	20-Dec-2023 16:01
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide		U	0.500	1.00	mg/L	1	20-Dec-2023 15:10
<b>TOTAL DISSOLVED SOLIDS BY SM2540C -2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	<b>200</b>		<b>5.00</b>	<b>10.0</b>	<b>mg/L</b>	1	18-Dec-2023 13:30
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	<b>144</b>		<b>3.50</b>	<b>5.00</b>	<b>mg/L</b>	1	20-Dec-2023 16:45
Alkalinity, Carbonate (As CaCO3)		U	3.50	5.00	mg/L	1	20-Dec-2023 16:45
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide		U	1.70	2.00	mg/L	1	20-Dec-2023 14:48
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	<b>7.49</b>	H	<b>0.100</b>	<b>0.100</b>	<b>pH Units</b>	1	20-Dec-2023 16:45
Temp Deg C @pH	<b>20.6</b>	H	<b>0</b>	<b>0</b>	<b>°C</b>	1	20-Dec-2023 16:45
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	<b>0.152</b>		<b>0.0300</b>	<b>0.100</b>	<b>mg/L</b>	1	20-Dec-2023 05:30
Chloride	<b>56.8</b>		<b>0.200</b>	<b>0.500</b>	<b>mg/L</b>	1	20-Dec-2023 05:30
Sulfate	<b>0.322</b>	J	<b>0.200</b>	<b>0.500</b>	<b>mg/L</b>	1	20-Dec-2023 05:30

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: WW #40  
 Collection Date: 14-Dec-2023 10:30

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-28  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: AKP			
Benzene	U		0.20	1.0	ug/L	1	17-Dec-2023 06:04
Ethylbenzene	U		0.30	1.0	ug/L	1	17-Dec-2023 06:04
m,p-Xylene	U		0.50	2.0	ug/L	1	17-Dec-2023 06:04
o-Xylene	U		0.30	1.0	ug/L	1	17-Dec-2023 06:04
Toluene	U		0.20	1.0	ug/L	1	17-Dec-2023 06:04
Xylenes, Total	U		0.30	1.0	ug/L	1	17-Dec-2023 06:04
<i>Surr: 1,2-Dichloroethane-d4</i>	106			70-126	%REC	1	17-Dec-2023 06:04
<i>Surr: 4-Bromofluorobenzene</i>	99.4			77-113	%REC	1	17-Dec-2023 06:04
<i>Surr: Dibromofluoromethane</i>	104			77-123	%REC	1	17-Dec-2023 06:04
<i>Surr: Toluene-d8</i>	99.2			82-127	%REC	1	17-Dec-2023 06:04
<b>MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>		<b>Method:MA VPH</b>		Analyst: FT			
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	18-Dec-2023 23:07
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 23:07
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	18-Dec-2023 23:07
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	73.2			70-130	%REC	1	18-Dec-2023 23:07
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	75.8			70-130	%REC	1	18-Dec-2023 23:07
<b>MASSACHUSETTS EPH R2.1, DEC 2019</b>		<b>Method:MA EPH</b>		Prep:SW3510 / 18-Dec-2023		Analyst: SAM	
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	20-Dec-2023 20:58
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	20-Dec-2023 20:58
<b>Aliphatics &gt;C16 - C35</b>	<b>0.0191</b>		<b>0.00800</b>	<b>0.00800</b>	<b>mg/L</b>	1	20-Dec-2023 20:58
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	20-Dec-2023 20:58
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	20-Dec-2023 20:58
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	20-Dec-2023 20:58
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	20-Dec-2023 20:58
<i>Surr: 1-Chlorooctadecane</i>	51.1			40-140	%REC	1	20-Dec-2023 20:58
<i>Surr: 2-Bromonaphthalene</i>	95.2			40-140	%REC	1	20-Dec-2023 20:58
<i>Surr: 2-Fluorobiphenyl</i>	98.2			40-140	%REC	1	20-Dec-2023 20:58
<i>Surr: o-Terphenyl</i>	61.6			40-140	%REC	1	20-Dec-2023 20:58

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Client: Environmental Resources Mgmt.  
 Project: Sulphur Dome  
 Sample ID: WW #40  
 Collection Date: 14-Dec-2023 10:30

**ANALYTICAL REPORT**  
 WorkOrder:HS23120955  
 Lab ID:HS23120955-28  
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>ICP-MS METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3010A / 19-Dec-2023		Analyst: MSC	
Arsenic	0.00215		0.000400	0.00200	mg/L	1	20-Dec-2023 20:53
Barium	0.389		0.00190	0.00400	mg/L	1	20-Dec-2023 20:53
Cadmium	U		0.000200	0.00200	mg/L	1	20-Dec-2023 20:53
Calcium	26.5		0.0340	0.500	mg/L	1	20-Dec-2023 20:53
Chromium	0.00123	J	0.000400	0.00400	mg/L	1	20-Dec-2023 20:53
Iron	68.1		0.0120	0.200	mg/L	1	20-Dec-2023 20:53
Lead	U		0.000600	0.00200	mg/L	1	20-Dec-2023 20:53
Magnesium	7.76		0.0100	0.200	mg/L	1	20-Dec-2023 20:53
Manganese	0.728		0.000700	0.00500	mg/L	1	20-Dec-2023 20:53
Nickel	0.00133	J	0.000600	0.00200	mg/L	1	20-Dec-2023 20:53
Potassium	2.65		0.0180	0.200	mg/L	1	20-Dec-2023 20:53
Selenium	U		0.00110	0.00200	mg/L	1	20-Dec-2023 20:53
Silver	U		0.000200	0.00200	mg/L	1	20-Dec-2023 20:53
Sodium	25.7		0.0140	0.200	mg/L	1	20-Dec-2023 20:53
Strontium	0.237		0.000200	0.00500	mg/L	1	20-Dec-2023 20:53
Vanadium	U		0.000600	0.00500	mg/L	1	20-Dec-2023 20:53
Zinc	0.0362		0.00200	0.00400	mg/L	1	20-Dec-2023 20:53
<b>MERCURY BY SW7470A</b>		<b>Method:SW7470A</b>		Prep:SW7470A / 20-Dec-2023		Analyst: JS	
Mercury	U		0.0000300	0.000200	mg/L	1	20-Dec-2023 16:03
<b>HYDROGEN SULFIDE BY E376.1</b>		<b>Method:E376.1</b>				Analyst: CD	
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	20-Dec-2023 15:10
<b>TOTAL DISSOLVED SOLIDS BY SM2540C -2011</b>		<b>Method:M2540C</b>				Analyst: DC	
Total Dissolved Solids (Residue, Filterable)	120		5.00	10.0	mg/L	1	18-Dec-2023 13:30
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>				Analyst: DW	
Alkalinity, Bicarbonate (As CaCO3)	114		3.50	5.00	mg/L	1	20-Dec-2023 16:51
Alkalinity, Carbonate (As CaCO3)	U		3.50	5.00	mg/L	1	20-Dec-2023 16:51
<b>SULFIDE BY SM4500 S2-F-2011</b>		<b>Method:SM4500 S2-F</b>				Analyst: CD	
Sulfide	U		1.70	2.00	mg/L	1	20-Dec-2023 14:48
<b>PH BY SM4500H+ B-2011</b>		<b>Method:SM4500H+ B</b>				Analyst: DW	
pH	7.66	H	0.100	0.100	pH Units	1	20-Dec-2023 16:51
Temp Deg C @pH	20.6	H	0	0	°C	1	20-Dec-2023 16:51
<b>ANIONS BY SW9056A</b>		<b>Method:SW9056</b>				Analyst: TH	
Bromide	U		0.0300	0.100	mg/L	1	20-Dec-2023 05:41
Chloride	24.4		0.200	0.500	mg/L	1	20-Dec-2023 05:41
Sulfate	3.16		0.200	0.500	mg/L	1	20-Dec-2023 05:41

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

Weight / Prep Log

**Client:** Environmental Resources Mgmt.

**Project:** Sulphur Dome

**WorkOrder:** HS23120955

<b>Batch ID:</b> 204917	<b>Start Date:</b> 16 Dec 2023 08:00	<b>End Date:</b> 16 Dec 2023 08:00
<b>Method:</b> WATER - SW3010A	<b>Prep Code:</b> 3010A	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23120955-01		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-02		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-03		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-04		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-05		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-06		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-07		10 (mL)	10 (mL)	1	120 plastic HNO3

<b>Batch ID:</b> 204938	<b>Start Date:</b> 17 Dec 2023 12:09	<b>End Date:</b> 17 Dec 2023 12:09
<b>Method:</b> MA EPH EXTRACTION-FRACTIONATION	<b>Prep Code:</b> MA EPH_WPR	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23120955-01	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-02	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-03	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-04	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-05	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-06	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-07	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-08	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-09	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-10	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-11	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-12	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-13	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-14	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-15	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-16	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-17	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-18	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-19	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2

Weight / Prep Log

**Client:** Environmental Resources Mgmt.

**Project:** Sulphur Dome

**WorkOrder:** HS23120955

<b>Batch ID:</b> 204946	<b>Start Date:</b> 18 Dec 2023 09:00	<b>End Date:</b> 18 Dec 2023 09:00
<b>Method:</b> WATER - SW3010A	<b>Prep Code:</b> 3010A	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23120955-08		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-09		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-10		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-11		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-12		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-13		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-14		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-15		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-16		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-17		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-18		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-19		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-20		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-21		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-22		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-23		10 (mL)	10 (mL)	1	120 plastic HNO3

<b>Batch ID:</b> 204967	<b>Start Date:</b> 18 Dec 2023 13:06	<b>End Date:</b> 18 Dec 2023 13:06
<b>Method:</b> MA EPH EXTRACTION-FRACTIONATION	<b>Prep Code:</b> MA EPH_WPR	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23120955-20	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-21	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-22	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-23	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-24	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-25	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-26	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-27	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23120955-28	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2

<b>Batch ID:</b> 204996	<b>Start Date:</b> 19 Dec 2023 08:30	<b>End Date:</b> 19 Dec 2023 08:30
<b>Method:</b> WATER - SW3010A	<b>Prep Code:</b> 3010A	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23120955-24		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-25		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-26		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-27		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-28		10 (mL)	10 (mL)	1	120 plastic HNO3

Weight / Prep Log

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**Batch ID:** 205066      **Start Date:** 20 Dec 2023 08:00      **End Date:** 20 Dec 2023 08:00  
**Method:** MERCURY PREP BY 7470A- WATER      **Prep Code:** HG\_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23120955-01		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-02		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-03		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-04		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-05		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-06		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-07		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-08		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-09		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-10		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-11		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-12		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-13		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-14		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-15		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-16		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-17		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-18		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-19		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-20		10 (mL)	10 (mL)	1	120 plastic HNO3

**Batch ID:** 205080      **Start Date:** 20 Dec 2023 08:30      **End Date:** 20 Dec 2023 08:30  
**Method:** MERCURY PREP BY 7470A- WATER      **Prep Code:** HG\_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23120955-21		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-22		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-23		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-24		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-25		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-26		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-27		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23120955-28		10 (mL)	10 (mL)	1	120 plastic HNO3

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID:</b> 204917 ( 0 )		<b>Test Name :</b> ICP-MS METALS BY SW6020A			<b>Matrix:</b> Water	
HS23120955-01	BS-1	11 Dec 2023 10:00		16 Dec 2023 08:00	19 Dec 2023 23:38	1
HS23120955-02	7B-BS	12 Dec 2023 15:40		16 Dec 2023 08:00	20 Dec 2023 13:06	500
HS23120955-02	7B-BS	12 Dec 2023 15:40		16 Dec 2023 08:00	20 Dec 2023 11:56	5
HS23120955-03	BS-19	11 Dec 2023 11:45		16 Dec 2023 08:00	20 Dec 2023 12:47	20
HS23120955-03	BS-19	11 Dec 2023 11:45		16 Dec 2023 08:00	19 Dec 2023 23:45	1
HS23120955-04	BS-26	11 Dec 2023 13:30		16 Dec 2023 08:00	19 Dec 2023 23:47	1
HS23120955-05	BS-4	11 Dec 2023 15:40		16 Dec 2023 08:00	20 Dec 2023 12:50	20
HS23120955-05	BS-4	11 Dec 2023 15:40		16 Dec 2023 08:00	19 Dec 2023 23:56	1
HS23120955-06	BS-3	11 Dec 2023 16:30		16 Dec 2023 08:00	20 Dec 2023 13:01	20
HS23120955-06	BS-3	11 Dec 2023 16:30		16 Dec 2023 08:00	20 Dec 2023 00:01	1
HS23120955-07	BS-24	11 Dec 2023 17:00		16 Dec 2023 08:00	20 Dec 2023 13:04	20
HS23120955-07	BS-24	11 Dec 2023 17:00		16 Dec 2023 08:00	20 Dec 2023 00:03	1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID: 204938 ( 0 )</b>		<b>Test Name : MASSACHUSETTS EPH R2.1, DEC 2019</b>			<b>Matrix: Water</b>	
HS23120955-01	BS-1	11 Dec 2023 10:00		17 Dec 2023 12:09	18 Dec 2023 22:01	1
HS23120955-01	BS-1	11 Dec 2023 10:00		17 Dec 2023 12:09	18 Dec 2023 22:01	1
HS23120955-02	7B-BS	12 Dec 2023 15:40		17 Dec 2023 12:09	18 Dec 2023 22:29	1
HS23120955-02	7B-BS	12 Dec 2023 15:40		17 Dec 2023 12:09	18 Dec 2023 22:29	1
HS23120955-03	BS-19	11 Dec 2023 11:45		17 Dec 2023 12:09	19 Dec 2023 15:14	1
HS23120955-03	BS-19	11 Dec 2023 11:45		17 Dec 2023 12:09	19 Dec 2023 15:14	1
HS23120955-04	BS-26	11 Dec 2023 13:30		17 Dec 2023 12:09	21 Dec 2023 10:53	1
HS23120955-04	BS-26	11 Dec 2023 13:30		17 Dec 2023 12:09	21 Dec 2023 10:53	1
HS23120955-05	BS-4	11 Dec 2023 15:40		17 Dec 2023 12:09	19 Dec 2023 16:12	1
HS23120955-05	BS-4	11 Dec 2023 15:40		17 Dec 2023 12:09	19 Dec 2023 16:12	1
HS23120955-06	BS-3	11 Dec 2023 16:30		17 Dec 2023 12:09	19 Dec 2023 16:40	1
HS23120955-06	BS-3	11 Dec 2023 16:30		17 Dec 2023 12:09	19 Dec 2023 16:40	1
HS23120955-07	BS-24	11 Dec 2023 17:00		17 Dec 2023 12:09	19 Dec 2023 17:09	1
HS23120955-07	BS-24	11 Dec 2023 17:00		17 Dec 2023 12:09	19 Dec 2023 17:09	1
HS23120955-08	BS-8	12 Dec 2023 08:30		17 Dec 2023 12:09	19 Dec 2023 17:38	1
HS23120955-08	BS-8	12 Dec 2023 08:30		17 Dec 2023 12:09	19 Dec 2023 17:38	1
HS23120955-09	BS-12	12 Dec 2023 10:00		17 Dec 2023 12:09	20 Dec 2023 11:15	1
HS23120955-09	BS-12	12 Dec 2023 10:00		17 Dec 2023 12:09	20 Dec 2023 11:15	1
HS23120955-10	BS-7	12 Dec 2023 11:20		17 Dec 2023 12:09	19 Dec 2023 18:35	1
HS23120955-10	BS-7	12 Dec 2023 11:20		17 Dec 2023 12:09	19 Dec 2023 18:35	1
HS23120955-11	BS-6	12 Dec 2023 13:15		17 Dec 2023 12:09	19 Dec 2023 19:04	1
HS23120955-11	BS-6	12 Dec 2023 13:15		17 Dec 2023 12:09	19 Dec 2023 19:04	1
HS23120955-12	BS-25	12 Dec 2023 13:50		17 Dec 2023 12:09	20 Dec 2023 13:38	1
HS23120955-12	BS-25	12 Dec 2023 13:50		17 Dec 2023 12:09	20 Dec 2023 13:38	1
HS23120955-13	BS-23	12 Dec 2023 14:10		17 Dec 2023 12:09	19 Dec 2023 21:27	1
HS23120955-13	BS-23	12 Dec 2023 14:10		17 Dec 2023 12:09	19 Dec 2023 21:27	1
HS23120955-14	7A-BS	11 Dec 2023 11:00		17 Dec 2023 12:09	19 Dec 2023 21:55	1
HS23120955-14	7A-BS	11 Dec 2023 11:00		17 Dec 2023 12:09	19 Dec 2023 21:55	1
HS23120955-15	BS-13	13 Dec 2023 09:15		17 Dec 2023 12:09	19 Dec 2023 22:24	1
HS23120955-15	BS-13	13 Dec 2023 09:15		17 Dec 2023 12:09	19 Dec 2023 22:24	1
HS23120955-16	BS-14	13 Dec 2023 09:30		17 Dec 2023 12:09	21 Dec 2023 11:22	1
HS23120955-16	BS-14	13 Dec 2023 09:30		17 Dec 2023 12:09	21 Dec 2023 11:22	1
HS23120955-17	BS-22	13 Dec 2023 09:50		17 Dec 2023 12:09	21 Dec 2023 11:51	1
HS23120955-17	BS-22	13 Dec 2023 09:50		17 Dec 2023 12:09	21 Dec 2023 11:51	1
HS23120955-18	BS-21	13 Dec 2023 10:50		17 Dec 2023 12:09	21 Dec 2023 12:19	1
HS23120955-18	BS-21	13 Dec 2023 10:50		17 Dec 2023 12:09	21 Dec 2023 12:19	1
HS23120955-19	BS-18	13 Dec 2023 11:00		17 Dec 2023 12:09	20 Dec 2023 00:19	1
HS23120955-19	BS-18	13 Dec 2023 11:00		17 Dec 2023 12:09	20 Dec 2023 00:19	1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID: 204946 ( 0 )</b>		<b>Test Name : ICP-MS METALS BY SW6020A</b>			<b>Matrix: Water</b>	
HS23120955-08	BS-8	12 Dec 2023 08:30		18 Dec 2023 09:00	19 Dec 2023 14:51	100
HS23120955-08	BS-8	12 Dec 2023 08:30		18 Dec 2023 09:00	18 Dec 2023 16:25	1
HS23120955-09	BS-12	12 Dec 2023 10:00		18 Dec 2023 09:00	19 Dec 2023 15:10	100
HS23120955-09	BS-12	12 Dec 2023 10:00		18 Dec 2023 09:00	18 Dec 2023 16:27	1
HS23120955-10	BS-7	12 Dec 2023 11:20		18 Dec 2023 09:00	19 Dec 2023 15:12	100
HS23120955-10	BS-7	12 Dec 2023 11:20		18 Dec 2023 09:00	18 Dec 2023 16:29	1
HS23120955-11	BS-6	12 Dec 2023 13:15		18 Dec 2023 09:00	19 Dec 2023 15:14	100
HS23120955-11	BS-6	12 Dec 2023 13:15		18 Dec 2023 09:00	18 Dec 2023 16:31	1
HS23120955-12	BS-25	12 Dec 2023 13:50		18 Dec 2023 09:00	19 Dec 2023 15:16	100
HS23120955-12	BS-25	12 Dec 2023 13:50		18 Dec 2023 09:00	18 Dec 2023 16:33	1
HS23120955-13	BS-23	12 Dec 2023 14:10		18 Dec 2023 09:00	19 Dec 2023 15:18	100
HS23120955-13	BS-23	12 Dec 2023 14:10		18 Dec 2023 09:00	18 Dec 2023 16:35	1
HS23120955-14	7A-BS	11 Dec 2023 11:00		18 Dec 2023 09:00	18 Dec 2023 16:37	1
HS23120955-15	BS-13	13 Dec 2023 09:15		18 Dec 2023 09:00	19 Dec 2023 15:55	100
HS23120955-15	BS-13	13 Dec 2023 09:15		18 Dec 2023 09:00	18 Dec 2023 16:39	1
HS23120955-16	BS-14	13 Dec 2023 09:30		18 Dec 2023 09:00	19 Dec 2023 16:07	100
HS23120955-16	BS-14	13 Dec 2023 09:30		18 Dec 2023 09:00	18 Dec 2023 17:40	1
HS23120955-17	BS-22	13 Dec 2023 09:50		18 Dec 2023 09:00	19 Dec 2023 16:09	100
HS23120955-17	BS-22	13 Dec 2023 09:50		18 Dec 2023 09:00	18 Dec 2023 17:42	1
HS23120955-18	BS-21	13 Dec 2023 10:50		18 Dec 2023 09:00	19 Dec 2023 16:10	100
HS23120955-18	BS-21	13 Dec 2023 10:50		18 Dec 2023 09:00	18 Dec 2023 17:44	1
HS23120955-19	BS-18	13 Dec 2023 11:00		18 Dec 2023 09:00	19 Dec 2023 16:50	100
HS23120955-19	BS-18	13 Dec 2023 11:00		18 Dec 2023 09:00	18 Dec 2023 17:46	1
HS23120955-20	BS-5	13 Dec 2023 13:15		18 Dec 2023 09:00	19 Dec 2023 16:52	100
HS23120955-20	BS-5	13 Dec 2023 13:15		18 Dec 2023 09:00	18 Dec 2023 17:47	1
HS23120955-21	BS-17	13 Dec 2023 14:20		18 Dec 2023 09:00	19 Dec 2023 16:54	100
HS23120955-21	BS-17	13 Dec 2023 14:20		18 Dec 2023 09:00	18 Dec 2023 17:49	1
HS23120955-22	BS-9	13 Dec 2023 15:25		18 Dec 2023 09:00	19 Dec 2023 16:56	100
HS23120955-22	BS-9	13 Dec 2023 15:25		18 Dec 2023 09:00	18 Dec 2023 17:51	1
HS23120955-23	WW #19	14 Dec 2023 07:45		18 Dec 2023 09:00	18 Dec 2023 17:53	1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID: 204967 ( 0 )</b>		<b>Test Name : MASSACHUSETTS EPH R2.1, DEC 2019</b>			<b>Matrix: Water</b>	
HS23120955-20	BS-5	13 Dec 2023 13:15		18 Dec 2023 13:06	21 Dec 2023 12:48	1
HS23120955-21	BS-17	13 Dec 2023 14:20		18 Dec 2023 13:06	20 Dec 2023 17:37	1
HS23120955-22	BS-9	13 Dec 2023 15:25		18 Dec 2023 13:06	20 Dec 2023 18:06	1
HS23120955-23	WW #19	14 Dec 2023 07:45		18 Dec 2023 13:06	20 Dec 2023 18:34	1
HS23120955-24	WW #11	14 Dec 2023 08:00		18 Dec 2023 13:06	21 Dec 2023 13:17	1
HS23120955-25	WW #12	14 Dec 2023 08:45		18 Dec 2023 13:06	20 Dec 2023 19:32	1
HS23120955-26	WW #13	14 Dec 2023 09:00		18 Dec 2023 13:06	20 Dec 2023 20:00	1
HS23120955-27	Cottages Well	14 Dec 2023 09:15		18 Dec 2023 13:06	20 Dec 2023 20:29	1
HS23120955-28	WW #40	14 Dec 2023 10:30		18 Dec 2023 13:06	20 Dec 2023 20:58	1
<b>Batch ID: 204967 ( 1 )</b>		<b>Test Name : MASSACHUSETTS EPH R2.1, DEC 2019</b>			<b>Matrix: Water</b>	
HS23120955-20	BS-5	13 Dec 2023 13:15		18 Dec 2023 13:06	21 Dec 2023 12:48	1
HS23120955-21	BS-17	13 Dec 2023 14:20		18 Dec 2023 13:06	20 Dec 2023 17:37	1
HS23120955-22	BS-9	13 Dec 2023 15:25		18 Dec 2023 13:06	20 Dec 2023 18:06	1
HS23120955-23	WW #19	14 Dec 2023 07:45		18 Dec 2023 13:06	20 Dec 2023 18:34	1
HS23120955-24	WW #11	14 Dec 2023 08:00		18 Dec 2023 13:06	21 Dec 2023 13:17	1
HS23120955-25	WW #12	14 Dec 2023 08:45		18 Dec 2023 13:06	20 Dec 2023 19:32	1
HS23120955-26	WW #13	14 Dec 2023 09:00		18 Dec 2023 13:06	20 Dec 2023 20:00	1
HS23120955-27	Cottages Well	14 Dec 2023 09:15		18 Dec 2023 13:06	20 Dec 2023 20:29	1
HS23120955-28	WW #40	14 Dec 2023 10:30		18 Dec 2023 13:06	20 Dec 2023 20:58	1
<b>Batch ID: 204996 ( 0 )</b>		<b>Test Name : ICP-MS METALS BY SW6020A</b>			<b>Matrix: Water</b>	
HS23120955-24	WW #11	14 Dec 2023 08:00		19 Dec 2023 08:30	20 Dec 2023 20:46	1
HS23120955-25	WW #12	14 Dec 2023 08:45		19 Dec 2023 08:30	20 Dec 2023 20:48	1
HS23120955-26	WW #13	14 Dec 2023 09:00		19 Dec 2023 08:30	20 Dec 2023 20:50	1
HS23120955-27	Cottages Well	14 Dec 2023 09:15		19 Dec 2023 08:30	20 Dec 2023 20:51	1
HS23120955-28	WW #40	14 Dec 2023 10:30		19 Dec 2023 08:30	20 Dec 2023 20:53	1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID: 205066 ( 0 )</b>		<b>Test Name : MERCURY BY SW7470A</b>			<b>Matrix: Water</b>	
HS23120955-01	BS-1	11 Dec 2023 10:00		20 Dec 2023 08:00	20 Dec 2023 11:59	1
HS23120955-02	7B-BS	12 Dec 2023 15:40		20 Dec 2023 08:00	20 Dec 2023 12:01	1
HS23120955-03	BS-19	11 Dec 2023 11:45		20 Dec 2023 08:00	20 Dec 2023 12:02	1
HS23120955-04	BS-26	11 Dec 2023 13:30		20 Dec 2023 08:00	20 Dec 2023 12:04	1
HS23120955-05	BS-4	11 Dec 2023 15:40		20 Dec 2023 08:00	20 Dec 2023 12:06	1
HS23120955-06	BS-3	11 Dec 2023 16:30		20 Dec 2023 08:00	20 Dec 2023 12:07	1
HS23120955-07	BS-24	11 Dec 2023 17:00		20 Dec 2023 08:00	20 Dec 2023 12:09	1
HS23120955-08	BS-8	12 Dec 2023 08:30		20 Dec 2023 08:00	20 Dec 2023 12:11	1
HS23120955-09	BS-12	12 Dec 2023 10:00		20 Dec 2023 08:00	20 Dec 2023 14:16	1
HS23120955-10	BS-7	12 Dec 2023 11:20		20 Dec 2023 08:00	20 Dec 2023 14:18	1
HS23120955-11	BS-6	12 Dec 2023 13:15		20 Dec 2023 08:00	20 Dec 2023 14:20	1
HS23120955-12	BS-25	12 Dec 2023 13:50		20 Dec 2023 08:00	20 Dec 2023 14:22	1
HS23120955-13	BS-23	12 Dec 2023 14:10		20 Dec 2023 08:00	20 Dec 2023 14:23	1
HS23120955-14	7A-BS	11 Dec 2023 11:00		20 Dec 2023 08:00	20 Dec 2023 14:25	1
HS23120955-15	BS-13	13 Dec 2023 09:15		20 Dec 2023 08:00	20 Dec 2023 14:27	1
HS23120955-16	BS-14	13 Dec 2023 09:30		20 Dec 2023 08:00	20 Dec 2023 14:28	1
HS23120955-17	BS-22	13 Dec 2023 09:50		20 Dec 2023 08:00	20 Dec 2023 14:38	1
HS23120955-18	BS-21	13 Dec 2023 10:50		20 Dec 2023 08:00	20 Dec 2023 14:40	1
HS23120955-19	BS-18	13 Dec 2023 11:00		20 Dec 2023 08:00	20 Dec 2023 14:42	1
HS23120955-20	BS-5	13 Dec 2023 13:15		20 Dec 2023 08:00	20 Dec 2023 14:44	1
<b>Batch ID: 205080 ( 0 )</b>		<b>Test Name : MERCURY BY SW7470A</b>			<b>Matrix: Water</b>	
HS23120955-21	BS-17	13 Dec 2023 14:20		20 Dec 2023 08:30	20 Dec 2023 15:42	1
HS23120955-22	BS-9	13 Dec 2023 15:25		20 Dec 2023 08:30	20 Dec 2023 15:47	1
HS23120955-23	WW #19	14 Dec 2023 07:45		20 Dec 2023 08:30	20 Dec 2023 15:54	1
HS23120955-24	WW #11	14 Dec 2023 08:00		20 Dec 2023 08:30	20 Dec 2023 15:56	1
HS23120955-25	WW #12	14 Dec 2023 08:45		20 Dec 2023 08:30	20 Dec 2023 15:58	1
HS23120955-26	WW #13	14 Dec 2023 09:00		20 Dec 2023 08:30	20 Dec 2023 15:59	1
HS23120955-27	Cottages Well	14 Dec 2023 09:15		20 Dec 2023 08:30	20 Dec 2023 16:01	1
HS23120955-28	WW #40	14 Dec 2023 10:30		20 Dec 2023 08:30	20 Dec 2023 16:03	1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID: R454284 ( 0 )</b>		<b>Test Name : SULFIDE BY SM4500 S2-F-2011</b>			<b>Matrix: Water</b>	
HS23120955-01	BS-1	11 Dec 2023 10:00			15 Dec 2023 13:59	1
HS23120955-02	7B-BS	12 Dec 2023 15:40			15 Dec 2023 13:59	1
HS23120955-03	BS-19	11 Dec 2023 11:45			15 Dec 2023 13:59	1
HS23120955-04	BS-26	11 Dec 2023 13:30			15 Dec 2023 13:59	1
HS23120955-05	BS-4	11 Dec 2023 15:40			15 Dec 2023 13:59	1
HS23120955-06	BS-3	11 Dec 2023 16:30			15 Dec 2023 13:59	1
HS23120955-07	BS-24	11 Dec 2023 17:00			15 Dec 2023 13:59	1
HS23120955-08	BS-8	12 Dec 2023 08:30			15 Dec 2023 13:59	1
HS23120955-09	BS-12	12 Dec 2023 10:00			15 Dec 2023 13:59	1
HS23120955-10	BS-7	12 Dec 2023 11:20			15 Dec 2023 13:59	1
HS23120955-11	BS-6	12 Dec 2023 13:15			15 Dec 2023 13:59	1
HS23120955-12	BS-25	12 Dec 2023 13:50			15 Dec 2023 13:59	1
HS23120955-13	BS-23	12 Dec 2023 14:10			15 Dec 2023 13:59	1
HS23120955-14	7A-BS	11 Dec 2023 11:00			15 Dec 2023 13:59	1
HS23120955-15	BS-13	13 Dec 2023 09:15			15 Dec 2023 13:59	1
HS23120955-16	BS-14	13 Dec 2023 09:30			15 Dec 2023 13:59	1
<b>Batch ID: R454290 ( 0 )</b>		<b>Test Name : HYDROGEN SULFIDE BY E376.1</b>			<b>Matrix: Water</b>	
HS23120955-01	BS-1	11 Dec 2023 10:00			15 Dec 2023 14:23	1
HS23120955-02	7B-BS	12 Dec 2023 15:40			15 Dec 2023 14:23	1
HS23120955-03	BS-19	11 Dec 2023 11:45			15 Dec 2023 14:23	1
HS23120955-04	BS-26	11 Dec 2023 13:30			15 Dec 2023 14:23	1
HS23120955-05	BS-4	11 Dec 2023 15:40			15 Dec 2023 14:23	1
HS23120955-06	BS-3	11 Dec 2023 16:30			15 Dec 2023 14:23	1
HS23120955-07	BS-24	11 Dec 2023 17:00			15 Dec 2023 14:23	1
HS23120955-08	BS-8	12 Dec 2023 08:30			15 Dec 2023 14:23	1
HS23120955-09	BS-12	12 Dec 2023 10:00			15 Dec 2023 14:23	1
HS23120955-10	BS-7	12 Dec 2023 11:20			15 Dec 2023 14:23	1
HS23120955-11	BS-6	12 Dec 2023 13:15			15 Dec 2023 14:23	1
HS23120955-12	BS-25	12 Dec 2023 13:50			15 Dec 2023 14:23	1
HS23120955-13	BS-23	12 Dec 2023 14:10			15 Dec 2023 14:23	1
HS23120955-14	7A-BS	11 Dec 2023 11:00			15 Dec 2023 14:23	1
HS23120955-15	BS-13	13 Dec 2023 09:15			15 Dec 2023 14:23	1
HS23120955-16	BS-14	13 Dec 2023 09:30			15 Dec 2023 14:23	1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID: R454350 ( 0 )</b>		<b>Test Name : LOW LEVEL VOLATILES BY SW8260C</b>			<b>Matrix: Water</b>	
HS23120955-01	BS-1	11 Dec 2023 10:00			15 Dec 2023 22:52	1
HS23120955-02	7B-BS	12 Dec 2023 15:40			15 Dec 2023 23:13	1
HS23120955-03	BS-19	11 Dec 2023 11:45			15 Dec 2023 23:34	1
HS23120955-04	BS-26	11 Dec 2023 13:30			15 Dec 2023 23:55	1
HS23120955-05	BS-4	11 Dec 2023 15:40			16 Dec 2023 00:16	1
HS23120955-06	BS-3	11 Dec 2023 16:30			16 Dec 2023 00:37	1
HS23120955-07	BS-24	11 Dec 2023 17:00			16 Dec 2023 00:58	1
HS23120955-08	BS-8	12 Dec 2023 08:30			16 Dec 2023 01:19	1
HS23120955-09	BS-12	12 Dec 2023 10:00			16 Dec 2023 01:40	1
HS23120955-10	BS-7	12 Dec 2023 11:20			16 Dec 2023 02:01	1
HS23120955-11	BS-6	12 Dec 2023 13:15			16 Dec 2023 02:22	1
HS23120955-12	BS-25	12 Dec 2023 13:50			16 Dec 2023 02:43	1
HS23120955-13	BS-23	12 Dec 2023 14:10			16 Dec 2023 03:04	1
HS23120955-14	7A-BS	11 Dec 2023 11:00			16 Dec 2023 03:25	1
HS23120955-15	BS-13	13 Dec 2023 09:15			16 Dec 2023 03:46	1
HS23120955-17	BS-22	13 Dec 2023 09:50			16 Dec 2023 04:28	1
HS23120955-18	BS-21	13 Dec 2023 10:50			16 Dec 2023 04:49	1
HS23120955-19	BS-18	13 Dec 2023 11:00			16 Dec 2023 05:10	1
HS23120955-20	BS-5	13 Dec 2023 13:15			16 Dec 2023 05:31	1
<b>Batch ID: R454382 ( 0 )</b>		<b>Test Name : LOW LEVEL VOLATILES BY SW8260C</b>			<b>Matrix: Water</b>	
HS23120955-21	BS-17	13 Dec 2023 14:20			17 Dec 2023 03:37	1
HS23120955-22	BS-9	13 Dec 2023 15:25			17 Dec 2023 03:58	1
HS23120955-23	WW #19	14 Dec 2023 07:45			17 Dec 2023 04:19	1
HS23120955-24	WW #11	14 Dec 2023 08:00			17 Dec 2023 04:40	1
HS23120955-25	WW #12	14 Dec 2023 08:45			17 Dec 2023 05:01	1
HS23120955-26	WW #13	14 Dec 2023 09:00			17 Dec 2023 05:22	1
HS23120955-27	Cottages Well	14 Dec 2023 09:15			17 Dec 2023 05:43	1
HS23120955-28	WW #40	14 Dec 2023 10:30			17 Dec 2023 06:04	1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID:</b> R454472 ( 0 )		<b>Test Name :</b> MASSACHUSETTS VPH, FEB 2018, REV 2.1			<b>Matrix:</b> Water	
HS23120955-01	BS-1	11 Dec 2023 10:00			17 Dec 2023 17:17	1
HS23120955-02	7B-BS	12 Dec 2023 15:40			17 Dec 2023 17:55	1
HS23120955-03	BS-19	11 Dec 2023 11:45			17 Dec 2023 18:33	1
HS23120955-04	BS-26	11 Dec 2023 13:30			17 Dec 2023 19:11	1
HS23120955-05	BS-4	11 Dec 2023 15:40			17 Dec 2023 19:49	1
HS23120955-06	BS-3	11 Dec 2023 16:30			17 Dec 2023 20:28	1
HS23120955-08	BS-8	12 Dec 2023 08:30			17 Dec 2023 23:02	1
HS23120955-09	BS-12	12 Dec 2023 10:00			17 Dec 2023 23:41	1
HS23120955-10	BS-7	12 Dec 2023 11:20			18 Dec 2023 00:20	1
HS23120955-11	BS-6	12 Dec 2023 13:15			18 Dec 2023 00:58	1
HS23120955-12	BS-25	12 Dec 2023 13:50			18 Dec 2023 01:37	1
HS23120955-13	BS-23	12 Dec 2023 14:10			18 Dec 2023 02:15	1
HS23120955-14	7A-BS	11 Dec 2023 11:00			18 Dec 2023 02:54	1
HS23120955-15	BS-13	13 Dec 2023 09:15			18 Dec 2023 03:33	1
HS23120955-16	BS-14	13 Dec 2023 09:30			18 Dec 2023 04:12	1
HS23120955-17	BS-22	13 Dec 2023 09:50			18 Dec 2023 04:50	1
HS23120955-18	BS-21	13 Dec 2023 10:50			18 Dec 2023 06:46	1
HS23120955-19	BS-18	13 Dec 2023 11:00			18 Dec 2023 07:25	1
HS23120955-20	BS-5	13 Dec 2023 13:15			18 Dec 2023 08:04	1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID: R454475 ( 0 )</b>		<b>Test Name : MASSACHUSETTS VPH, FEB 2018, REV 2.1</b>			<b>Matrix: Water</b>	
HS23120955-01	BS-1	11 Dec 2023 10:00			17 Dec 2023 17:17	1
HS23120955-02	7B-BS	12 Dec 2023 15:40			17 Dec 2023 17:55	1
HS23120955-03	BS-19	11 Dec 2023 11:45			17 Dec 2023 18:33	1
HS23120955-04	BS-26	11 Dec 2023 13:30			17 Dec 2023 19:11	1
HS23120955-05	BS-4	11 Dec 2023 15:40			17 Dec 2023 19:49	1
HS23120955-06	BS-3	11 Dec 2023 16:30			17 Dec 2023 20:28	1
HS23120955-08	BS-8	12 Dec 2023 08:30			17 Dec 2023 23:02	1
HS23120955-09	BS-12	12 Dec 2023 10:00			17 Dec 2023 23:41	1
HS23120955-10	BS-7	12 Dec 2023 11:20			18 Dec 2023 00:20	1
HS23120955-11	BS-6	12 Dec 2023 13:15			18 Dec 2023 00:58	1
HS23120955-12	BS-25	12 Dec 2023 13:50			18 Dec 2023 01:37	1
HS23120955-13	BS-23	12 Dec 2023 14:10			18 Dec 2023 02:15	1
HS23120955-14	7A-BS	11 Dec 2023 11:00			18 Dec 2023 02:54	1
HS23120955-15	BS-13	13 Dec 2023 09:15			18 Dec 2023 03:33	1
HS23120955-16	BS-14	13 Dec 2023 09:30			18 Dec 2023 04:12	1
HS23120955-17	BS-22	13 Dec 2023 09:50			18 Dec 2023 04:50	1
HS23120955-18	BS-21	13 Dec 2023 10:50			18 Dec 2023 06:46	1
HS23120955-19	BS-18	13 Dec 2023 11:00			18 Dec 2023 07:25	1
HS23120955-20	BS-5	13 Dec 2023 13:15			18 Dec 2023 08:04	1
<b>Batch ID: R454504 ( 0 )</b>		<b>Test Name : TOTAL DISSOLVED SOLIDS BY SM2540C-2011</b>			<b>Matrix: Water</b>	
HS23120955-01	BS-1	11 Dec 2023 10:00			15 Dec 2023 12:30	1
HS23120955-02	7B-BS	12 Dec 2023 15:40			15 Dec 2023 12:30	1
HS23120955-03	BS-19	11 Dec 2023 11:45			15 Dec 2023 12:30	1
HS23120955-04	BS-26	11 Dec 2023 13:30			15 Dec 2023 12:30	1
HS23120955-05	BS-4	11 Dec 2023 15:40			15 Dec 2023 12:30	1
HS23120955-06	BS-3	11 Dec 2023 16:30			15 Dec 2023 12:30	1
HS23120955-07	BS-24	11 Dec 2023 17:00			15 Dec 2023 12:30	1
<b>Batch ID: R454505 ( 0 )</b>		<b>Test Name : TOTAL DISSOLVED SOLIDS BY SM2540C-2011</b>			<b>Matrix: Water</b>	
HS23120955-08	BS-8	12 Dec 2023 08:30			15 Dec 2023 13:00	1
HS23120955-09	BS-12	12 Dec 2023 10:00			15 Dec 2023 13:00	1
HS23120955-10	BS-7	12 Dec 2023 11:20			15 Dec 2023 13:00	1
HS23120955-11	BS-6	12 Dec 2023 13:15			15 Dec 2023 13:00	1
HS23120955-12	BS-25	12 Dec 2023 13:50			15 Dec 2023 13:00	1
HS23120955-13	BS-23	12 Dec 2023 14:10			15 Dec 2023 13:00	1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID:</b> R454536 ( 0 )		<b>Test Name :</b> MASSACHUSETTS VPH, FEB 2018, REV 2.1			<b>Matrix:</b> Water	
HS23120955-07	BS-24	11 Dec 2023 17:00			19 Dec 2023 01:41	10
HS23120955-21	BS-17	13 Dec 2023 14:20			18 Dec 2023 17:20	1
HS23120955-22	BS-9	13 Dec 2023 15:25			18 Dec 2023 17:58	1
HS23120955-23	WW #19	14 Dec 2023 07:45			18 Dec 2023 18:37	1
HS23120955-24	WW #11	14 Dec 2023 08:00			18 Dec 2023 19:15	1
HS23120955-25	WW #12	14 Dec 2023 08:45			18 Dec 2023 19:54	1
HS23120955-26	WW #13	14 Dec 2023 09:00			18 Dec 2023 20:32	1
HS23120955-27	Cottages Well	14 Dec 2023 09:15			18 Dec 2023 21:11	1
HS23120955-28	WW #40	14 Dec 2023 10:30			18 Dec 2023 23:07	1
<b>Batch ID:</b> R454537 ( 0 )		<b>Test Name :</b> MASSACHUSETTS VPH, FEB 2018, REV 2.1			<b>Matrix:</b> Water	
HS23120955-07	BS-24	11 Dec 2023 17:00			19 Dec 2023 01:41	10
HS23120955-21	BS-17	13 Dec 2023 14:20			18 Dec 2023 17:20	1
HS23120955-22	BS-9	13 Dec 2023 15:25			18 Dec 2023 17:58	1
HS23120955-23	WW #19	14 Dec 2023 07:45			18 Dec 2023 18:37	1
HS23120955-24	WW #11	14 Dec 2023 08:00			18 Dec 2023 19:15	1
HS23120955-25	WW #12	14 Dec 2023 08:45			18 Dec 2023 19:54	1
HS23120955-26	WW #13	14 Dec 2023 09:00			18 Dec 2023 20:32	1
HS23120955-27	Cottages Well	14 Dec 2023 09:15			18 Dec 2023 21:11	1
HS23120955-28	WW #40	14 Dec 2023 10:30			18 Dec 2023 23:07	1
<b>Batch ID:</b> R454578 ( 0 )		<b>Test Name :</b> TOTAL DISSOLVED SOLIDS BY SM2540C-2011			<b>Matrix:</b> Water	
HS23120955-14	7A-BS	11 Dec 2023 11:00			18 Dec 2023 12:27	1
HS23120955-15	BS-13	13 Dec 2023 09:15			18 Dec 2023 12:27	1
HS23120955-16	BS-14	13 Dec 2023 09:30			18 Dec 2023 12:27	1
HS23120955-17	BS-22	13 Dec 2023 09:50			18 Dec 2023 12:27	1
HS23120955-18	BS-21	13 Dec 2023 10:50			18 Dec 2023 12:27	1
HS23120955-19	BS-18	13 Dec 2023 11:00			18 Dec 2023 12:27	1
HS23120955-20	BS-5	13 Dec 2023 13:15			18 Dec 2023 12:27	1
HS23120955-21	BS-17	13 Dec 2023 14:20			18 Dec 2023 12:27	1
HS23120955-22	BS-9	13 Dec 2023 15:25			18 Dec 2023 12:27	1
<b>Batch ID:</b> R454579 ( 0 )		<b>Test Name :</b> TOTAL DISSOLVED SOLIDS BY SM2540C-2011			<b>Matrix:</b> Water	
HS23120955-23	WW #19	14 Dec 2023 07:45			18 Dec 2023 13:30	1
HS23120955-24	WW #11	14 Dec 2023 08:00			18 Dec 2023 13:30	1
HS23120955-25	WW #12	14 Dec 2023 08:45			18 Dec 2023 13:30	1
HS23120955-26	WW #13	14 Dec 2023 09:00			18 Dec 2023 13:30	1
HS23120955-27	Cottages Well	14 Dec 2023 09:15			18 Dec 2023 13:30	1
HS23120955-28	WW #40	14 Dec 2023 10:30			18 Dec 2023 13:30	1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID: R454695 ( 0 )</b>		<b>Test Name : ANIONS BY SW9056A</b>			<b>Matrix: Water</b>	
HS23120955-01	BS-1	11 Dec 2023 10:00			19 Dec 2023 21:13	10
HS23120955-01	BS-1	11 Dec 2023 10:00			19 Dec 2023 21:08	1
HS23120955-02	7B-BS	12 Dec 2023 15:40			19 Dec 2023 21:54	200
HS23120955-02	7B-BS	12 Dec 2023 15:40			19 Dec 2023 21:49	10
HS23120955-03	BS-19	11 Dec 2023 11:45			19 Dec 2023 22:06	20
HS23120955-03	BS-19	11 Dec 2023 11:45			19 Dec 2023 22:00	1
HS23120955-04	BS-26	11 Dec 2023 13:30			19 Dec 2023 22:12	1
HS23120955-05	BS-4	11 Dec 2023 15:40			19 Dec 2023 22:35	20
HS23120955-05	BS-4	11 Dec 2023 15:40			19 Dec 2023 22:30	1
HS23120955-06	BS-3	11 Dec 2023 16:30			19 Dec 2023 23:16	20
HS23120955-06	BS-3	11 Dec 2023 16:30			19 Dec 2023 23:11	1
HS23120955-07	BS-24	11 Dec 2023 17:00			19 Dec 2023 23:28	20
HS23120955-07	BS-24	11 Dec 2023 17:00			19 Dec 2023 23:22	1
HS23120955-08	BS-8	12 Dec 2023 08:30			19 Dec 2023 23:40	20
HS23120955-08	BS-8	12 Dec 2023 08:30			19 Dec 2023 23:34	1
HS23120955-09	BS-12	12 Dec 2023 10:00			19 Dec 2023 23:51	20
HS23120955-09	BS-12	12 Dec 2023 10:00			19 Dec 2023 23:46	1
HS23120955-10	BS-7	12 Dec 2023 11:20			20 Dec 2023 00:03	20
HS23120955-10	BS-7	12 Dec 2023 11:20			19 Dec 2023 23:57	1
HS23120955-11	BS-6	12 Dec 2023 13:15			20 Dec 2023 00:44	20
HS23120955-11	BS-6	12 Dec 2023 13:15			20 Dec 2023 00:38	1
HS23120955-12	BS-25	12 Dec 2023 13:50			20 Dec 2023 00:56	20
HS23120955-12	BS-25	12 Dec 2023 13:50			20 Dec 2023 00:50	1
HS23120955-13	BS-23	12 Dec 2023 14:10			20 Dec 2023 01:07	20
HS23120955-13	BS-23	12 Dec 2023 14:10			20 Dec 2023 01:02	1
HS23120955-14	7A-BS	11 Dec 2023 11:00			20 Dec 2023 01:13	1
HS23120955-15	BS-13	13 Dec 2023 09:15			20 Dec 2023 01:25	20
HS23120955-15	BS-13	13 Dec 2023 09:15			20 Dec 2023 01:19	1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID: R454705 ( 0 )</b>		<b>Test Name : ANIONS BY SW9056A</b>			<b>Matrix: Water</b>	
HS23120955-16	BS-14	13 Dec 2023 09:30			20 Dec 2023 02:29	20
HS23120955-16	BS-14	13 Dec 2023 09:30			20 Dec 2023 02:23	1
HS23120955-17	BS-22	13 Dec 2023 09:50			20 Dec 2023 02:41	20
HS23120955-17	BS-22	13 Dec 2023 09:50			20 Dec 2023 02:35	1
HS23120955-18	BS-21	13 Dec 2023 10:50			20 Dec 2023 02:52	20
HS23120955-18	BS-21	13 Dec 2023 10:50			20 Dec 2023 02:46	1
HS23120955-19	BS-18	13 Dec 2023 11:00			20 Dec 2023 03:04	20
HS23120955-19	BS-18	13 Dec 2023 11:00			20 Dec 2023 02:58	1
HS23120955-20	BS-5	13 Dec 2023 13:15			20 Dec 2023 03:45	20
HS23120955-20	BS-5	13 Dec 2023 13:15			20 Dec 2023 03:39	1
HS23120955-21	BS-17	13 Dec 2023 14:20			20 Dec 2023 03:56	20
HS23120955-21	BS-17	13 Dec 2023 14:20			20 Dec 2023 03:50	1
HS23120955-22	BS-9	13 Dec 2023 15:25			20 Dec 2023 04:08	20
HS23120955-22	BS-9	13 Dec 2023 15:25			20 Dec 2023 04:02	1
HS23120955-23	WW #19	14 Dec 2023 07:45			20 Dec 2023 04:14	1
HS23120955-24	WW #11	14 Dec 2023 08:00			20 Dec 2023 04:25	1
HS23120955-25	WW #12	14 Dec 2023 08:45			20 Dec 2023 05:06	1
HS23120955-26	WW #13	14 Dec 2023 09:00			20 Dec 2023 05:18	1
HS23120955-27	Cottages Well	14 Dec 2023 09:15			20 Dec 2023 05:30	1
HS23120955-28	WW #40	14 Dec 2023 10:30			20 Dec 2023 05:41	1
<b>Batch ID: R454739 ( 0 )</b>		<b>Test Name : SULFIDE BY SM4500 S2-F-2011</b>			<b>Matrix: Water</b>	
HS23120955-17	BS-22	13 Dec 2023 09:50			20 Dec 2023 14:48	1
HS23120955-18	BS-21	13 Dec 2023 10:50			20 Dec 2023 14:48	1
HS23120955-19	BS-18	13 Dec 2023 11:00			20 Dec 2023 14:48	1
HS23120955-20	BS-5	13 Dec 2023 13:15			20 Dec 2023 14:48	1
HS23120955-21	BS-17	13 Dec 2023 14:20			20 Dec 2023 14:48	1
HS23120955-22	BS-9	13 Dec 2023 15:25			20 Dec 2023 14:48	1
HS23120955-23	WW #19	14 Dec 2023 07:45			20 Dec 2023 14:48	1
HS23120955-24	WW #11	14 Dec 2023 08:00			20 Dec 2023 14:48	1
HS23120955-25	WW #12	14 Dec 2023 08:45			20 Dec 2023 14:48	1
HS23120955-26	WW #13	14 Dec 2023 09:00			20 Dec 2023 14:48	1
HS23120955-27	Cottages Well	14 Dec 2023 09:15			20 Dec 2023 14:48	1
HS23120955-28	WW #40	14 Dec 2023 10:30			20 Dec 2023 14:48	1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID: R454744 ( 0 )</b>		<b>Test Name : HYDROGEN SULFIDE BY E376.1</b>			<b>Matrix: Water</b>	
HS23120955-17	BS-22	13 Dec 2023 09:50			20 Dec 2023 15:10	1
HS23120955-18	BS-21	13 Dec 2023 10:50			20 Dec 2023 15:10	1
HS23120955-19	BS-18	13 Dec 2023 11:00			20 Dec 2023 15:10	1
HS23120955-20	BS-5	13 Dec 2023 13:15			20 Dec 2023 15:10	1
HS23120955-21	BS-17	13 Dec 2023 14:20			20 Dec 2023 15:10	1
HS23120955-22	BS-9	13 Dec 2023 15:25			20 Dec 2023 15:10	1
HS23120955-23	WW #19	14 Dec 2023 07:45			20 Dec 2023 15:10	1
HS23120955-24	WW #11	14 Dec 2023 08:00			20 Dec 2023 15:10	1
HS23120955-25	WW #12	14 Dec 2023 08:45			20 Dec 2023 15:10	1
HS23120955-26	WW #13	14 Dec 2023 09:00			20 Dec 2023 15:10	1
HS23120955-27	Cottages Well	14 Dec 2023 09:15			20 Dec 2023 15:10	1
HS23120955-28	WW #40	14 Dec 2023 10:30			20 Dec 2023 15:10	1
<b>Batch ID: R454788 ( 0 )</b>		<b>Test Name : LOW LEVEL VOLATILES BY SW8260C</b>			<b>Matrix: Water</b>	
HS23120955-16	BS-14	13 Dec 2023 09:30			20 Dec 2023 23:54	1
<b>Batch ID: R454876 ( 0 )</b>		<b>Test Name : ALKALINITY BY -2011</b>			<b>Matrix: Water</b>	
HS23120955-01	BS-1	11 Dec 2023 10:00			20 Dec 2023 13:26	1
HS23120955-02	7B-BS	12 Dec 2023 15:40			20 Dec 2023 13:32	1
HS23120955-03	BS-19	11 Dec 2023 11:45			20 Dec 2023 13:37	1
HS23120955-04	BS-26	11 Dec 2023 13:30			20 Dec 2023 13:42	1
HS23120955-05	BS-4	11 Dec 2023 15:40			20 Dec 2023 13:48	1
HS23120955-06	BS-3	11 Dec 2023 16:30			20 Dec 2023 13:53	1
HS23120955-07	BS-24	11 Dec 2023 17:00			20 Dec 2023 13:59	1
HS23120955-08	BS-8	12 Dec 2023 08:30			20 Dec 2023 14:05	1
HS23120955-09	BS-12	12 Dec 2023 10:00			20 Dec 2023 14:22	1
HS23120955-10	BS-7	12 Dec 2023 11:20			20 Dec 2023 14:27	1
HS23120955-11	BS-6	12 Dec 2023 13:15			20 Dec 2023 14:33	1
HS23120955-12	BS-25	12 Dec 2023 13:50			20 Dec 2023 14:38	1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID: R454880 ( 0 )</b>		<b>Test Name : PH BY SM4500H+ B-2011</b>			<b>Matrix: Water</b>	
HS23120955-01	BS-1	11 Dec 2023 10:00			20 Dec 2023 13:26	1
HS23120955-02	7B-BS	12 Dec 2023 15:40			20 Dec 2023 13:32	1
HS23120955-03	BS-19	11 Dec 2023 11:45			20 Dec 2023 13:37	1
HS23120955-04	BS-26	11 Dec 2023 13:30			20 Dec 2023 13:42	1
HS23120955-05	BS-4	11 Dec 2023 15:40			20 Dec 2023 13:48	1
HS23120955-06	BS-3	11 Dec 2023 16:30			20 Dec 2023 13:53	1
HS23120955-07	BS-24	11 Dec 2023 17:00			20 Dec 2023 13:59	1
HS23120955-08	BS-8	12 Dec 2023 08:30			20 Dec 2023 14:05	1
HS23120955-09	BS-12	12 Dec 2023 10:00			20 Dec 2023 14:22	1
HS23120955-10	BS-7	12 Dec 2023 11:20			20 Dec 2023 14:27	1
HS23120955-11	BS-6	12 Dec 2023 13:15			20 Dec 2023 14:33	1
HS23120955-12	BS-25	12 Dec 2023 13:50			20 Dec 2023 14:38	1
<b>Batch ID: R454882 ( 0 )</b>		<b>Test Name : PH BY SM4500H+ B-2011</b>			<b>Matrix: Water</b>	
HS23120955-13	BS-23	12 Dec 2023 14:10			20 Dec 2023 15:13	1
HS23120955-14	7A-BS	11 Dec 2023 11:00			20 Dec 2023 15:18	1
HS23120955-15	BS-13	13 Dec 2023 09:15			20 Dec 2023 15:24	1
HS23120955-16	BS-14	13 Dec 2023 09:30			20 Dec 2023 15:35	1
HS23120955-17	BS-22	13 Dec 2023 09:50			20 Dec 2023 15:40	1
HS23120955-18	BS-21	13 Dec 2023 10:50			20 Dec 2023 15:46	1
HS23120955-19	BS-18	13 Dec 2023 11:00			20 Dec 2023 16:02	1
HS23120955-20	BS-5	13 Dec 2023 13:15			20 Dec 2023 16:08	1
HS23120955-21	BS-17	13 Dec 2023 14:20			20 Dec 2023 16:13	1
HS23120955-22	BS-9	13 Dec 2023 15:25			20 Dec 2023 16:18	1
HS23120955-23	WW #19	14 Dec 2023 07:45			20 Dec 2023 16:24	1
HS23120955-24	WW #11	14 Dec 2023 08:00			20 Dec 2023 16:29	1
HS23120955-25	WW #12	14 Dec 2023 08:45			20 Dec 2023 16:35	1
HS23120955-26	WW #13	14 Dec 2023 09:00			20 Dec 2023 16:40	1
HS23120955-27	Cottages Well	14 Dec 2023 09:15			20 Dec 2023 16:45	1
HS23120955-28	WW #40	14 Dec 2023 10:30			20 Dec 2023 16:51	1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID:</b> R454884 ( 0 )		<b>Test Name :</b> ALKALINITY BY -2011			<b>Matrix:</b> Water	
HS23120955-13	BS-23	12 Dec 2023 14:10			20 Dec 2023 15:13	1
HS23120955-14	7A-BS	11 Dec 2023 11:00			20 Dec 2023 15:18	1
HS23120955-15	BS-13	13 Dec 2023 09:15			20 Dec 2023 15:24	1
HS23120955-16	BS-14	13 Dec 2023 09:30			20 Dec 2023 15:35	1
HS23120955-17	BS-22	13 Dec 2023 09:50			20 Dec 2023 15:40	1
HS23120955-18	BS-21	13 Dec 2023 10:50			20 Dec 2023 15:46	1
HS23120955-19	BS-18	13 Dec 2023 11:00			20 Dec 2023 16:02	1
HS23120955-20	BS-5	13 Dec 2023 13:15			20 Dec 2023 16:08	1
HS23120955-21	BS-17	13 Dec 2023 14:20			20 Dec 2023 16:13	1
HS23120955-22	BS-9	13 Dec 2023 15:25			20 Dec 2023 16:18	1
HS23120955-23	WW #19	14 Dec 2023 07:45			20 Dec 2023 16:24	1
HS23120955-24	WW #11	14 Dec 2023 08:00			20 Dec 2023 16:29	1
HS23120955-25	WW #12	14 Dec 2023 08:45			20 Dec 2023 16:35	1
HS23120955-26	WW #13	14 Dec 2023 09:00			20 Dec 2023 16:40	1
HS23120955-27	Cottages Well	14 Dec 2023 09:15			20 Dec 2023 16:45	1
HS23120955-28	WW #40	14 Dec 2023 10:30			20 Dec 2023 16:51	1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

**Batch ID:** 204938 ( 0 )      **Instrument:** FID23      **Method:** MASSACHUSETTS EPH R2.1, DEC 2019

MBLK		Sample ID: MBLK-204938		Units: mg/L		Analysis Date: 18-Dec-2023 20:06			
Client ID:		Run ID: FID23_454641		SeqNo: 7738489		PrepDate: 17-Dec-2023		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Aliphatics >C10 - C12	U	0.00100							
Aliphatics >C12 - C16	U	0.00200							
Aliphatics >C16 - C35	U	0.00800							
<i>Surr: 1-Chlorooctadecane</i>	<i>0.02986</i>	<i>0</i>	<i>0.04</i>	<i>0</i>	<i>74.6</i>	<i>40 - 140</i>			

MBLK		Sample ID: MBLK-204938		Units: mg/L		Analysis Date: 18-Dec-2023 20:06			
Client ID:		Run ID: FID-22_454642		SeqNo: 7738496		PrepDate: 17-Dec-2023		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Aromatics >C10 - C12	U	0.00100							
Aromatics >C12 - C16	U	0.00400							
Aromatics >C16 - C21	U	0.00300							
Aromatics >C21 - C35	U	0.00900							
<i>Surr: 2-Bromonaphthalene</i>	<i>0.03422</i>	<i>0</i>	<i>0.04</i>	<i>0</i>	<i>85.6</i>	<i>40 - 140</i>			
<i>Surr: 2-Fluorobiphenyl</i>	<i>0.03465</i>	<i>0</i>	<i>0.04</i>	<i>0</i>	<i>86.6</i>	<i>40 - 140</i>			
<i>Surr: o-Terphenyl</i>	<i>0.03065</i>	<i>0</i>	<i>0.04</i>	<i>0</i>	<i>76.6</i>	<i>40 - 140</i>			

LCS		Sample ID: LCS-204938		Units: mg/L		Analysis Date: 18-Dec-2023 20:35			
Client ID:		Run ID: FID23_454641		SeqNo: 7738490		PrepDate: 17-Dec-2023		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Aliphatics >C10 - C12	0.04428	0.00100	0.05	0	88.6	40 - 140			
Aliphatics >C12 - C16	0.1018	0.00200	0.1	0	102	40 - 140			
Aliphatics >C16 - C35	0.4199	0.00800	0.4	0	105	40 - 140			
<i>Surr: 1-Chlorooctadecane</i>	<i>0.03072</i>	<i>0</i>	<i>0.04</i>	<i>0</i>	<i>76.8</i>	<i>40 - 140</i>			

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

**Batch ID:** 204938 ( 0 )      **Instrument:** FID23      **Method:** MASSACHUSETTS EPH R2.1, DEC 2019

LCS		Sample ID: LCS-204938	Units: mg/L			Analysis Date: 18-Dec-2023 20:35				
Client ID:		Run ID: FID-22_454642	SeqNo: 7738497		PrepDate: 17-Dec-2023		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C10 - C12	0.05045	0.00100	0.05	0	101	40 - 140				
Aromatics >C12 - C16	0.2124	0.00400	0.2	0	106	40 - 140				
Aromatics >C16 - C21	0.1807	0.00300	0.15	0	120	40 - 140				
Aromatics >C21 - C35	0.5967	0.00900	0.45	0	133	40 - 140				
Surr: 2-Bromonaphthalene	0.03592	0	0.04	0	89.8	40 - 140				
Surr: 2-Fluorobiphenyl	0.03656	0	0.04	0	91.4	40 - 140				
Surr: o-Terphenyl	0.038	0	0.04	0	95.0	40 - 140				

LCSD		Sample ID: LCSD-204938	Units: mg/L			Analysis Date: 19-Dec-2023 20:58				
Client ID:		Run ID: FID23_454641	SeqNo: 7740336		PrepDate: 17-Dec-2023		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aliphatics >C10 - C12	0.05949	0.00100	0.05	0	119	40 - 140	0.04428	29.3	50	
Aliphatics >C12 - C16	0.133	0.00200	0.1	0	133	40 - 140	0.1018	26.5	50	
Aliphatics >C16 - C35	0.5142	0.00800	0.4	0	129	40 - 140	0.4199	20.2	50	
Surr: 1-Chlorooctadecane	0.04078	0	0.04	0	102	40 - 140	0.03072	28.1	50	

LCSD		Sample ID: LCSD-204938	Units: mg/L			Analysis Date: 19-Dec-2023 20:58				
Client ID:		Run ID: FID-22_454642	SeqNo: 7740287		PrepDate: 17-Dec-2023		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C10 - C12	0.04753	0.00100	0.05	0	95.1	40 - 140	0.05045	5.97	50	
Aromatics >C12 - C16	0.2048	0.00400	0.2	0	102	40 - 140	0.2124	3.66	50	
Aromatics >C16 - C21	0.1719	0.00300	0.15	0	115	40 - 140	0.1807	4.96	50	
Aromatics >C21 - C35	0.5359	0.00900	0.45	0	119	40 - 140	0.5967	10.7	50	
Surr: 2-Bromonaphthalene	0.02957	0	0.04	0	73.9	40 - 140	0.03592	19.4	50	
Surr: 2-Fluorobiphenyl	0.0296	0	0.04	0	74.0	40 - 140	0.03656	21	50	
Surr: o-Terphenyl	0.03318	0	0.04	0	82.9	40 - 140	0.038	13.5	50	

The following samples were analyzed in this batch:

HS23120955-01	HS23120955-02	HS23120955-03	HS23120955-04
HS23120955-05	HS23120955-06	HS23120955-07	HS23120955-08
HS23120955-09	HS23120955-10	HS23120955-11	HS23120955-12
HS23120955-13	HS23120955-14	HS23120955-15	HS23120955-16
HS23120955-17	HS23120955-18	HS23120955-19	

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

<b>Batch ID:</b> 204967 ( 0 )	<b>Instrument:</b> FID23	<b>Method:</b> MASSACHUSETTS EPH R2.1, DEC 2019								
<b>MBLK</b>	Sample ID: <b>MBLK-204967</b>	Units: <b>mg/L</b>	Analysis Date: <b>20-Dec-2023 14:16</b>							
Client ID:	Run ID: <b>FID23_454823</b>	SeqNo: <b>7742739</b>	PrepDate: <b>18-Dec-2023</b> DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Aliphatics >C10 - C12	U	0.00100								
Aliphatics >C12 - C16	U	0.00200								
Aliphatics >C16 - C35	U	0.00800								
<i>Surr: 1-Chlorooctadecane</i>	<i>0.0398</i>	<i>0</i>	<i>0.04</i>	<i>0</i>	<i>99.5</i>	<i>40 - 140</i>				

<b>LCS</b>	Sample ID: <b>LCS-204967</b>	Units: <b>mg/L</b>	Analysis Date: <b>20-Dec-2023 14:45</b>							
Client ID:	Run ID: <b>FID23_454823</b>	SeqNo: <b>7742740</b>	PrepDate: <b>18-Dec-2023</b> DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Aliphatics >C10 - C12	0.05616	0.00100	0.05	0	112	40 - 140				
Aliphatics >C12 - C16	0.1315	0.00200	0.1	0	131	40 - 140				
Aliphatics >C16 - C35	0.5397	0.00800	0.4	0	135	40 - 140				
<i>Surr: 1-Chlorooctadecane</i>	<i>0.03785</i>	<i>0</i>	<i>0.04</i>	<i>0</i>	<i>94.6</i>	<i>40 - 140</i>				

<b>LCSD</b>	Sample ID: <b>LCSD-204967</b>	Units: <b>mg/L</b>	Analysis Date: <b>20-Dec-2023 15:14</b>							
Client ID:	Run ID: <b>FID23_454823</b>	SeqNo: <b>7742741</b>	PrepDate: <b>18-Dec-2023</b> DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Aliphatics >C10 - C12	0.03384	0.00100	0.05	0	67.7	40 - 140	0.05616	49.6	50	
Aliphatics >C12 - C16	0.07226	0.00200	0.1	0	72.3	40 - 140	0.1315	58.1	50	R
Aliphatics >C16 - C35	0.2654	0.00800	0.4	0	66.4	40 - 140	0.5397	68.1	50	R
<i>Surr: 1-Chlorooctadecane</i>	<i>0.02041</i>	<i>0</i>	<i>0.04</i>	<i>0</i>	<i>51.0</i>	<i>40 - 140</i>	<i>0.03785</i>	<i>59.9</i>	<i>50</i>	<i>R</i>

The following samples were analyzed in this batch:

HS23120955-20	HS23120955-21	HS23120955-22	HS23120955-23
HS23120955-24	HS23120955-25	HS23120955-26	HS23120955-27
HS23120955-28			

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

**Batch ID:** 204967 ( 1 )      **Instrument:** FID-22      **Method:** MASSACHUSETTS EPH R2.1, DEC 2019

<b>MBLK</b>		Sample ID: <b>MBLK-204967</b>		Units: <b>mg/L</b>		Analysis Date: <b>20-Dec-2023 14:16</b>			
Client ID:		Run ID: <b>FID-22_454824</b>		SeqNo: <b>7742753</b>		PrepDate: <b>18-Dec-2023</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Aromatics >C10 - C12	U	0.00100							
Aromatics >C12 - C16	U	0.00400							
Aromatics >C16 - C21	U	0.00300							
Aromatics >C21 - C35	U	0.00900							
Surr: 2-Bromonaphthalene	0.03353	0	0.04	0	83.8	40 - 140			
Surr: 2-Fluorobiphenyl	0.03431	0	0.04	0	85.8	40 - 140			
Surr: o-Terphenyl	0.04085	0	0.04	0	102	40 - 140			

<b>LCS</b>		Sample ID: <b>LCS-204967</b>		Units: <b>mg/L</b>		Analysis Date: <b>20-Dec-2023 14:45</b>			
Client ID:		Run ID: <b>FID-22_454824</b>		SeqNo: <b>7742754</b>		PrepDate: <b>18-Dec-2023</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Aromatics >C10 - C12	0.04842	0.00100	0.05	0	96.8	40 - 140			
Aromatics >C12 - C16	0.2228	0.00400	0.2	0	111	40 - 140			
Aromatics >C16 - C21	0.1884	0.00300	0.15	0	126	40 - 140			
Aromatics >C21 - C35	0.6177	0.00900	0.45	0	137	40 - 140			
Surr: 2-Bromonaphthalene	0.02987	0	0.04	0	74.7	40 - 140			
Surr: 2-Fluorobiphenyl	0.03095	0	0.04	0	77.4	40 - 140			
Surr: o-Terphenyl	0.03828	0	0.04	0	95.7	40 - 140			

<b>LCSD</b>		Sample ID: <b>LCSD-204967</b>		Units: <b>mg/L</b>		Analysis Date: <b>20-Dec-2023 15:14</b>			
Client ID:		Run ID: <b>FID-22_454824</b>		SeqNo: <b>7742755</b>		PrepDate: <b>18-Dec-2023</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Aromatics >C10 - C12	0.03408	0.00100	0.05	0	68.2	40 - 140	0.04842	34.8	50
Aromatics >C12 - C16	0.1296	0.00400	0.2	0	64.8	40 - 140	0.2228	52.9	50 R
Aromatics >C16 - C21	0.1068	0.00300	0.15	0	71.2	40 - 140	0.1884	55.3	50 R
Aromatics >C21 - C35	0.3271	0.00900	0.45	0	72.7	40 - 140	0.6177	61.5	50 R
Surr: 2-Bromonaphthalene	0.03348	0	0.04	0	83.7	40 - 140	0.02987	11.4	50
Surr: 2-Fluorobiphenyl	0.03353	0	0.04	0	83.8	40 - 140	0.03095	7.99	50
Surr: o-Terphenyl	0.02108	0	0.04	0	52.7	40 - 140	0.03828	57.9	50 R

The following samples were analyzed in this batch:

HS23120955-20	HS23120955-21	HS23120955-22	HS23120955-23
HS23120955-24	HS23120955-25	HS23120955-26	HS23120955-27
HS23120955-28			

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

<b>Batch ID:</b> R454472 ( 0 )		<b>Instrument:</b> FID-14		<b>Method:</b> MASSACHUSETTS VPH, FEB 2018, REV 2.1					
<b>MBLK</b>	Sample ID: <b>MBLK-231217</b>	Units: <b>mg/L</b>			Analysis Date: <b>17-Dec-2023 16:38</b>				
Client ID:		Run ID: <b>FID-14_454472</b>		SeqNo: <b>7734542</b>	PrepDate:		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Aliphatics >C6 - C8	U	0.0100							
Aliphatics >C8 - C10	U	0.0100							
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	0.1906	0.0100	0.25	0	76.2	70 - 130			

<b>MBLK</b>	Sample ID: <b>CCV</b>	Units: <b>mg/L</b>			Analysis Date: <b>17-Dec-2023 21:45</b>				
Client ID:		Run ID: <b>FID-14_454472</b>		SeqNo: <b>7734549</b>	PrepDate:		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Aliphatics >C6 - C8	0.01996	0.0100							
Aliphatics >C8 - C10	0.02008	0.0100							
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	0.1913	0.0100	0.25	0	76.5	70 - 130			

<b>LCS</b>	Sample ID: <b>LCS-231217</b>	Units: <b>mg/L</b>			Analysis Date: <b>17-Dec-2023 15:21</b>				
Client ID:		Run ID: <b>FID-14_454472</b>		SeqNo: <b>7734540</b>	PrepDate:		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Aliphatics >C6 - C8	0.02097	0.0100	0.025	0	83.9	70 - 130			
Aliphatics >C8 - C10	0.02616	0.0100	0.025	0	105	70 - 130			
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	0.1916	0.0100	0.25	0	76.7	70 - 130			

<b>LCSD</b>	Sample ID: <b>LCSD-231217</b>	Units: <b>mg/L</b>			Analysis Date: <b>17-Dec-2023 16:00</b>				
Client ID:		Run ID: <b>FID-14_454472</b>		SeqNo: <b>7734541</b>	PrepDate:		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Aliphatics >C6 - C8	0.01871	0.0100	0.025	0	74.8	70 - 130	0.02097	11.4	25
Aliphatics >C8 - C10	0.0289	0.0100	0.025	0	116	70 - 130	0.02616	9.96	25
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	0.1942	0.0100	0.25	0	77.7	70 - 130	0.1916	1.34	25

<b>The following samples were analyzed in this batch:</b>	HS23120955-01	HS23120955-02	HS23120955-03	HS23120955-04
	HS23120955-05	HS23120955-06	HS23120955-08	HS23120955-09
	HS23120955-10	HS23120955-11	HS23120955-12	HS23120955-13
	HS23120955-14	HS23120955-15	HS23120955-16	HS23120955-17
	HS23120955-18	HS23120955-19	HS23120955-20	

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

<b>Batch ID:</b> R454475 ( 0 )		<b>Instrument:</b> FID-15		<b>Method:</b> MASSACHUSETTS VPH, FEB 2018, REV 2.1					
<b>MBLK</b>	Sample ID: <b>MBLK-231217</b>	Units: <b>mg/L</b>			Analysis Date: <b>17-Dec-2023 16:38</b>				
Client ID:	Run ID: <b>FID-15_454475</b>	SeqNo: <b>7734597</b>		PrepDate:			DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Aromatics >C8 - C10	U	0.0100							
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	0.1937	0.0100	0.25	0	77.5	70 - 130			

<b>LCS</b>		Sample ID: <b>LCS-231217</b>	Units: <b>mg/L</b>			Analysis Date: <b>17-Dec-2023 15:21</b>			
Client ID:	Run ID: <b>FID-15_454475</b>	SeqNo: <b>7734595</b>		PrepDate:			DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Aromatics >C8 - C10	0.07535	0.0100	0.1	0	75.3	70 - 130			
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	0.1935	0.0100	0.25	0	77.4	70 - 130			

<b>LCSD</b>		Sample ID: <b>LCSD-231217</b>	Units: <b>mg/L</b>			Analysis Date: <b>17-Dec-2023 16:00</b>			
Client ID:	Run ID: <b>FID-15_454475</b>	SeqNo: <b>7734596</b>		PrepDate:			DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Aromatics >C8 - C10	0.076	0.0100	0.1	0	76.0	70 - 130	0.07535	0.867	25
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	0.1919	0.0100	0.25	0	76.8	70 - 130	0.1935	0.858	25

The following samples were analyzed in this batch:

HS23120955-01	HS23120955-02	HS23120955-03	HS23120955-04
HS23120955-05	HS23120955-06	HS23120955-08	HS23120955-09
HS23120955-10	HS23120955-11	HS23120955-12	HS23120955-13
HS23120955-14	HS23120955-15	HS23120955-16	HS23120955-17
HS23120955-18	HS23120955-19	HS23120955-20	

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

<b>Batch ID:</b> R454536 ( 0 )	<b>Instrument:</b> FID-14	<b>Method:</b> MASSACHUSETTS VPH, FEB 2018, REV 2.1								
<b>MBLK</b> Sample ID: <b>MBLK-231218</b>	Units: <b>mg/L</b>	Analysis Date: <b>18-Dec-2023 16:41</b>								
Client ID:	Run ID: <b>FID-14_454536</b>	SeqNo: <b>7736352</b> PrepDate: DF: <b>1</b>								
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Aliphatics >C6 - C8	U	0.0100								
Aliphatics >C8 - C10	U	0.0100								
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	<i>0.177</i>	<i>0.0100</i>	<i>0.25</i>	<i>0</i>	<i>70.8</i>	<i>70 - 130</i>				

<b>LCS</b> Sample ID: <b>LCS-231218</b>	Units: <b>mg/L</b>	Analysis Date: <b>18-Dec-2023 15:25</b>								
Client ID:	Run ID: <b>FID-14_454536</b>	SeqNo: <b>7736350</b> PrepDate: DF: <b>1</b>								
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Aliphatics >C6 - C8	0.02026	0.0100	0.025	0	81.0	70 - 130				
Aliphatics >C8 - C10	0.02367	0.0100	0.025	0	94.7	70 - 130				
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	<i>0.1923</i>	<i>0.0100</i>	<i>0.25</i>	<i>0</i>	<i>76.9</i>	<i>70 - 130</i>				

<b>LCSD</b> Sample ID: <b>LCSD-231218</b>	Units: <b>mg/L</b>	Analysis Date: <b>18-Dec-2023 16:03</b>								
Client ID:	Run ID: <b>FID-14_454536</b>	SeqNo: <b>7736351</b> PrepDate: DF: <b>1</b>								
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Aliphatics >C6 - C8	0.01931	0.0100	0.025	0	77.2	70 - 130	0.02026	4.79	25	
Aliphatics >C8 - C10	0.02547	0.0100	0.025	0	102	70 - 130	0.02367	7.31	25	
<i>Surr: 2,5-Dibromotoluene (Aliphatic)</i>	<i>0.1868</i>	<i>0.0100</i>	<i>0.25</i>	<i>0</i>	<i>74.7</i>	<i>70 - 130</i>	<i>0.1923</i>	<i>2.95</i>	<i>25</i>	

<b>The following samples were analyzed in this batch:</b>	HS23120955-07	HS23120955-21	HS23120955-22	HS23120955-23
	HS23120955-24	HS23120955-25	HS23120955-26	HS23120955-27
	HS23120955-28			

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

<b>Batch ID:</b> R454537 ( 0 )		<b>Instrument:</b> FID-15		<b>Method:</b> MASSACHUSETTS VPH, FEB 2018, REV 2.1					
<b>MBLK</b>	Sample ID: <b>MBLK-231218</b>	Units: <b>mg/L</b>			Analysis Date: <b>18-Dec-2023 16:41</b>				
Client ID:	Run ID: <b>FID-15_454537</b>	SeqNo: <b>7736369</b>		PrepDate:			DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Aromatics >C8 - C10	U	0.0100							
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	0.1821	0.0100	0.25	0	72.8	70 - 130			

<b>LCS</b>	Sample ID: <b>LCS-231218</b>	Units: <b>mg/L</b>			Analysis Date: <b>18-Dec-2023 15:25</b>				
Client ID:	Run ID: <b>FID-15_454537</b>	SeqNo: <b>7736367</b>		PrepDate:			DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Aromatics >C8 - C10	0.07738	0.0100	0.1	0	77.4	70 - 130			
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	0.2017	0.0100	0.25	0	80.7	70 - 130			

<b>LCSD</b>	Sample ID: <b>LCSD-231218</b>	Units: <b>mg/L</b>			Analysis Date: <b>18-Dec-2023 16:03</b>				
Client ID:	Run ID: <b>FID-15_454537</b>	SeqNo: <b>7736368</b>		PrepDate:			DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Aromatics >C8 - C10	0.08154	0.0100	0.1	0	81.5	70 - 130	0.07738	5.23	25
<i>Surr: 2,5-Dibromotoluene (Aromatic)</i>	0.2001	0.0100	0.25	0	80.0	70 - 130	0.2017	0.83	25

The following samples were analyzed in this batch:

HS23120955-07	HS23120955-21	HS23120955-22	HS23120955-23
HS23120955-24	HS23120955-25	HS23120955-26	HS23120955-27
HS23120955-28			

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

**Batch ID:** 204917 ( 0 )      **Instrument:** ICPMS06      **Method:** ICP-MS METALS BY SW6020A

MBLK	Sample ID: MBLK-204917	Units: mg/L			Analysis Date: 19-Dec-2023 14:10					
Client ID:	Run ID: ICPMS06_454574	SeqNo: 7737585	PrepDate: 16-Dec-2023	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	2.00								
Barium	U	4.00								
Cadmium	U	2.00								
Calcium	U	500								
Chromium	U	4.00								
Iron	U	200								
Lead	U	2.00								
Magnesium	23.88	500								J
Manganese	0.101	5.00								J
Nickel	0.133	2.00								J
Potassium	47.74	500								J
Selenium	U	2.00								
Silver	U	2.00								
Sodium	83.7	200								J
Strontium	U	5.00								
Vanadium	4.342	5.00								J
Zinc	U	4.00								

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

Batch ID: 204917 ( 0 )		Instrument: ICPMS06		Method: ICP-MS METALS BY SW6020A						
<b>LCS</b>	Sample ID: <b>LCS-204917</b>	Units: <b>mg/L</b>			Analysis Date: <b>19-Dec-2023 14:24</b>					
Client ID:	Run ID: <b>ICPMS06_454574</b>	SeqNo: <b>7737579</b>		PrepDate: <b>16-Dec-2023</b>		DF: <b>1</b>				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.04602	0.00200	0.05	0	92.0	80 - 120				
Barium	0.04713	0.00400	0.05	0	94.3	80 - 120				
Cadmium	0.04751	0.00200	0.05	0	95.0	80 - 120				
Calcium	4.581	0.500	5	0	91.6	80 - 120				
Chromium	0.04698	0.00400	0.05	0	94.0	80 - 120				
Iron	4.766	0.200	5	0	95.3	80 - 120				
Lead	0.04772	0.00200	0.05	0	95.4	80 - 120				
Magnesium	4.929	0.200	5	0	98.6	80 - 120				
Manganese	0.04688	0.00500	0.05	0	93.8	80 - 120				
Nickel	0.04973	0.00200	0.05	0	99.5	80 - 120				
Potassium	4.57	0.200	5	0	91.4	80 - 120				
Selenium	0.0436	0.00200	0.05	0	87.2	80 - 120				
Silver	0.04562	0.00200	0.05	0	91.2	80 - 120				
Sodium	4.832	0.200	5	0	96.6	80 - 120				
Strontium	0.09148	0.00500	0.1	0	91.5	80 - 120				
Vanadium	0.04699	0.00500	0.05	0	94.0	80 - 120				
Zinc	0.04829	0.00400	0.05	0	96.6	80 - 120				

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

Batch ID: 204917 ( 0 )		Instrument: ICPMS06			Method: ICP-MS METALS BY SW6020A					
MS	Sample ID: HS23120377-21MS	Units: mg/L			Analysis Date: 19-Dec-2023 22:26					
Client ID:	Run ID: ICPMS07_454566	SeqNo: 7738832	PrepDate: 16-Dec-2023	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.06802	0.00200	0.05	0.01971	96.6	80 - 120				
Barium	0.1154	0.00400	0.05	0.07	90.8	80 - 120				
Cadmium	0.04521	0.00200	0.05	0.00006	90.3	80 - 120				
Calcium	60.91	0.500	5	57.2	74.3	80 - 120				SO
Chromium	0.04682	0.00400	0.05	0.001767	90.1	80 - 120				
Iron	4.749	0.200	5	0.02505	94.5	80 - 120				
Lead	0.04707	0.00200	0.05	0.000033	94.1	80 - 120				
Magnesium	38.59	0.200	5	33.23	107	80 - 120				O
Manganese	0.04739	0.00500	0.05	0.000441	93.9	80 - 120				
Nickel	0.04528	0.00200	0.05	0.000355	89.8	80 - 120				
Potassium	14.72	0.200	5	9.804	98.2	80 - 120				
Selenium	0.05593	0.00200	0.05	0.006085	99.7	80 - 120				
Silver	0.04357	0.00200	0.05	0.000039	87.1	80 - 120				
Sodium	1185	0.200	5	1176	178	80 - 120				SEO
Strontium	10.67	0.00500	0.1	10.66	14.5	80 - 120				SEO
Vanadium	0.1683	0.00500	0.05	0.1195	97.7	80 - 120				
Zinc	0.05037	0.00400	0.05	0.004241	92.3	80 - 120				

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

Batch ID: 204917 ( 0 )		Instrument: ICPMS06			Method: ICP-MS METALS BY SW6020A					
MSD	Sample ID: HS23120377-21MSD	Units: mg/L			Analysis Date: 19-Dec-2023 22:36					
Client ID:	Run ID: ICPMS07_454566	SeqNo: 7738836		PrepDate: 16-Dec-2023		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.06936	0.00200	0.05	0.01971	99.3	80 - 120	0.06802	1.94	20	
Barium	0.1122	0.00400	0.05	0.07	84.3	80 - 120	0.1154	2.83	20	
Cadmium	0.04619	0.00200	0.05	0.00006	92.3	80 - 120	0.04521	2.14	20	
Calcium	61.91	0.500	5	57.2	94.3	80 - 120	60.91	1.63	20	O
Chromium	0.04802	0.00400	0.05	0.001767	92.5	80 - 120	0.04682	2.54	20	
Iron	4.853	0.200	5	0.02505	96.6	80 - 120	4.749	2.17	20	
Lead	0.04682	0.00200	0.05	0.000033	93.6	80 - 120	0.04707	0.524	20	
Magnesium	38.37	0.200	5	33.23	103	80 - 120	38.59	0.55	20	O
Manganese	0.0482	0.00500	0.05	0.000441	95.5	80 - 120	0.04739	1.71	20	
Nickel	0.0462	0.00200	0.05	0.000355	91.7	80 - 120	0.04528	2.01	20	
Potassium	14.64	0.200	5	9.804	96.8	80 - 120	14.72	0.493	20	
Selenium	0.05578	0.00200	0.05	0.006085	99.4	80 - 120	0.05593	0.261	20	
Silver	0.04399	0.00200	0.05	0.000039	87.9	80 - 120	0.04357	0.959	20	
Sodium	1173	0.200	5	1176	-63.7	80 - 120	1185	1.02	20	SEO
Strontium	10.03	0.00500	0.1	10.66	-624	80 - 120	10.67	6.16	20	SEO
Vanadium	0.171	0.00500	0.05	0.1195	103	80 - 120	0.1683	1.57	20	
Zinc	0.0495	0.00400	0.05	0.004241	90.5	80 - 120	0.05037	1.73	20	

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

Batch ID: 204917 ( 0 )		Instrument: ICPMS06		Method: ICP-MS METALS BY SW6020A						
<b>PDS</b>	Sample ID: <b>HS23120377-21PDS</b>	Units: <b>mg/L</b>			Analysis Date: <b>20-Dec-2023 12:17</b>					
Client ID:	Run ID: <b>ICPMS07_454697</b>	SeqNo: <b>7740253</b>		PrepDate: <b>16-Dec-2023</b>		DF: <b>20</b>				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Arsenic	1.945	0.0400	2	0.02037	96.2	75 - 125				
Barium	1.938	0.0800	2	0.07528	93.2	75 - 125				
Cadmium	1.905	0.0400	2	-0.000018	95.3	75 - 125				
Calcium	237.8	10.0	200	50.07	93.9	75 - 125				
Chromium	1.873	0.0800	2	0.002262	93.5	75 - 125				
Iron	186.1	4.00	200	0.03397	93.0	75 - 125				
Lead	1.898	0.0400	2	-0.001168	95.0	75 - 125				
Magnesium	218.1	4.00	200	35.44	91.3	75 - 125				
Manganese	1.938	0.100	2	0.000788	96.9	75 - 125				
Nickel	1.949	0.0400	2	0.000018	97.5	75 - 125				
Potassium	196.3	4.00	200	9.994	93.2	75 - 125				
Selenium	1.909	0.0400	2	0.006091	95.2	75 - 125				
Silver	1.907	0.0400	2	0.000014	95.4	75 - 125				
Sodium	1350	4.00	200	1211	69.6	75 - 125			SO	
Strontium	12.13	0.100	2	10.53	80.0	75 - 125			O	
Vanadium	2.049	0.100	2	0.1299	95.9	75 - 125				
Zinc	1.928	0.0800	2	0.008521	96.0	75 - 125				

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

Batch ID: 204917 ( 0 )		Instrument: ICPMS06		Method: ICP-MS METALS BY SW6020A						
PDS		Sample ID: HS23120377-21PDS		Units: mg/L		Analysis Date: 19-Dec-2023 22:40				
Client ID:		Run ID: ICPMS07_454566		SeqNo: 7738838		PrepDate: 16-Dec-2023		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Arsenic	0.1188	0.00200	0.1	0.01971	99.1	75 - 125				
Barium	0.1592	0.00400	0.1	0.07	89.2	75 - 125				
Cadmium	0.09104	0.00200	0.1	0.00006	91.0	75 - 125				
Calcium	65.45	0.500	10	57.2	82.6	75 - 125			O	
Chromium	0.09377	0.00400	0.1	0.001767	92.0	75 - 125				
Iron	9.48	0.200	10	0.02505	94.6	75 - 125				
Lead	0.09609	0.00200	0.1	0.000033	96.1	75 - 125				
Magnesium	42.32	0.200	10	33.23	90.8	75 - 125				
Manganese	0.095	0.00500	0.1	0.000441	94.6	75 - 125				
Nickel	0.09142	0.00200	0.1	0.000355	91.1	75 - 125				
Potassium	19.59	0.200	10	9.804	97.9	75 - 125				
Selenium	0.1066	0.00200	0.1	0.006085	100	75 - 125				
Silver	0.09212	0.00200	0.1	0.000039	92.1	75 - 125				
Sodium	1187	0.200	10	1176	109	75 - 125			EO	
Strontium	10.49	0.00500	0.1	10.66	-163	75 - 125			SEO	
Vanadium	0.2174	0.00500	0.1	0.1195	97.9	75 - 125				
Zinc	0.09905	0.00400	0.1	0.004241	94.8	75 - 125				

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

Batch ID: 204917 ( 0 )		Instrument: ICPMS06		Method: ICP-MS METALS BY SW6020A						
<b>SD</b>	Sample ID: <b>HS23120377-21SD</b>	Units: <b>mg/L</b>		Analysis Date: <b>19-Dec-2023 22:24</b>						
Client ID:	Run ID: <b>ICPMS07_454566</b>	SeqNo: <b>7738831</b>		PrepDate: <b>16-Dec-2023</b>			DF: <b>5</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	Limit	Qual
Arsenic	0.0198	0.0100					0.01971	0.467	10	
Barium	0.07115	0.0200					0.07	1.64	10	
Cadmium	U	0.0100					0.00006	0	10	
Calcium	49.22	2.50					57.2	14	10	R
Chromium	0.002228	0.0200					0.001767	0	10	J
Iron	U	1.00					0.02505	0	10	
Lead	U	0.0100					0.000033	0	10	
Magnesium	33.95	1.00					33.23	2.16	10	
Manganese	U	0.0250					0.000441	0	10	
Nickel	U	0.0100					0.000355	0	10	
Potassium	10.22	1.00					9.804	4.29	10	
Selenium	0.006863	0.0100					0.006085	0	10	J
Silver	U	0.0100					0.000039	0	10	
Sodium	1199	1.00					1176	1.96	10	E
Strontium	10.67	0.0250					10.66	0.153	10	E
Vanadium	0.122	0.0250					0.1195	2.1	10	
Zinc	U	0.0200					0.004241	0	10	

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

Batch ID: 204917 ( 0 )		Instrument: ICPMS06		Method: ICP-MS METALS BY SW6020A						
<b>SD</b>	Sample ID: <b>HS23120377-21SD</b>	Units: <b>mg/L</b>		Analysis Date: <b>20-Dec-2023 12:15</b>						
Client ID:	Run ID: <b>ICPMS07_454697</b>	SeqNo: <b>7740252</b>		PrepDate: <b>16-Dec-2023</b>		DF: <b>100</b>				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	Limit	Qual
Arsenic	U	0.200					0.02037	0	10	
Barium	U	0.400					0.07528	0	10	
Cadmium	U	0.200					-0.000018	0	10	
Calcium	50.52	50.0					50.07	0.908	10	
Chromium	U	0.400					0.002262	0	10	
Iron	U	20.0					0.03397	0	10	
Lead	U	0.200					-0.001168	0	10	
Magnesium	35.18	20.0					35.44	0.742	10	
Manganese	U	0.500					0.000788	0	10	
Nickel	U	0.200					0.000018	0	10	
Potassium	9.998	20.0					9.994	0	10	J
Selenium	U	0.200					0.006091	0	10	
Silver	U	0.200					0.000014	0	10	
Sodium	1233	20.0					1211	1.82	10	
Strontium	10.4	0.500					10.53	1.31	10	
Vanadium	0.1781	0.500					0.1299	0	10	J
Zinc	U	0.400					0.008521	0	10	

The following samples were analyzed in this batch:

HS23120955-01	HS23120955-02	HS23120955-03	HS23120955-04
HS23120955-05	HS23120955-06	HS23120955-07	

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

<b>Batch ID:</b> 204946 ( 0 )		<b>Instrument:</b> ICPMS06		<b>Method:</b> ICP-MS METALS BY SW6020A					
<b>MBLK</b>	Sample ID: <b>MBLK-204946</b>	Units: <b>mg/L</b>		Analysis Date: <b>18-Dec-2023 15:18</b>					
Client ID:	Run ID: <b>ICPMS06_454439</b>	SeqNo: <b>7734999</b>		PrepDate: <b>18-Dec-2023</b>		DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Arsenic	U	0.00200							
Barium	U	0.00400							
Cadmium	U	0.00200							
Calcium	U	0.500							
Chromium	0.000892	0.00400							J
Iron	U	0.200							
Lead	U	0.00200							
Magnesium	U	0.200							
Manganese	U	0.00500							
Nickel	U	0.00200							
Potassium	0.0321	0.200							J
Selenium	U	0.00200							
Silver	U	0.00200							
Sodium	0.03165	0.200							J
Vanadium	0.001915	0.00500							J
Zinc	U	0.00400							

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

Batch ID: 204946 ( 0 )		Instrument: ICPMS06		Method: ICP-MS METALS BY SW6020A						
<b>LCS</b>	Sample ID: <b>LCS-204946</b>	Units: <b>mg/L</b>			Analysis Date: <b>18-Dec-2023 15:20</b>					
Client ID:	Run ID: <b>ICPMS06_454439</b>	SeqNo: <b>7735000</b>		PrepDate: <b>18-Dec-2023</b>		DF: <b>1</b>				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.0485	0.00200	0.05	0	97.0	80 - 120				
Barium	0.04914	0.00400	0.05	0	98.3	80 - 120				
Cadmium	0.04933	0.00200	0.05	0	98.7	80 - 120				
Calcium	4.815	0.500	5	0	96.3	80 - 120				
Chromium	0.04974	0.00400	0.05	0	99.5	80 - 120				
Iron	4.958	0.200	5	0	99.2	80 - 120				
Lead	0.04843	0.00200	0.05	0	96.9	80 - 120				
Magnesium	5.139	0.200	5	0	103	80 - 120				
Manganese	0.04907	0.00500	0.05	0	98.1	80 - 120				
Nickel	0.05097	0.00200	0.05	0	102	80 - 120				
Potassium	4.878	0.200	5	0	97.6	80 - 120				
Selenium	0.04627	0.00200	0.05	0	92.5	80 - 120				
Silver	0.04686	0.00200	0.05	0	93.7	80 - 120				
Sodium	5.136	0.200	5	0	103	80 - 120				
Vanadium	0.05054	0.00500	0.05	0	101	80 - 120				
Zinc	0.05027	0.00400	0.05	0	101	80 - 120				

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

Batch ID: 204946 ( 0 )		Instrument: ICPMS06			Method: ICP-MS METALS BY SW6020A					
MS	Sample ID: HS23121100-01MS	Units: mg/L			Analysis Date: 18-Dec-2023 15:35					
Client ID:	Run ID: ICPMS06_454439	SeqNo: 7735007			PrepDate: 18-Dec-2023		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.0465	0.00200	0.05	0.000782	91.4	80 - 120				
Barium	0.08266	0.00400	0.05	0.03574	93.8	80 - 120				
Cadmium	0.04626	0.00200	0.05	0.000048	92.4	80 - 120				
Calcium	297.3	0.500	5	288.1	184	80 - 120				SEO
Chromium	0.04727	0.00400	0.05	0.000851	92.8	80 - 120				
Iron	4.632	0.200	5	0.008175	92.5	80 - 120				
Lead	0.04704	0.00200	0.05	0.00002	94.0	80 - 120				
Magnesium	262.2	0.200	5	250.9	225	80 - 120				SEO
Manganese	0.171	0.00500	0.05	0.1229	96.1	80 - 120				
Nickel	0.0485	0.00200	0.05	0.001744	93.5	80 - 120				
Potassium	9.601	0.200	5	4.915	93.7	80 - 120				
Selenium	0.04818	0.00200	0.05	0.00411	88.1	80 - 120				
Silver	0.04166	0.00200	0.05	0.000017	83.3	80 - 120				
Sodium	275.3	0.200	5	265.6	194	80 - 120				SEO
Vanadium	0.05095	0.00500	0.05	0.00302	95.9	80 - 120				
Zinc	0.04586	0.00400	0.05	0.001574	88.6	80 - 120				

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

Batch ID: 204946 ( 0 )		Instrument: ICPMS06			Method: ICP-MS METALS BY SW6020A					
<b>MSD</b>		Sample ID: <b>HS23121100-01MSD</b>			Units: <b>mg/L</b>		Analysis Date: <b>18-Dec-2023 15:37</b>			
Client ID:		Run ID: <b>ICPMS06_454439</b>			SeqNo: <b>7735008</b>		PrepDate: <b>18-Dec-2023</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.04877	0.00200	0.05	0.000782	96.0	80 - 120	0.0465	4.76	20	
Barium	0.08494	0.00400	0.05	0.03574	98.4	80 - 120	0.08266	2.72	20	
Cadmium	0.04922	0.00200	0.05	0.000048	98.3	80 - 120	0.04626	6.19	20	
Calcium	292.3	0.500	5	288.1	83.6	80 - 120	297.3	1.71	20	EO
Chromium	0.0491	0.00400	0.05	0.000851	96.5	80 - 120	0.04727	3.81	20	
Iron	5.086	0.200	5	0.008175	102	80 - 120	4.632	9.33	20	
Lead	0.04996	0.00200	0.05	0.00002	99.9	80 - 120	0.04704	6.02	20	
Magnesium	259.8	0.200	5	250.9	179	80 - 120	262.2	0.885	20	SEO
Manganese	0.1712	0.00500	0.05	0.1229	96.7	80 - 120	0.171	0.171	20	
Nickel	0.05046	0.00200	0.05	0.001744	97.4	80 - 120	0.0485	3.96	20	
Potassium	9.729	0.200	5	4.915	96.3	80 - 120	9.601	1.32	20	
Selenium	0.05002	0.00200	0.05	0.00411	91.8	80 - 120	0.04818	3.76	20	
Silver	0.04516	0.00200	0.05	0.000017	90.3	80 - 120	0.04166	8.08	20	
Sodium	272.9	0.200	5	265.6	145	80 - 120	275.3	0.893	20	SEO
Vanadium	0.0533	0.00500	0.05	0.00302	101	80 - 120	0.05095	4.5	20	
Zinc	0.04639	0.00400	0.05	0.001574	89.6	80 - 120	0.04586	1.14	20	
<b>PDS</b>		Sample ID: <b>HS23121100-01PDS</b>			Units: <b>mg/L</b>		Analysis Date: <b>18-Dec-2023 15:39</b>			
Client ID:		Run ID: <b>ICPMS06_454439</b>			SeqNo: <b>7735009</b>		PrepDate: <b>18-Dec-2023</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.09124	0.00200	0.1	0.000782	90.5	75 - 125				
Barium	0.1264	0.00400	0.1	0.03574	90.6	75 - 125				
Cadmium	0.09191	0.00200	0.1	0.000048	91.9	75 - 125				
Chromium	0.094	0.00400	0.1	0.000851	93.2	75 - 125				
Iron	9.355	0.200	10	0.008175	93.5	75 - 125				
Lead	0.09426	0.00200	0.1	0.00002	94.2	75 - 125				
Manganese	0.2118	0.00500	0.1	0.1229	88.9	75 - 125				
Nickel	0.09507	0.00200	0.1	0.001744	93.3	75 - 125				
Potassium	14	0.200	10	4.915	90.9	75 - 125				
Selenium	0.09194	0.00200	0.1	0.00411	87.8	75 - 125				
Silver	0.08645	0.00200	0.1	0.000017	86.4	75 - 125				
Vanadium	0.1003	0.00500	0.1	0.00302	97.3	75 - 125				
Zinc	0.09243	0.00400	0.1	0.001574	90.9	75 - 125				

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

<b>Batch ID:</b> 204946 ( 0 )	<b>Instrument:</b> ICPMS06	<b>Method:</b> ICP-MS METALS BY SW6020A								
<b>PDS</b>	Sample ID: <b>HS23121100-01PDS</b>	Units: <b>mg/L</b>	Analysis Date: <b>19-Dec-2023 13:00</b>							
Client ID:	Run ID: <b>ICPMS06_454574</b>	SeqNo: <b>7737212</b>	PrepDate: <b>18-Dec-2023</b> DF: <b>100</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Calcium	1200	50.0	1000	273.6	92.7	75 - 125				
Magnesium	1224	20.0	1000	251.7	97.2	75 - 125				
Sodium	1250	20.0	1000	302.7	94.7	75 - 125				

<b>SD</b>	Sample ID: <b>HS23121100-01SD</b>	Units: <b>mg/L</b>	Analysis Date: <b>18-Dec-2023 15:33</b>							
Client ID:	Run ID: <b>ICPMS06_454439</b>	SeqNo: <b>7735006</b>	PrepDate: <b>18-Dec-2023</b> DF: <b>5</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual

Arsenic	0.00241	0.0100					0.000782	0	10	J
Barium	0.03583	0.0200					0.03574	0.246	10	
Cadmium	U	0.0100					0.000048	0	10	
Chromium	0.002994	0.0200					0.000851	0	10	J
Iron	U	1.00					0.008175	0	10	
Lead	U	0.0100					0.000002	0	10	
Manganese	0.1251	0.0250					0.1229	1.84	10	
Nickel	U	0.0100					0.001744	0	10	
Potassium	5.1	1.00					4.915	3.76	10	
Selenium	U	0.0100					0.00411	0	10	
Silver	U	0.0100					0.000017	0	10	
Vanadium	0.0161	0.0250					0.00302	0	10	J
Zinc	U	0.0200					0.001574	0	10	

<b>SD</b>	Sample ID: <b>HS23121100-01SD</b>	Units: <b>mg/L</b>	Analysis Date: <b>19-Dec-2023 12:58</b>							
Client ID:	Run ID: <b>ICPMS06_454574</b>	SeqNo: <b>7737217</b>	PrepDate: <b>18-Dec-2023</b> DF: <b>500</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual

Calcium	286.5	250					273.6	4.74	10	
Magnesium	282.3	100					251.7	12.2	10	R

<b>SD</b>	Sample ID: <b>HS23121100-01SD</b>	Units: <b>mg/L</b>	Analysis Date: <b>19-Dec-2023 13:21</b>							
Client ID:	Run ID: <b>ICPMS06_454574</b>	SeqNo: <b>7737240</b>	PrepDate: <b>18-Dec-2023</b> DF: <b>500</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual

Sodium	294.3	100					302.7	2.77	10	
--------	-------	-----	--	--	--	--	-------	------	----	--

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

**Batch ID:** 204946 ( 0 )      **Instrument:** ICPMS06      **Method:** ICP-MS METALS BY SW6020A

The following samples were analyzed in this batch:

HS23120955-08	HS23120955-09	HS23120955-10	HS23120955-11
HS23120955-12	HS23120955-13	HS23120955-14	HS23120955-15
HS23120955-16	HS23120955-17	HS23120955-18	HS23120955-19
HS23120955-20	HS23120955-21	HS23120955-22	HS23120955-23

**Revision: 1**

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

Batch ID: 204996 ( 0 )		Instrument: ICPMS06		Method: ICP-MS METALS BY SW6020A						
<b>MBLK</b>	Sample ID: <b>MBLK-204996</b>	Units: <b>mg/L</b>		Analysis Date: <b>19-Dec-2023 15:47</b>						
Client ID:	Run ID: <b>ICPMS06_454574</b>	SeqNo: <b>7737900</b>		PrepDate: <b>19-Dec-2023</b>			DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.00200								
Barium	U	0.00400								
Cadmium	U	0.00200								
Calcium	U	0.500								
Chromium	U	0.00400								
Iron	U	0.200								
Lead	U	0.00200								
Magnesium	U	0.200								
Manganese	U	0.00500								
Nickel	U	0.00200								
Potassium	U	0.200								
Selenium	U	0.00200								
Silver	U	0.00200								
Sodium	0.02653	0.200								J
Strontium	U	0.00500								
Vanadium	U	0.00500								
Zinc	U	0.00400								

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

Batch ID: 204996 ( 0 )		Instrument: ICPMS06		Method: ICP-MS METALS BY SW6020A						
<b>LCS</b>	Sample ID: <b>LCS-204996</b>	Units: <b>mg/L</b>			Analysis Date: <b>19-Dec-2023 14:20</b>					
Client ID:	Run ID: <b>ICPMS06_454574</b>	SeqNo: <b>7737578</b>		PrepDate: <b>19-Dec-2023</b>		DF: <b>1</b>				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.04446	0.00200	0.05	0	88.9	80 - 120				
Barium	0.04793	0.00400	0.05	0	95.9	80 - 120				
Cadmium	0.04854	0.00200	0.05	0	97.1	80 - 120				
Calcium	4.51	0.500	5	0	90.2	80 - 120				
Chromium	0.04582	0.00400	0.05	0	91.6	80 - 120				
Iron	4.655	0.200	5	0	93.1	80 - 120				
Lead	0.04756	0.00200	0.05	0	95.1	80 - 120				
Magnesium	4.965	0.200	5	0	99.3	80 - 120				
Manganese	0.04627	0.00500	0.05	0	92.5	80 - 120				
Nickel	0.04854	0.00200	0.05	0	97.1	80 - 120				
Potassium	4.618	0.200	5	0	92.4	80 - 120				
Selenium	0.04298	0.00200	0.05	0	86.0	80 - 120				
Silver	0.04338	0.00200	0.05	0	86.8	80 - 120				
Sodium	4.986	0.200	5	0	99.7	80 - 120				
Strontium	0.08987	0.00500	0.1	0	89.9	80 - 120				
Vanadium	0.04766	0.00500	0.05	0	95.3	80 - 120				
Zinc	0.049	0.00400	0.05	0	98.0	80 - 120				

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

Batch ID: 204996 ( 0 )		Instrument: ICPMS06		Method: ICP-MS METALS BY SW6020A						
LCS	Sample ID: LCS-204996	Units: mg/L			Analysis Date: 20-Dec-2023 20:06					
Client ID:	Run ID: ICPMS06_454703	SeqNo: 7741797	PrepDate: 19-Dec-2023	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.04787	0.00200	0.05	0	95.7	80 - 120				
Barium	0.04766	0.00400	0.05	0	95.3	80 - 120				
Cadmium	0.04756	0.00200	0.05	0	95.1	80 - 120				
Calcium	5.069	0.500	5	0	101	80 - 120				
Chromium	0.0466	0.00400	0.05	0	93.2	80 - 120				
Iron	4.83	0.200	5	0	96.6	80 - 120				
Lead	0.04768	0.00200	0.05	0	95.4	80 - 120				
Magnesium	5	0.200	5	0	100.0	80 - 120				
Manganese	0.04828	0.00500	0.05	0	96.6	80 - 120				
Nickel	0.04952	0.00200	0.05	0	99.0	80 - 120				
Potassium	5.019	0.200	5	0	100	80 - 120				
Selenium	0.04818	0.00200	0.05	0	96.4	80 - 120				
Silver	0.04392	0.00200	0.05	0	87.8	80 - 120				
Sodium	4.955	0.200	5	0	99.1	80 - 120				
Strontium	0.09415	0.00500	0.1	0	94.1	80 - 120				
Vanadium	0.04638	0.00500	0.05	0	92.8	80 - 120				
Zinc	0.04928	0.00400	0.05	0	98.6	80 - 120				

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

Batch ID: 204996 ( 0 )		Instrument: ICPMS06			Method: ICP-MS METALS BY SW6020A					
MS	Sample ID: HS23120607-05MS	Units: mg/L			Analysis Date: 20-Dec-2023 20:12					
Client ID:	Run ID: ICPMS06_454703	SeqNo: 7741800			PrepDate: 19-Dec-2023		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.04837	0.00200	0.05	0.000958	94.8	80 - 120				
Barium	0.1123	0.00400	0.05	0.06571	93.2	80 - 120				
Cadmium	0.04735	0.00200	0.05	0.000077	94.5	80 - 120				
Calcium	31.15	0.500	5	26.67	89.6	80 - 120				O
Chromium	0.04661	0.00400	0.05	0.000049	93.1	80 - 120				
Iron	4.92	0.200	5	0.1406	95.6	80 - 120				
Lead	0.04674	0.00200	0.05	0.000027	93.4	80 - 120				
Magnesium	10.1	0.200	5	5.466	92.7	80 - 120				
Manganese	0.1275	0.00500	0.05	0.08346	88.1	80 - 120				
Nickel	0.04852	0.00200	0.05	0.001189	94.7	80 - 120				
Potassium	7.047	0.200	5	2.313	94.7	80 - 120				
Selenium	0.04704	0.00200	0.05	-0.000115	94.3	80 - 120				
Silver	0.04423	0.00200	0.05	0.000005	88.5	80 - 120				
Sodium	20.94	0.200	5	16.5	88.9	80 - 120				
Strontium	0.2071	0.00500	0.1	0.1133	93.8	80 - 120				
Vanadium	0.04725	0.00500	0.05	0.000296	93.9	80 - 120				
Zinc	0.05161	0.00400	0.05	0.00254	98.1	80 - 120				

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

Batch ID: 204996 ( 0 )		Instrument: ICPMS06			Method: ICP-MS METALS BY SW6020A					
MSD	Sample ID: HS23120607-05MSD	Units: mg/L			Analysis Date: 20-Dec-2023 20:13					
Client ID:	Run ID: ICPMS06_454703	SeqNo: 7741801		PrepDate: 19-Dec-2023		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.05245	0.00200	0.05	0.000958	103	80 - 120	0.04837	8.09	20	
Barium	0.1191	0.00400	0.05	0.06571	107	80 - 120	0.1123	5.83	20	
Cadmium	0.05185	0.00200	0.05	0.000077	104	80 - 120	0.04735	9.07	20	
Calcium	31.9	0.500	5	26.67	105	80 - 120	31.15	2.39	20	O
Chromium	0.05004	0.00400	0.05	0.000049	100.0	80 - 120	0.04661	7.08	20	
Iron	5.222	0.200	5	0.1406	102	80 - 120	4.92	5.96	20	
Lead	0.05087	0.00200	0.05	0.000027	102	80 - 120	0.04674	8.47	20	
Magnesium	10.68	0.200	5	5.466	104	80 - 120	10.1	5.61	20	
Manganese	0.1339	0.00500	0.05	0.08346	101	80 - 120	0.1275	4.9	20	
Nickel	0.05174	0.00200	0.05	0.001189	101	80 - 120	0.04852	6.41	20	
Potassium	7.352	0.200	5	2.313	101	80 - 120	7.047	4.25	20	
Selenium	0.05147	0.00200	0.05	-0.000115	103	80 - 120	0.04704	8.99	20	
Silver	0.04852	0.00200	0.05	0.000005	97.0	80 - 120	0.04423	9.24	20	
Sodium	22.09	0.200	5	16.5	112	80 - 120	20.94	5.35	20	
Strontium	0.2168	0.00500	0.1	0.1133	104	80 - 120	0.2071	4.57	20	
Vanadium	0.05116	0.00500	0.05	0.000296	102	80 - 120	0.04725	7.95	20	
Zinc	0.05286	0.00400	0.05	0.00254	101	80 - 120	0.05161	2.39	20	

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

Batch ID: 204996 ( 0 )		Instrument: ICPMS06		Method: ICP-MS METALS BY SW6020A						
<b>PDS</b>	Sample ID: <b>HS23120607-05PDS</b>	Units: <b>mg/L</b>			Analysis Date: <b>20-Dec-2023 20:15</b>					
Client ID:	Run ID: <b>ICPMS06_454703</b>	SeqNo: <b>7741802</b>		PrepDate: <b>19-Dec-2023</b>		DF: <b>1</b>				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.09672	0.00200	0.1	0.000958	95.8	75 - 125				
Barium	0.1605	0.00400	0.1	0.06571	94.8	75 - 125				
Cadmium	0.09552	0.00200	0.1	0.000077	95.4	75 - 125				
Calcium	35.9	0.500	10	26.67	92.3	75 - 125				
Chromium	0.09277	0.00400	0.1	0.000049	92.7	75 - 125				
Iron	9.629	0.200	10	0.1406	94.9	75 - 125				
Lead	0.09849	0.00200	0.1	0.000027	98.5	75 - 125				
Magnesium	14.66	0.200	10	5.466	91.9	75 - 125				
Manganese	0.1737	0.00500	0.1	0.08346	90.3	75 - 125				
Nickel	0.09545	0.00200	0.1	0.001189	94.3	75 - 125				
Potassium	11.89	0.200	10	2.313	95.8	75 - 125				
Selenium	0.09638	0.00200	0.1	-0.000115	96.5	75 - 125				
Silver	0.09712	0.00200	0.1	0.000005	97.1	75 - 125				
Sodium	25.3	0.200	10	16.5	88.0	75 - 125				
Strontium	0.2287	0.00500	0.1	0.1133	115	75 - 125				
Vanadium	0.09451	0.00500	0.1	0.000296	94.2	75 - 125				
Zinc	0.09841	0.00400	0.1	0.00254	95.9	75 - 125				

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

Batch ID: 204996 ( 0 )		Instrument: ICPMS06		Method: ICP-MS METALS BY SW6020A						
<b>SD</b>	Sample ID: <b>HS23120607-05SD</b>	Units: <b>mg/L</b>		Analysis Date: <b>20-Dec-2023 20:10</b>						
Client ID:	Run ID: <b>ICPMS06_454703</b>	SeqNo: <b>7741799</b>		PrepDate: <b>19-Dec-2023</b>			DF: <b>5</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	Limit	Qual
Arsenic	U	0.0100					0.000958	0	10	
Barium	0.06552	0.0200					0.06571	0.286	10	
Cadmium	U	0.0100					0.000077	0	10	
Calcium	25.42	2.50					26.67	4.7	10	
Chromium	U	0.0200					0.000049	0	10	
Iron	0.1403	1.00					0.1406	0	10	J
Lead	U	0.0100					0.000027	0	10	
Magnesium	5.557	1.00					5.466	1.66	10	
Manganese	0.08251	0.0250					0.08346	1.14	10	
Nickel	U	0.0100					0.001189	0	10	
Potassium	2.23	1.00					2.313	3.63	10	
Selenium	U	0.0100					-0.000115	0	10	
Silver	U	0.0100					0.000005	0	10	
Sodium	16.31	1.00					16.5	1.14	10	
Strontium	0.1107	0.0250					0.1133	2.26	10	
Vanadium	U	0.0250					0.000296	0	10	
Zinc	U	0.0200					0.00254	0	10	

The following samples were analyzed in this batch: HS23120955-24 HS23120955-25 HS23120955-26 HS23120955-27  
 HS23120955-28

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

<b>Batch ID:</b> 205066 ( 0 )	<b>Instrument:</b> HG04	<b>Method:</b> MERCURY BY SW7470A
-------------------------------	-------------------------	-----------------------------------

<b>MBLK</b>	Sample ID: <b>MBLK-205066</b>	Units: <b>mg/L</b>	Analysis Date: <b>20-Dec-2023 11:55</b>							
Client ID:	Run ID: <b>HG04_454759</b>	SeqNo: <b>7741045</b>	PrepDate: <b>20-Dec-2023</b> DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual

Mercury U 0.000200

<b>LCS</b>	Sample ID: <b>LCS-205066</b>	Units: <b>mg/L</b>	Analysis Date: <b>20-Dec-2023 11:57</b>							
Client ID:	Run ID: <b>HG04_454759</b>	SeqNo: <b>7741046</b>	PrepDate: <b>20-Dec-2023</b> DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual

Mercury 0.00464 0.000200 0.005 0 92.8 80 - 120

<b>MS</b>	Sample ID: <b>HS23120955-08MS</b>	Units: <b>mg/L</b>	Analysis Date: <b>20-Dec-2023 14:13</b>							
Client ID: <b>BS-8</b>	Run ID: <b>HG04_454759</b>	SeqNo: <b>7741057</b>	PrepDate: <b>20-Dec-2023</b> DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual

Mercury 0.00478 0.000200 0.005 0 95.6 75 - 125

<b>MSD</b>	Sample ID: <b>HS23120955-08MSD</b>	Units: <b>mg/L</b>	Analysis Date: <b>20-Dec-2023 14:15</b>							
Client ID: <b>BS-8</b>	Run ID: <b>HG04_454759</b>	SeqNo: <b>7741058</b>	PrepDate: <b>20-Dec-2023</b> DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual

Mercury 0.00482 0.000200 0.005 0 96.4 75 - 125 0.00478 0.833 20

<b>The following samples were analyzed in this batch:</b>	HS23120955-01	HS23120955-02	HS23120955-03	HS23120955-04
	HS23120955-05	HS23120955-06	HS23120955-07	HS23120955-08
	HS23120955-09	HS23120955-10	HS23120955-11	HS23120955-12
	HS23120955-13	HS23120955-14	HS23120955-15	HS23120955-16
	HS23120955-17	HS23120955-18	HS23120955-19	HS23120955-20

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

**Batch ID:** 205080 ( 0 )      **Instrument:** HG04      **Method:** MERCURY BY SW7470A

**MBLK**      Sample ID: **MBLK-205080**      Units: **mg/L**      Analysis Date: **20-Dec-2023 15:39**  
 Client ID:      Run ID: **HG04\_454759**      SeqNo: **7741097**      PrepDate: **20-Dec-2023**      DF: **1**  
 Analyte      Result      PQL      SPK Val      SPK Ref Value      %REC      Control Limit      RPD Ref Value      %RPD      RPD Limit Qual

Mercury      U      0.000200

**LCS**      Sample ID: **LCS-205080**      Units: **mg/L**      Analysis Date: **20-Dec-2023 15:41**  
 Client ID:      Run ID: **HG04\_454759**      SeqNo: **7741098**      PrepDate: **20-Dec-2023**      DF: **1**  
 Analyte      Result      PQL      SPK Val      SPK Ref Value      %REC      Control Limit      RPD Ref Value      %RPD      RPD Limit Qual

Mercury      0.0047      0.000200      0.005      0      94.0      80 - 120

**MS**      Sample ID: **HS23120955-21MS**      Units: **mg/L**      Analysis Date: **20-Dec-2023 15:44**  
 Client ID: **BS-17**      Run ID: **HG04\_454759**      SeqNo: **7741100**      PrepDate: **20-Dec-2023**      DF: **1**  
 Analyte      Result      PQL      SPK Val      SPK Ref Value      %REC      Control Limit      RPD Ref Value      %RPD      RPD Limit Qual

Mercury      0.00466      0.000200      0.005      -0.000012      93.4      75 - 125

**MSD**      Sample ID: **HS23120955-21MSD**      Units: **mg/L**      Analysis Date: **20-Dec-2023 15:46**  
 Client ID: **BS-17**      Run ID: **HG04\_454759**      SeqNo: **7741101**      PrepDate: **20-Dec-2023**      DF: **1**  
 Analyte      Result      PQL      SPK Val      SPK Ref Value      %REC      Control Limit      RPD Ref Value      %RPD      RPD Limit Qual

Mercury      0.00442      0.000200      0.005      -0.000012      88.6      75 - 125      0.00466      5.29      20

The following samples were analyzed in this batch: HS23120955-21      HS23120955-22      HS23120955-23      HS23120955-24  
 HS23120955-25      HS23120955-26      HS23120955-27      HS23120955-28

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

<b>Batch ID:</b> R454350 ( 0 )	<b>Instrument:</b> VOA10	<b>Method:</b> LOW LEVEL VOLATILES BY SW8260C
--------------------------------	--------------------------	---

<b>MBLK</b>	Sample ID: <b>VBLKW-231215</b>	Units: <b>ug/L</b>	Analysis Date: <b>15-Dec-2023 22:31</b>							
Client ID:	Run ID: <b>VOA10_454350</b>	SeqNo: <b>7731409</b>	PrepDate: DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	U	1.0								
Ethylbenzene	U	1.0								
m,p-Xylene	U	2.0								
o-Xylene	U	1.0								
Toluene	U	1.0								
Xylenes, Total	U	3.0								
<i>Surr: 1,2-Dichloroethane-d4</i>	52.46	1.0	50	0	105	70 - 123				
<i>Surr: 4-Bromofluorobenzene</i>	47.52	1.0	50	0	95.0	77 - 113				
<i>Surr: Dibromofluoromethane</i>	50.4	1.0	50	0	101	73 - 126				
<i>Surr: Toluene-d8</i>	54.99	1.0	50	0	110	81 - 120				

<b>LCS</b>	Sample ID: <b>VLCSW-231215</b>	Units: <b>ug/L</b>	Analysis Date: <b>15-Dec-2023 21:28</b>							
Client ID:	Run ID: <b>VOA10_454350</b>	SeqNo: <b>7731407</b>	PrepDate: DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	19.25	1.0	20	0	96.2	74 - 120				
Ethylbenzene	19.19	1.0	20	0	95.9	77 - 117				
m,p-Xylene	39.36	2.0	40	0	98.4	77 - 122				
o-Xylene	18.77	1.0	20	0	93.9	75 - 119				
Toluene	21.51	1.0	20	0	108	77 - 118				
Xylenes, Total	58.14	3.0	60	0	96.9	75 - 122				
<i>Surr: 1,2-Dichloroethane-d4</i>	51.79	1.0	50	0	104	70 - 123				
<i>Surr: 4-Bromofluorobenzene</i>	46.56	1.0	50	0	93.1	77 - 113				
<i>Surr: Dibromofluoromethane</i>	47.79	1.0	50	0	95.6	73 - 126				
<i>Surr: Toluene-d8</i>	54.12	1.0	50	0	108	81 - 120				

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

**Batch ID:** R454350 ( 0 )      **Instrument:** VOA10      **Method:** LOW LEVEL VOLATILES BY SW8260C

LCSD	Sample ID: <b>VLCS DW-231215</b>	Units: <b>ug/L</b>			Analysis Date: <b>15-Dec-2023 21:49</b>					
Client ID:	Run ID: <b>VOA10_454350</b>	SeqNo: <b>7731408</b>	PrepDate:	DF: <b>1</b>						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	18.7	1.0	20	0	93.5	74 - 120	19.25	2.89	20	
Ethylbenzene	18.84	1.0	20	0	94.2	77 - 117	19.19	1.81	20	
m,p-Xylene	38.1	2.0	40	0	95.2	77 - 122	39.36	3.27	20	
o-Xylene	18.69	1.0	20	0	93.4	75 - 119	18.77	0.457	20	
Toluene	21.04	1.0	20	0	105	77 - 118	21.51	2.2	20	
Xylenes, Total	56.78	3.0	60	0	94.6	75 - 122	58.14	2.35	20	
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>51.67</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>103</i>	<i>70 - 123</i>	<i>51.79</i>	<i>0.231</i>	<i>20</i>	
<i>Surr: 4-Bromofluorobenzene</i>	<i>47.11</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>94.2</i>	<i>77 - 113</i>	<i>46.56</i>	<i>1.18</i>	<i>20</i>	
<i>Surr: Dibromofluoromethane</i>	<i>48.42</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>96.8</i>	<i>73 - 126</i>	<i>47.79</i>	<i>1.3</i>	<i>20</i>	
<i>Surr: Toluene-d8</i>	<i>54.87</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>110</i>	<i>81 - 120</i>	<i>54.12</i>	<i>1.37</i>	<i>20</i>	

The following samples were analyzed in this batch:

HS23120955-01	HS23120955-02	HS23120955-03	HS23120955-04
HS23120955-05	HS23120955-06	HS23120955-07	HS23120955-08
HS23120955-09	HS23120955-10	HS23120955-11	HS23120955-12
HS23120955-13	HS23120955-14	HS23120955-15	HS23120955-17
HS23120955-18	HS23120955-19	HS23120955-20	

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

<b>Batch ID:</b> R454382 ( 0 )		<b>Instrument:</b> VOA10		<b>Method:</b> LOW LEVEL VOLATILES BY SW8260C					
<b>MBLK</b>	Sample ID: <b>VBLKW-231216</b>	Units: <b>ug/L</b>			Analysis Date: <b>17-Dec-2023 02:13</b>				
Client ID:	Run ID: <b>VOA10_454382</b>	SeqNo: <b>7732429</b>		PrepDate:		DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Benzene	U	1.0							
Ethylbenzene	U	1.0							
m,p-Xylene	U	2.0							
o-Xylene	U	1.0							
Toluene	U	1.0							
Xylenes, Total	U	3.0							
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>52.59</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>105</i>	<i>70 - 123</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>50.14</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>100</i>	<i>77 - 113</i>			
<i>Surr: Dibromofluoromethane</i>	<i>53.23</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>106</i>	<i>73 - 126</i>			
<i>Surr: Toluene-d8</i>	<i>50.01</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>100</i>	<i>81 - 120</i>			

<b>LCS</b>	Sample ID: <b>VLCSW-231216</b>	Units: <b>ug/L</b>			Analysis Date: <b>17-Dec-2023 01:10</b>				
Client ID:	Run ID: <b>VOA10_454382</b>	SeqNo: <b>7732427</b>		PrepDate:		DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Benzene	19.73	1.0	20	0	98.7	74 - 120			
Ethylbenzene	19.16	1.0	20	0	95.8	77 - 117			
m,p-Xylene	38.01	2.0	40	0	95.0	77 - 122			
o-Xylene	18.83	1.0	20	0	94.1	75 - 119			
Toluene	19.09	1.0	20	0	95.4	77 - 118			
Xylenes, Total	56.83	3.0	60	0	94.7	75 - 122			
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>53.98</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>108</i>	<i>70 - 123</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>49.58</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>99.2</i>	<i>77 - 113</i>			
<i>Surr: Dibromofluoromethane</i>	<i>50.86</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>102</i>	<i>73 - 126</i>			
<i>Surr: Toluene-d8</i>	<i>48.98</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>98.0</i>	<i>81 - 120</i>			

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

**Batch ID:** R454382 ( 0 )      **Instrument:** VOA10      **Method:** LOW LEVEL VOLATILES BY SW8260C

LCSD	Sample ID: <b>VLCS DW-231216</b>	Units: <b>ug/L</b>			Analysis Date: <b>17-Dec-2023 01:31</b>					
Client ID:	Run ID: <b>VOA10_454382</b>	SeqNo: <b>7732428</b>	PrepDate:	DF: <b>1</b>						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	18.65	1.0	20	0	93.2	74 - 120	19.73	5.67	20	
Ethylbenzene	18.27	1.0	20	0	91.3	77 - 117	19.16	4.77	20	
m,p-Xylene	37.7	2.0	40	0	94.3	77 - 122	38.01	0.796	20	
o-Xylene	18.29	1.0	20	0	91.5	75 - 119	18.83	2.88	20	
Toluene	18.44	1.0	20	0	92.2	77 - 118	19.09	3.47	20	
Xylenes, Total	56	3.0	60	0	93.3	75 - 122	56.83	1.48	20	
<i>Surr: 1,2-Dichloroethane-d4</i>	53.99	1.0	50	0	108	70 - 123	53.98	0.00987	20	
<i>Surr: 4-Bromofluorobenzene</i>	50.22	1.0	50	0	100	77 - 113	49.58	1.28	20	
<i>Surr: Dibromofluoromethane</i>	50.65	1.0	50	0	101	73 - 126	50.86	0.406	20	
<i>Surr: Toluene-d8</i>	49.71	1.0	50	0	99.4	81 - 120	48.98	1.47	20	

The following samples were analyzed in this batch:

HS23120955-21	HS23120955-22	HS23120955-23	HS23120955-24
HS23120955-25	HS23120955-26	HS23120955-27	HS23120955-28

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

<b>Batch ID:</b> R454788 ( 0 )	<b>Instrument:</b> VOA12	<b>Method:</b> LOW LEVEL VOLATILES BY SW8260C
--------------------------------	--------------------------	---

<b>MBLK</b>		Sample ID: <b>VBLKW-231220</b>		Units: <b>ug/L</b>		Analysis Date: <b>20-Dec-2023 21:16</b>			
Client ID:		Run ID: <b>VOA12_454788</b>		SeqNo: <b>7741980</b>		PrepDate:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	U	1.0							
Ethylbenzene	U	1.0							
m,p-Xylene	U	2.0							
o-Xylene	U	1.0							
Toluene	U	1.0							
Xylenes, Total	U	3.0							
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>45.96</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>91.9</i>	<i>70 - 123</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>49.51</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>99.0</i>	<i>77 - 113</i>			
<i>Surr: Dibromofluoromethane</i>	<i>43.4</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>86.8</i>	<i>73 - 126</i>			
<i>Surr: Toluene-d8</i>	<i>51.04</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>102</i>	<i>81 - 120</i>			

<b>LCS</b>		Sample ID: <b>VLCSW-231220</b>		Units: <b>ug/L</b>		Analysis Date: <b>20-Dec-2023 20:31</b>			
Client ID:		Run ID: <b>VOA12_454788</b>		SeqNo: <b>7741979</b>		PrepDate:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	17.13	1.0	20	0	85.7	74 - 120			
Ethylbenzene	16.78	1.0	20	0	83.9	77 - 117			
m,p-Xylene	35.83	2.0	40	0	89.6	77 - 122			
o-Xylene	17.17	1.0	20	0	85.9	75 - 119			
Toluene	20.63	1.0	20	0	103	77 - 118			
Xylenes, Total	53	3.0	60	0	88.3	75 - 122			
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>42.99</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>86.0</i>	<i>70 - 123</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>49.76</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>99.5</i>	<i>77 - 113</i>			
<i>Surr: Dibromofluoromethane</i>	<i>43.02</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>86.0</i>	<i>73 - 126</i>			
<i>Surr: Toluene-d8</i>	<i>50.89</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>102</i>	<i>81 - 120</i>			

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

**Batch ID:** R454788 ( 0 )      **Instrument:** VOA12      **Method:** LOW LEVEL VOLATILES BY SW8260C

<b>MS</b>		Sample ID: <b>HS23121058-02MS</b>		Units: <b>ug/L</b>		Analysis Date: <b>20-Dec-2023 23:09</b>			
Client ID:		Run ID: <b>VOA12_454788</b>		SeqNo: <b>7741985</b>		PrepDate:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	22.17	1.0	20	5.089	85.4	70 - 127			
Ethylbenzene	17.53	1.0	20	0	87.7	70 - 124			
m,p-Xylene	35.61	2.0	40	0	89.0	70 - 130			
o-Xylene	17.89	1.0	20	0	89.5	70 - 124			
Toluene	20.83	1.0	20	0	104	70 - 123			
Xylenes, Total	53.5	3.0	60	0	89.2	70 - 130			
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>44.67</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>89.3</i>	<i>70 - 126</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>49.34</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>98.7</i>	<i>77 - 113</i>			
<i>Surr: Dibromofluoromethane</i>	<i>43.36</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>86.7</i>	<i>77 - 123</i>			
<i>Surr: Toluene-d8</i>	<i>50.05</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>100</i>	<i>82 - 127</i>			

<b>MSD</b>		Sample ID: <b>HS23121058-02MSD</b>		Units: <b>ug/L</b>		Analysis Date: <b>20-Dec-2023 23:31</b>			
Client ID:		Run ID: <b>VOA12_454788</b>		SeqNo: <b>7741986</b>		PrepDate:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	22.44	1.0	20	5.089	86.7	70 - 127	22.17	1.21	20
Ethylbenzene	17.22	1.0	20	0	86.1	70 - 124	17.53	1.83	20
m,p-Xylene	35.64	2.0	40	0	89.1	70 - 130	35.61	0.11	20
o-Xylene	16.66	1.0	20	0	83.3	70 - 124	17.89	7.16	20
Toluene	20.62	1.0	20	0	103	70 - 123	20.83	1	20
Xylenes, Total	52.3	3.0	60	0	87.2	70 - 130	53.5	2.26	20
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>44.01</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>88.0</i>	<i>70 - 126</i>	<i>44.67</i>	<i>1.49</i>	<i>20</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>48.8</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>97.6</i>	<i>77 - 113</i>	<i>49.34</i>	<i>1.11</i>	<i>20</i>
<i>Surr: Dibromofluoromethane</i>	<i>41.16</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>82.3</i>	<i>77 - 123</i>	<i>43.36</i>	<i>5.21</i>	<i>20</i>
<i>Surr: Toluene-d8</i>	<i>51.21</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>102</i>	<i>82 - 127</i>	<i>50.05</i>	<i>2.29</i>	<i>20</i>

The following samples were analyzed in this batch: HS23120955-16

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

**Batch ID:** R454284 ( 0 )      **Instrument:** WetChem\_HS      **Method:** SULFIDE BY SM4500 S2-F-2011

**MBLK**      Sample ID: **MBLK-R454284**      Units: **mg/L**      Analysis Date: **15-Dec-2023 13:59**  
 Client ID:      Run ID: **WetChem\_HS\_454284** SeqNo: **7729995**      PrepDate:      DF: **1**  
 Analyte      Result      PQL      SPK Val      SPK Ref Value      %REC      Control Limit      RPD Ref Value      %RPD      RPD Limit Qual

Sulfide      U      2.00

**LCS**      Sample ID: **LCS-R454284**      Units: **mg/L**      Analysis Date: **15-Dec-2023 13:59**  
 Client ID:      Run ID: **WetChem\_HS\_454284** SeqNo: **7729994**      PrepDate:      DF: **1**  
 Analyte      Result      PQL      SPK Val      SPK Ref Value      %REC      Control Limit      RPD Ref Value      %RPD      RPD Limit Qual

Sulfide      21.96      2.00      25      0      87.8      85 - 115

**LCSD**      Sample ID: **LCSD-R454284**      Units: **mg/L**      Analysis Date: **15-Dec-2023 13:59**  
 Client ID:      Run ID: **WetChem\_HS\_454284** SeqNo: **7729993**      PrepDate:      DF: **1**  
 Analyte      Result      PQL      SPK Val      SPK Ref Value      %REC      Control Limit      RPD Ref Value      %RPD      RPD Limit Qual

Sulfide      21.76      2.00      25      0      87.0      85 - 115      21.96      0.915      20

**MS**      Sample ID: **HS23120955-01MS**      Units: **mg/L**      Analysis Date: **15-Dec-2023 13:59**  
 Client ID: **BS-1**      Run ID: **WetChem\_HS\_454284** SeqNo: **7729996**      PrepDate:      DF: **1**  
 Analyte      Result      PQL      SPK Val      SPK Ref Value      %REC      Control Limit      RPD Ref Value      %RPD      RPD Limit Qual

Sulfide      21.76      2.00      25      -1.04      91.2      80 - 120

The following samples were analyzed in this batch:

HS23120955-01	HS23120955-02	HS23120955-03	HS23120955-04
HS23120955-05	HS23120955-06	HS23120955-07	HS23120955-08
HS23120955-09	HS23120955-10	HS23120955-11	HS23120955-12
HS23120955-13	HS23120955-14	HS23120955-15	HS23120955-16

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

<b>Batch ID:</b> R454290 ( 0 )	<b>Instrument:</b> WetChem_HS	<b>Method:</b> HYDROGEN SULFIDE BY E376.1
--------------------------------	-------------------------------	---

<b>MBLK</b>	Sample ID: <b>MBLK-R454290</b>	Units: <b>mg/L</b>	Analysis Date: <b>15-Dec-2023 14:23</b>							
Client ID:	Run ID: <b>WetChem_HS_454290</b>	SeqNo: <b>7730105</b>	PrepDate: DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Hydrogen Sulfide U 1.00

<b>LCS</b>	Sample ID: <b>LCS-R454290</b>	Units: <b>mg/L</b>	Analysis Date: <b>15-Dec-2023 14:23</b>							
Client ID:	Run ID: <b>WetChem_HS_454290</b>	SeqNo: <b>7730104</b>	PrepDate: DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Hydrogen Sulfide 23.33 1.00 26.56 0 87.8 80 - 120

<b>LCSD</b>	Sample ID: <b>LCSD-R454290</b>	Units: <b>mg/L</b>	Analysis Date: <b>15-Dec-2023 14:23</b>							
Client ID:	Run ID: <b>WetChem_HS_454290</b>	SeqNo: <b>7730103</b>	PrepDate: DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Hydrogen Sulfide 23.12 1.00 26.56 0 87.0 80 - 120 23.33 0.915 20

**The following samples were analyzed in this batch:**

HS23120955-01	HS23120955-02	HS23120955-03	HS23120955-04
HS23120955-05	HS23120955-06	HS23120955-07	HS23120955-08
HS23120955-09	HS23120955-10	HS23120955-11	HS23120955-12
HS23120955-13	HS23120955-14	HS23120955-15	HS23120955-16

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

<b>Batch ID:</b> R454504 ( 0 )	<b>Instrument:</b> Balance1	<b>Method:</b> TOTAL DISSOLVED SOLIDS BY SM2540C-2011							
<b>MBLK</b>	Sample ID: <b>WMBLK-11162023</b>	Units: <b>mg/L</b>		Analysis Date: <b>15-Dec-2023 12:30</b>					
Client ID:	Run ID: <b>Balance1_454504</b>	SeqNo: <b>7735151</b>	PrepDate:	DF: <b>1</b>					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Total Dissolved Solids (Residue, Filterable) U 10.0

<b>LCS</b>	Sample ID: <b>WLCS-11162023</b>	Units: <b>mg/L</b>		Analysis Date: <b>15-Dec-2023 12:30</b>					
Client ID:	Run ID: <b>Balance1_454504</b>	SeqNo: <b>7735150</b>	PrepDate:	DF: <b>1</b>					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Total Dissolved Solids (Residue, Filterable) 1030 10.0 1000 0 103 85 - 115

<b>DUP</b>	Sample ID: <b>HS23120955-03DUP</b>	Units: <b>mg/L</b>		Analysis Date: <b>15-Dec-2023 12:30</b>					
Client ID: <b>BS-19</b>	Run ID: <b>Balance1_454504</b>	SeqNo: <b>7735145</b>	PrepDate:	DF: <b>1</b>					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Total Dissolved Solids (Residue, Filterable) 1648 10.0 1644 0.243 20

<b>DUP</b>	Sample ID: <b>HS23120812-02DUP</b>	Units: <b>mg/L</b>		Analysis Date: <b>15-Dec-2023 12:30</b>					
Client ID:	Run ID: <b>Balance1_454504</b>	SeqNo: <b>7735136</b>	PrepDate:	DF: <b>1</b>					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Total Dissolved Solids (Residue, Filterable) 1212 10.0 1212 0 20

<b>The following samples were analyzed in this batch:</b>	HS23120955-01	HS23120955-02	HS23120955-03	HS23120955-04
	HS23120955-05	HS23120955-06	HS23120955-07	

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

**Batch ID:** R454505 ( 0 )      **Instrument:** Balance1      **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

<b>MBLK</b>	Sample ID: <b>WMBLK-12152023</b>	Units: <b>mg/L</b>			Analysis Date: <b>15-Dec-2023 13:00</b>				
Client ID:	Run ID: <b>Balance1_454505</b>	SeqNo: <b>7735176</b>		PrepDate:			DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Total Dissolved Solids (Residue, Filterable)      U      10.0

<b>LCS</b>	Sample ID: <b>WLCS-12152023</b>	Units: <b>mg/L</b>			Analysis Date: <b>15-Dec-2023 13:00</b>				
Client ID:	Run ID: <b>Balance1_454505</b>	SeqNo: <b>7735175</b>		PrepDate:			DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Total Dissolved Solids (Residue, Filterable)      1008      10.0      1000      0      101      85 - 115

<b>DUP</b>	Sample ID: <b>HS23120827-07DUP</b>	Units: <b>mg/L</b>			Analysis Date: <b>15-Dec-2023 13:00</b>				
Client ID:	Run ID: <b>Balance1_454505</b>	SeqNo: <b>7735162</b>		PrepDate:			DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Total Dissolved Solids (Residue, Filterable)      1536      10.0      1540      0.26      20

<b>DUP</b>	Sample ID: <b>HS23120827-02DUP</b>	Units: <b>mg/L</b>			Analysis Date: <b>15-Dec-2023 13:00</b>				
Client ID:	Run ID: <b>Balance1_454505</b>	SeqNo: <b>7735156</b>		PrepDate:			DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Total Dissolved Solids (Residue, Filterable)      1464      10.0      1468      0.273      20

The following samples were analyzed in this batch:

HS23120955-08	HS23120955-09	HS23120955-10	HS23120955-11
HS23120955-12	HS23120955-13		

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

Batch ID: R454578 ( 0 )		Instrument: Balance1		Method: TOTAL DISSOLVED SOLIDS BY SM2540C-2011						
<b>MBLK</b>	Sample ID: <b>WMBLK-12182023</b>	Units: <b>mg/L</b>		Analysis Date: <b>18-Dec-2023 12:27</b>						
Client ID:	Run ID: <b>Balance1_454578</b>	SeqNo: <b>7737065</b>		PrepDate:			DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Total Dissolved Solids (Residue, Filterable)		U	10.0							
<b>LCS</b>	Sample ID: <b>WLCS-12182023</b>	Units: <b>mg/L</b>		Analysis Date: <b>18-Dec-2023 12:27</b>						
Client ID:	Run ID: <b>Balance1_454578</b>	SeqNo: <b>7737064</b>		PrepDate:			DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Total Dissolved Solids (Residue, Filterable)		1058	10.0	1000	0	106	85 - 115			
<b>DUP</b>	Sample ID: <b>HS23121047-05DUP</b>	Units: <b>mg/L</b>		Analysis Date: <b>18-Dec-2023 12:27</b>						
Client ID:	Run ID: <b>Balance1_454578</b>	SeqNo: <b>7737058</b>		PrepDate:			DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Total Dissolved Solids (Residue, Filterable)		63770	10.0				63770	0.00627	20	
<b>DUP</b>	Sample ID: <b>HS23120955-14DUP</b>	Units: <b>mg/L</b>		Analysis Date: <b>18-Dec-2023 12:27</b>						
Client ID: <b>7A-BS</b>	Run ID: <b>Balance1_454578</b>	SeqNo: <b>7737043</b>		PrepDate:			DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Total Dissolved Solids (Residue, Filterable)		68	10.0				70	2.9	20	
<b>The following samples were analyzed in this batch:</b>		HS23120955-14	HS23120955-15	HS23120955-16	HS23120955-17					
		HS23120955-18	HS23120955-19	HS23120955-20	HS23120955-21					
		HS23120955-22								

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

Batch ID: R454579 ( 0 )		Instrument: Balance1		Method: TOTAL DISSOLVED SOLIDS BY SM2540C-2011						
<b>MBLK</b>	Sample ID: <b>WMBLK-12182023</b>	Units: <b>mg/L</b>		Analysis Date: <b>18-Dec-2023 13:30</b>						
Client ID:	Run ID: <b>Balance1_454579</b>	SeqNo: <b>7737106</b>		PrepDate:			DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Total Dissolved Solids (Residue, Filterable)		U	10.0							
<b>LCS</b>	Sample ID: <b>WLCS-12182023</b>	Units: <b>mg/L</b>		Analysis Date: <b>18-Dec-2023 13:30</b>						
Client ID:	Run ID: <b>Balance1_454579</b>	SeqNo: <b>7737105</b>		PrepDate:			DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Total Dissolved Solids (Residue, Filterable)		1076	10.0	1000	0	108	85 - 115			
<b>DUP</b>	Sample ID: <b>HS23121025-03DUP</b>	Units: <b>mg/L</b>		Analysis Date: <b>18-Dec-2023 13:30</b>						
Client ID:	Run ID: <b>Balance1_454579</b>	SeqNo: <b>7737095</b>		PrepDate:			DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Total Dissolved Solids (Residue, Filterable)		1012	10.0				1016	0.394	20	
<b>DUP</b>	Sample ID: <b>HS23120955-25DUP</b>	Units: <b>mg/L</b>		Analysis Date: <b>18-Dec-2023 13:30</b>						
Client ID: <b>WW #12</b>	Run ID: <b>Balance1_454579</b>	SeqNo: <b>7737087</b>		PrepDate:			DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Total Dissolved Solids (Residue, Filterable)		138	10.0				138	0	20	
<b>The following samples were analyzed in this batch:</b>		HS23120955-23	HS23120955-24	HS23120955-25	HS23120955-26	HS23120955-27	HS23120955-28			

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

<b>Batch ID:</b> R454695 ( 0 )	<b>Instrument:</b> ICS-Integrion	<b>Method:</b> ANIONS BY SW9056A
--------------------------------	----------------------------------	----------------------------------

<b>MBLK</b>	Sample ID: <b>MBLK</b>	Units: <b>mg/L</b>	Analysis Date: <b>19-Dec-2023 20:09</b>							
Client ID:	Run ID: <b>ICS-Integrion_454695</b>	SeqNo: <b>7739825</b>	PrepDate: DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	U	0.100								
Chloride	U	0.500								
Sulfate	U	0.500								

<b>LCS</b>	Sample ID: <b>LCS</b>	Units: <b>mg/L</b>	Analysis Date: <b>19-Dec-2023 20:27</b>							
Client ID:	Run ID: <b>ICS-Integrion_454695</b>	SeqNo: <b>7739826</b>	PrepDate: DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.904	0.100	4	0	97.6	80 - 120				
Chloride	21.99	0.500	20	0	110	80 - 120				
Sulfate	20.78	0.500	20	0	104	80 - 120				

<b>MS</b>	Sample ID: <b>HS23120955-04MS</b>	Units: <b>mg/L</b>	Analysis Date: <b>19-Dec-2023 22:18</b>							
Client ID: <b>BS-26</b>	Run ID: <b>ICS-Integrion_454695</b>	SeqNo: <b>7739842</b>	PrepDate: DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.6142	0.100	2	0	30.7	80 - 120				S
Chloride	48.42	0.500	10	38.27	101	80 - 120				
Sulfate	27.37	0.500	10	21.72	56.5	80 - 120				S

<b>MSD</b>	Sample ID: <b>HS23120955-04MSD</b>	Units: <b>mg/L</b>	Analysis Date: <b>19-Dec-2023 22:24</b>							
Client ID: <b>BS-26</b>	Run ID: <b>ICS-Integrion_454695</b>	SeqNo: <b>7739843</b>	PrepDate: DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.6167	0.100	2	0	30.8	80 - 120	0.6142	0.406	20	S
Chloride	47.83	0.500	10	38.27	95.6	80 - 120	48.42	1.22	20	
Sulfate	27.79	0.500	10	21.72	60.7	80 - 120	27.37	1.53	20	S

<b>The following samples were analyzed in this batch:</b>	HS23120955-01	HS23120955-02	HS23120955-03	HS23120955-04
	HS23120955-05	HS23120955-06	HS23120955-07	HS23120955-08
	HS23120955-09	HS23120955-10	HS23120955-11	HS23120955-12
	HS23120955-13	HS23120955-14	HS23120955-15	

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

**Batch ID:** R454705 ( 0 )      **Instrument:** ICS-Integrion      **Method:** ANIONS BY SW9056A

<b>MBLK</b>		Sample ID: <b>MBLK</b>		Units: <b>mg/L</b>		Analysis Date: <b>20-Dec-2023 02:00</b>			
Client ID:		Run ID: <b>ICS-Integrion_454705</b>		SeqNo: <b>7740050</b>		PrepDate:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Bromide	U	0.100							
Chloride	U	0.500							
Sulfate	U	0.500							

<b>LCS</b>		Sample ID: <b>LCS</b>		Units: <b>mg/L</b>		Analysis Date: <b>20-Dec-2023 02:11</b>			
Client ID:		Run ID: <b>ICS-Integrion_454705</b>		SeqNo: <b>7740051</b>		PrepDate:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Bromide	4.193	0.100	4	0	105	80 - 120			
Chloride	21.97	0.500	20	0	110	80 - 120			
Sulfate	21.23	0.500	20	0	106	80 - 120			

<b>MS</b>		Sample ID: <b>HS23120535-01MS</b>		Units: <b>mg/L</b>		Analysis Date: <b>20-Dec-2023 06:40</b>			
Client ID:		Run ID: <b>ICS-Integrion_454705</b>		SeqNo: <b>7740087</b>		PrepDate:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Bromide	1.363	0.100	2	0	68.2	80 - 120			S
Chloride	15.3	0.500	10	4.282	110	80 - 120			
Sulfate	24.86	0.500	10	16.21	86.5	80 - 120			

<b>MSD</b>		Sample ID: <b>HS23120535-01MSD</b>		Units: <b>mg/L</b>		Analysis Date: <b>20-Dec-2023 06:46</b>			
Client ID:		Run ID: <b>ICS-Integrion_454705</b>		SeqNo: <b>7740088</b>		PrepDate:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Bromide	1.519	0.100	2	0	76.0	80 - 120	1.363	10.8	20 S
Chloride	15.25	0.500	10	4.282	110	80 - 120	15.3	0.347	20
Sulfate	25.36	0.500	10	16.21	91.5	80 - 120	24.86	2	20

**The following samples were analyzed in this batch:**

HS23120955-16	HS23120955-17	HS23120955-18	HS23120955-19
HS23120955-20	HS23120955-21	HS23120955-22	HS23120955-23
HS23120955-24	HS23120955-25	HS23120955-26	HS23120955-27
HS23120955-28			

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

**Batch ID:** R454739 ( 0 )      **Instrument:** WetChem\_HS      **Method:** SULFIDE BY SM4500 S2-F-2011

**MBLK**      Sample ID: **MBLK-R454739**      Units: **mg/L**      Analysis Date: **20-Dec-2023 14:48**  
 Client ID:      Run ID: **WetChem\_HS\_454739** SeqNo: **7740778**      PrepDate:      DF: **1**  
 Analyte      Result      PQL      SPK Val      SPK Ref Value      %REC      Control Limit      RPD Ref Value      %RPD      RPD Limit Qual

Sulfide      U      2.00

**LCS**      Sample ID: **LCS-R454739**      Units: **mg/L**      Analysis Date: **20-Dec-2023 14:48**  
 Client ID:      Run ID: **WetChem\_HS\_454739** SeqNo: **7740777**      PrepDate:      DF: **1**  
 Analyte      Result      PQL      SPK Val      SPK Ref Value      %REC      Control Limit      RPD Ref Value      %RPD      RPD Limit Qual

Sulfide      21.6      2.00      25      0      86.4      85 - 115

**LCSD**      Sample ID: **LCSD-R454739**      Units: **mg/L**      Analysis Date: **20-Dec-2023 14:48**  
 Client ID:      Run ID: **WetChem\_HS\_454739** SeqNo: **7740776**      PrepDate:      DF: **1**  
 Analyte      Result      PQL      SPK Val      SPK Ref Value      %REC      Control Limit      RPD Ref Value      %RPD      RPD Limit Qual

Sulfide      21.4      2.00      25      0      85.6      85 - 115      21.6      0.93      20

**MS**      Sample ID: **HS23120955-17MS**      Units: **mg/L**      Analysis Date: **20-Dec-2023 14:48**  
 Client ID: **BS-22**      Run ID: **WetChem\_HS\_454739** SeqNo: **7740775**      PrepDate:      DF: **1**  
 Analyte      Result      PQL      SPK Val      SPK Ref Value      %REC      Control Limit      RPD Ref Value      %RPD      RPD Limit Qual

Sulfide      21.6      2.00      25      -1.2      91.2      80 - 120

The following samples were analyzed in this batch:

HS23120955-17	HS23120955-18	HS23120955-19	HS23120955-20
HS23120955-21	HS23120955-22	HS23120955-23	HS23120955-24
HS23120955-25	HS23120955-26	HS23120955-27	HS23120955-28

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

**Batch ID:** R454744 ( 0 )      **Instrument:** WetChem\_HS      **Method:** HYDROGEN SULFIDE BY E376.1

<b>MBLK</b>	Sample ID: <b>MBLK-R454744</b>	Units: <b>mg/L</b>	Analysis Date: <b>20-Dec-2023 15:10</b>						
Client ID:	Run ID: <b>WetChem_HS_454744</b>	SeqNo: <b>7740868</b>	PrepDate:				DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual

Hydrogen Sulfide      U      1.00

<b>LCS</b>	Sample ID: <b>LCS-R454744</b>	Units: <b>mg/L</b>	Analysis Date: <b>20-Dec-2023 15:10</b>						
Client ID:	Run ID: <b>WetChem_HS_454744</b>	SeqNo: <b>7740867</b>	PrepDate:				DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual

Hydrogen Sulfide      22.95      1.00      26.56      0      86.4      80 - 120

<b>LCSD</b>	Sample ID: <b>LCSD-R454744</b>	Units: <b>mg/L</b>	Analysis Date: <b>20-Dec-2023 15:10</b>						
Client ID:	Run ID: <b>WetChem_HS_454744</b>	SeqNo: <b>7740866</b>	PrepDate:				DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual

Hydrogen Sulfide      22.74      1.00      26.56      0      85.6      80 - 120      22.95      0.93      20

**The following samples were analyzed in this batch:**

HS23120955-17	HS23120955-18	HS23120955-19	HS23120955-20
HS23120955-21	HS23120955-22	HS23120955-23	HS23120955-24
HS23120955-25	HS23120955-26	HS23120955-27	HS23120955-28

Revision: 1

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

<b>Batch ID:</b> R454876 ( 0 )	<b>Instrument:</b> Skalar 03	<b>Method:</b> ALKALINITY BY -2011
--------------------------------	------------------------------	------------------------------------

<b>MBLK</b>	Sample ID: <b>MBLK-12.20.2023</b>	Units: <b>mg/L</b>	Analysis Date: <b>20-Dec-2023 12:13</b>							
Client ID:	Run ID: <b>Skalar 03_454876</b>	SeqNo: <b>7743665</b>	PrepDate: DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	U	5.00								
Alkalinity, Carbonate (As CaCO3)	U	5.00								

<b>LCS</b>	Sample ID: <b>LCS-12.20.2023</b>	Units: <b>mg/L</b>	Analysis Date: <b>20-Dec-2023 12:19</b>							
Client ID:	Run ID: <b>Skalar 03_454876</b>	SeqNo: <b>7743666</b>	PrepDate: DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Alkalinity, Carbonate (As CaCO3)	893.2	5.00	1000	0	89.3	85 - 115				

<b>LCSD</b>	Sample ID: <b>LCSD-12.20.2023</b>	Units: <b>mg/L</b>	Analysis Date: <b>20-Dec-2023 12:26</b>							
Client ID:	Run ID: <b>Skalar 03_454876</b>	SeqNo: <b>7743667</b>	PrepDate: DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Alkalinity, Carbonate (As CaCO3)	891.6	5.00	1000	0	89.2	85 - 115	893.2	0.179	20	

<b>DUP</b>	Sample ID: <b>HS23120786-01DUP</b>	Units: <b>mg/L</b>	Analysis Date: <b>20-Dec-2023 12:48</b>							
Client ID:	Run ID: <b>Skalar 03_454876</b>	SeqNo: <b>7743671</b>	PrepDate: DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	378.5	5.00					372.4	1.62	20	
Alkalinity, Carbonate (As CaCO3)	U	5.00					0	0	20	

The following samples were analyzed in this batch:

HS23120955-01	HS23120955-02	HS23120955-03	HS23120955-04
HS23120955-05	HS23120955-06	HS23120955-07	HS23120955-08
HS23120955-09	HS23120955-10	HS23120955-11	HS23120955-12

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

**Batch ID:** R454880 ( 0 )      **Instrument:** Skalar 03      **Method:** PH BY SM4500H+ B-2011

<b>DUP</b>	Sample ID: <b>HS23120786-01DUP</b>	Units: <b>pH Units</b>		Analysis Date: <b>20-Dec-2023 12:48</b>						
Client ID:	Run ID: <b>Skalar 03_454880</b>	SeqNo: <b>7743823</b>	PrepDate:	DF: <b>1</b>						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.94	0.100					6.91	0.433	10	
Temp Deg C @pH	16.9	0					16.7	1.19	10	

**The following samples were analyzed in this batch:**

HS23120955-01	HS23120955-02	HS23120955-03	HS23120955-04
HS23120955-05	HS23120955-06	HS23120955-07	HS23120955-08
HS23120955-09	HS23120955-10	HS23120955-11	HS23120955-12

**Revision: 1**

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

**Batch ID:** R454882 ( 0 )      **Instrument:** Skalar 03      **Method:** PH BY SM4500H+ B-2011

<b>DUP</b>	Sample ID: <b>HS23120955-15DUP</b>	Units: <b>pH Units</b>		Analysis Date: <b>20-Dec-2023 15:29</b>						
Client ID: <b>BS-13</b>	Run ID: <b>Skalar 03_454882</b>	SeqNo: <b>7743863</b>	PrepDate:	DF: <b>1</b>						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	7.85	0.100					7.85		0	10
Temp Deg C @pH	20.4	0					20.1	1.48		10

**The following samples were analyzed in this batch:**

HS23120955-13	HS23120955-14	HS23120955-15	HS23120955-16
HS23120955-17	HS23120955-18	HS23120955-19	HS23120955-20
HS23120955-21	HS23120955-22	HS23120955-23	HS23120955-24
HS23120955-25	HS23120955-26	HS23120955-27	HS23120955-28

**Revision: 1**

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QC BATCH REPORT**

**Batch ID:** R454884 ( 0 )      **Instrument:** Skalar 03      **Method:** ALKALINITY BY -2011

<b>MBLK</b>		Sample ID: <b>MBLK-12.20.2023</b>		Units: <b>mg/L</b>		Analysis Date: <b>20-Dec-2023 14:54</b>			
Client ID:		Run ID: <b>Skalar 03_454884</b>		SeqNo: <b>7743903</b>		PrepDate:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Alkalinity, Bicarbonate (As CaCO3)	U	5.00							
Alkalinity, Carbonate (As CaCO3)	U	5.00							

<b>LCS</b>		Sample ID: <b>LCS-12.20.2023</b>		Units: <b>mg/L</b>		Analysis Date: <b>20-Dec-2023 15:01</b>			
Client ID:		Run ID: <b>Skalar 03_454884</b>		SeqNo: <b>7743904</b>		PrepDate:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Alkalinity, Carbonate (As CaCO3)	876.2	5.00	1000	0	87.6	85 - 115			

<b>LCSD</b>		Sample ID: <b>LCSD-12.20.2023</b>		Units: <b>mg/L</b>		Analysis Date: <b>20-Dec-2023 15:07</b>			
Client ID:		Run ID: <b>Skalar 03_454884</b>		SeqNo: <b>7743905</b>		PrepDate:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Alkalinity, Carbonate (As CaCO3)	876.2	5.00	1000	0	87.6	85 - 115	876.2	0	20

<b>DUP</b>		Sample ID: <b>HS23120955-15DUP</b>		Units: <b>mg/L</b>		Analysis Date: <b>20-Dec-2023 15:29</b>			
Client ID: <b>BS-13</b>		Run ID: <b>Skalar 03_454884</b>		SeqNo: <b>7743909</b>		PrepDate:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Alkalinity, Bicarbonate (As CaCO3)	140.8	5.00					143.8	2.11	20
Alkalinity, Carbonate (As CaCO3)	U	5.00					0	0	20

**The following samples were analyzed in this batch:**

HS23120955-13	HS23120955-14	HS23120955-15	HS23120955-16
HS23120955-17	HS23120955-18	HS23120955-19	HS23120955-20
HS23120955-21	HS23120955-22	HS23120955-23	HS23120955-24
HS23120955-25	HS23120955-26	HS23120955-27	HS23120955-28

**Client:** Environmental Resources Mgmt.  
**Project:** Sulphur Dome  
**WorkOrder:** HS23120955

**QUALIFIERS,  
ACRONYMS, UNITS**

<b>Qualifier</b>	<b>Description</b>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

<b>Acronym</b>	<b>Description</b>
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

<b>Unit Reported</b>	<b>Description</b>
mg/L	Milligrams per Liter

**CERTIFICATIONS,ACCREDITATIONS & LICENSES**

<b>Agency</b>	<b>Number</b>	<b>Expire Date</b>
Arkansas	88-00356	27-Mar-2024
California	2919; 2024	30-Apr-2024
Dept of Defense	L23-358	31-May-2025
Florida	E87611-38	30-Jun-2024
Illinois	2000322023-11	30-Jun-2024
Kansas	E-10352 2023-2024	31-Jul-2024
Louisiana	03087 2023-2024	30-Jun-2024
Maryland	343; 2023-2024	30-Jun-2024
North Carolina	624-2023	31-Dec-2023
North Dakota	R-193 2023-2024	30-Apr-2024
Oklahoma	2023-140	31-Aug-2024
Texas	T104704231-23-32	30-Apr-2024
Utah	TX026932023-14	31-Jul-2024

Sample Receipt Checklist

Work Order ID: HS23120955

Date/Time Received: 14-Dec-2023 14:30

Client Name: ERMSW-HOU

Received by: Corey Grandits

Completed By: /S/ Corey Grandits 14-Dec-2023 17:35 Reviewed by: /S/ Nieka Carson 15-Dec-2023 09:17
eSignature Date/Time eSignature Date/Time

Matrices: W

Carrier name: Client

- Shipping container/cooler in good condition? Yes [checked] No [ ] Not Present [ ]
Custody seals intact on shipping container/cooler? Yes [ ] No [ ] Not Present [checked]
Custody seals intact on sample bottles? Yes [ ] No [ ] Not Present [checked]
VOA/TX1005/TX1006 Solids in hermetically sealed vials? Yes [ ] No [ ] Not Present [checked]
Chain of custody present? Yes [checked] No [ ]
Chain of custody signed when relinquished and received? Yes [checked] No [ ]
Samplers name present on COC? Yes [checked] No [ ]
Chain of custody agrees with sample labels? Yes [ ] No [checked]
Samples in proper container/bottle? Yes [checked] No [ ]
Sample containers intact? Yes [checked] No [ ]
Sufficient sample volume for indicated test? Yes [checked] No [ ]
All samples received within holding time? Yes [checked] No [ ]
Container/Temp Blank temperature in compliance? Yes [checked] No [ ]

4 Page(s)
COC IDs:304755, 304756, 304754, 304752

Temperature(s)/Thermometer(s): 1.4/1.3,1.1/1.0,2.0/1.9,0.8/0.7,1.6/1.5,1.0/0.9,1.3/1.2 IR31
0.6/0.5,4.7/4.6UC/C

Cooler(s)/Kit(s): 51985, 51961, 51991, 51986, 91990, 59184, 51987, 51960, 51989

Date/Time sample(s) sent to storage: 12/14/23

Water - VOA vials have zero headspace? Yes [checked] No [ ] No VOA vials submitted [ ]

Water - pH acceptable upon receipt? Yes [checked] No [ ] N/A [ ]

pH adjusted? Yes [ ] No [checked] N/A [ ]

pH adjusted by: [ ]

Login Notes: See case narrative for collection time discrepancies.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments: [ ]

Corrective Action: [ ]



Cincinnati, OH  
+1 513 733 5336

Fort Collins, CO  
+1 970 490 1511

Everett, WA  
+1 425 356 2600

Holland, MI  
+1 616 399 6070

# Chain of Custody Form

Page 1 of 4

COC ID: **304755**

**HS23120955**

Environmental Resources Mgmt.  
Sulphur Dome



in, WV  
S  
0

Customer Information		Project Information		ALS Project Manager:	
Purchase Order	0143154	Project Name	Sulphur Dome	A	2001 W. Willow Lane, VEG (0266) RIFPH
Work Order		Project Number		B	MA MPH, W. L. (MA MPH)
Company Name	Environmental Resources Mgmt.	Bill To Company	Environmental Resources Mgmt.	C	MA MPH, CA (MA MPH)
Send Report To	Scott Himes	Invoice Attn	Accounts Payable	D	2056 Juniper Ct (2056 Juniper)
Address	City Centre Point 849 W. Dairy House Dr. Suite 0	Address	City Centre Point 849 W. Dairy House Dr. Suite 0	E	ALK, W 2000 North, Houston, TX
City/State/Zip	Houston, TX 77024	City/State/Zip	Houston, TX 77024	F	105 W (105 W)
Phone	(281) 800-1000	Phone	(281) 800-1000	G	105 W (Mercury)
Fax	(281) 800-1001	Fax	(281) 800-1001	H	105 W (105 W)
e-Mail Address	scott.himes@erms.com	e-Mail Address	scott.himes@erms.com	I	105 W (105 W)
				J	105 W (105 W)

Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
BS-1	12/11/23	10:00	W	1, 2, 8	12	X	X	X	X	X	X	X	X	X	X	
<del>BS-1</del>		<del>10:00</del>														
7B-BS	12/11/23	11:00														
BS-19		11:45														
BS-26		13:30														
BS-4		15:40														
BS-3		16:30														
BS-24		17:00														

Requester(s) Please Print & Sign <b>Taylor Brown</b>		Shipment Method <b>drop off</b>	Required Turnaround Time: (Check Box) <input checked="" type="checkbox"/> > 24 hours <input type="checkbox"/> 48 hours <input type="checkbox"/> 72 hours <input type="checkbox"/> 1 week	<b>RUSH TAT</b>	Results Due Date:
Requested by: <b>Taylor Brown</b>	Date: <b>12/14/23</b>	Time: <b>14:30</b>	Received by:	Notes: <b>ERMS Sulphur Dome</b>	
Received by (Laboratory): <b>CC 0-14-23 1436</b>	Date:	Time:	Checked by (Laboratory):	Cooler ID	Cooler Temp.
				<b>51984</b>	<b>1.4</b>
				<b>51961</b>	<b>1.1</b>
				<b>51991</b>	<b>2.6</b>

1. This Chain of Custody Form is to be used for all samples and COC Form has been submitted to ALS Environmental.  
 2. This Chain of Custody Form is provided by ALS Environmental and is not to be used for any other purpose.  
 3. This Chain of Custody is a legal document, all information must be completed accurately.

Copyright 2011 by ALS Environmental



Cincinnati, OH  
+1 513 233-3336

Savannah, GA  
+1 423 336-3600

Fort Collins, CO  
+1 970 499-1544

Indianapolis, IN  
+1 616 339-6670

### Chain of Custody Form

**HS23120955**

Environmental Resources Mgmt.  
Sulphur Dome



Page Z of 4

COC ID: **304756**

ALS Project Number:

#### Customer Information

Purchase Order # \_\_\_\_\_  
 Work Order # \_\_\_\_\_  
 Company Name \_\_\_\_\_  
 Street/Report To \_\_\_\_\_  
 Address \_\_\_\_\_  
 City/State/Zip \_\_\_\_\_  
 Phone \_\_\_\_\_  
 Fax \_\_\_\_\_  
 e-mail Address \_\_\_\_\_

#### Project Information

Project Name \_\_\_\_\_  
 Project Number \_\_\_\_\_  
 POC/Company \_\_\_\_\_  
 Investigator \_\_\_\_\_  
 Address \_\_\_\_\_  
 City/State/Zip \_\_\_\_\_  
 Phone \_\_\_\_\_  
 Fax \_\_\_\_\_  
 e-mail Address \_\_\_\_\_

#### Sample Description

BS-8  
 BS-12  
 BS-7  
 BS-6  
 BS-25  
 BS-23  
 74-BS

#### Collection Information

Date: 12/12/23  
 Time: 8:30  
 Location: W  
 Analyst: 1, 2, 8, 12  
 Remarks: \_\_\_\_\_

#### Analysis Information

Element	1	2	3	4	5	6	7	8	9	10
As	X	X	X	X	X	X	X	X	X	X
Bi										
Co										
Cr										
Cu										
Fe										
Mn										
Ni										
Pb										
Sb										
Se										
Te										
Tl										
V										
W										
Zn										

Sampled by: Taylor Brown, 12/12/23  
 Analyzed by: Taylor Brown, 12/14/23  
 14:30

Rush-FAT

ALS Project Number: 304756

51986  
 51988  
 51989

08  
 1.6  
 1.0





Cincinnati, OH  
+1 513 733 5336

Everett, WA  
+1 425 356 2600

Fort Collins, CO  
+1 970 490 1511

Holland, MI  
+1 616 399 6070

# Chain of Custody For

Page 4 of 4

COC ID: 304752

## HS23120955

Environmental Resources Mgmt.  
Sulphur Dome

m, WV  
S

0

ALS Project Manager:



Customer Information		Project Information	
Purchase Order	54777	Project Name	Sulphur Dome
Work Order		Project Number	
Company Name	Environmental Resources Mgmt.	Bill To Company	Environmental Resources Mgmt.
Send Report To	John Hinds	Invoice Attn	John Hinds
Address	11000 S. Park	Address	540 W. Main Street, Suite 5
City/State/Zip	Portland, OR 97204	City/State/Zip	Portland, OR 97204
Phone	(503) 608-1000	Phone	(503) 608-1000
Fax	(503) 608-1001	Fax	(503) 608-1001
e-Mail Address	john.hinds@erms.com	e-Mail Address	RANDY@erms.com

- A. [unclear]
- B. [unclear]
- C. [unclear]
- D. [unclear]
- E. [unclear]
- F. [unclear]
- G. [unclear]
- H. [unclear]
- I. [unclear]
- J. [unclear]

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold	
1	WW #19	12/14/23	7:45	W	1,2,8	12	X	X	X	X	X	X	X	X	X	X	X	
2	WW #11		8:00															
3	WW #12		8:45															
4	WW #13		9:00															
5	Cottages Well		9:15															
6	WW #40		10:30															
7																		
8																		
9																		
10																		

Sampler(s) Please Print & Sign <b>Taylor Brown Taylor Brown</b>	Shipment Method	Required Turnaround Time: (Check Box) <input checked="" type="checkbox"/> Rush <input type="checkbox"/> Standard	Results Due Date:
Released by: <b>Taylor Brown</b> Date: <b>12/14/23</b> Time: <b>14:40</b>	Received by: <b>CA</b> Date: <b>12-14-23</b> Time: <b>14:30</b>	Notes: <b>RUSH TAT</b>	
Accepted by Laboratory:	Checked by (Laboratory):	Cooler ID	Cooler Temp.
Preservative Key: 1-HCl, 2-HNO <sub>3</sub> , 3-H <sub>2</sub> SO <sub>4</sub> , 4-HClO <sub>4</sub> , 5-Na <sub>2</sub> S <sub>2</sub> O <sub>8</sub> , 6-NH <sub>4</sub> OH, 7-CO <sub>2</sub> , 8-FC, 9-None		QC Package: (Check One Box Below)	

Notes: 1. Any changes must be made in writing on a sample and COC. Fees may be assessed for changes to a sample or COC.  
 2. Unless otherwise agreed in a written contract, services provided by ALS Environmental Resources Mgmt. are provided on an "as is" basis with no warranty of fitness for a particular purpose.  
 3. The Chain of Custody is a legal document. All information must be completed accurately.

Lab #: 887581      Job #: 55817      IS-102884      Co. Job#:   
 Sample Name: SN 189416      Co. Lab#:   
 Company: Environmental Resources Management (ERM)   
 API/Well:   
 Container: IsoBag   
 Field/Site Name: Sulphur Dome   
 Location: Sulphur Louisiana   
 Formation:   
 Sampling Point:   
 Date Sampled: 8/29/2023 8:22      Date Received: 8/31/2023      Date Reported: 10/17/2023

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.0400			
Oxygen -----	0.12			
Nitrogen -----	3.71			
Carbon Dioxide -----	0.012			
Methane -----	93.74	-53.17	-177.8	
Ethane -----	1.40			
Ethylene -----	0.0003			
Propane -----	0.662			
Propylene -----	0.0002			
Iso-butane -----	0.118			
N-butane -----	0.135			
Iso-pentane -----	0.0214			
N-pentane -----	0.0138			
Hexanes + -----	0.0319			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1003

Specific gravity, calculated: 0.589

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

**SEND DATA TO:**

Name: Scott Himes

Company: ERM

Address: 840 W. Sam Houston Pkwy N.  
Ste 600  
Houston, TX 77024

Phone: 832-209-8811

Email: scott.himes@erm.com

Project: Sulphur Dome

PO #: 0701093

Location: Sulphur Louisiana

Sampled By: Scott Himes

**SEND INVOICE TO (if different from SEND DATA TO):**

Name:

Company:

Address:

Phone:

Email:

Standard

Priority

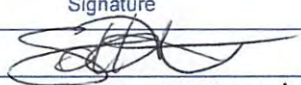
Rush

Analysis Requested

## Sample Description

Container Number	Sample Identification	Date Sampled	Time	NG-1					Comments
1	SN 189416	Aug-29-23	8:22 am	X					

## Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by		ERM	8/30/23	1400
Received by	Les Schluter / SR Isotech		8-31-23	8:45
Relinquished by				
Received by				
Relinquished by				
Received by				

Lab #: 895498 Job #: 56510 IS-102884 Co. Job#:

Sample Name: Starks Tie - In Co. Lab#:

Company: Environmental Resources Management (ERM)

API/Well:

Container: Isoflask & Plastic Bottle

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 10/30/2023 11:00 Date Received: 10/31/2023 Date Reported: 11/10/2023

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{18}\text{O}$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide -----	nd					
Helium -----	na					
Hydrogen -----	nd					
Argon -----	1.38					
Oxygen -----	7.65					
Nitrogen -----	72.47					
Carbon Dioxide -----	13.83					
Methane -----	4.65	-68.91	-183		0.90	0.60
Ethane -----	0.0033				0.00072	0.00090
Ethylene -----	nd					
Propane -----	0.0013				0.00027	0.00049
Propylene -----	nd					
Iso-butane -----	nd					
N-butane -----	nd					
Iso-pentane -----	nd					
N-pentane -----	nd					
Hexanes + -----	0.0114					
Water -----			-19.9	-4.18		
Dissolved Inorganic Carbon -		-13.2				
Vacuum Distilled? -----	No					

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.85

\*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

Data for dD of methane obtained online via GC-IRMS.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 895499 Job #: 56510 IS-102884 Co. Job#:

Sample Name: Brine Well #18 Co. Lab#:

Company: Environmental Resources Management (ERM)

API/Well:

Container: Isoflask & Plastic Bottle

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 10/30/2023 11:30 Date Received: 10/31/2023 Date Reported: 11/10/2023

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{18}\text{O}$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide -----	nd					
Helium -----	na					
Hydrogen -----	nd					
Argon -----	1.68					
Oxygen -----	1.95					
Nitrogen -----	75.33					
Carbon Dioxide -----	12.71					
Methane -----	8.28	-35.32	-131.6		2.0	1.3
Ethane -----	0.0387				0.010	0.013
Ethylene -----	0.0011					
Propane -----	0.0038				0.00093	0.0017
Propylene -----	nd					
Iso-butane -----	0.0011					
N-butane -----	0.0011					
Iso-pentane -----	nd					
N-pentane -----	nd					
Hexanes + -----	0.0059					
Water -----			-17.7	-3.95		
Dissolved Inorganic Carbon -		-14.0				
Vacuum Distilled? -----	No					

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.81

\*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 895500 Job #: 56510 IS-102884 Co. Job#:

Sample Name: Brine Well #21 Co. Lab#:

Company: Environmental Resources Management (ERM)

API/Well:

Container: Isoflask & Plastic Bottle

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 10/30/2023 12:00 Date Received: 10/31/2023 Date Reported: 11/10/2023

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{18}\text{O}$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide -----	nd					
Helium -----	na					
Hydrogen -----	nd					
Argon -----	1.53					
Oxygen -----	6.80					
Nitrogen -----	77.42					
Carbon Dioxide -----	8.33					
Methane -----	5.77	-36.62	-132.8		1.9	1.3
Ethane -----	0.0966				0.035	0.044
Ethylene -----	0.0015					
Propane -----	0.0208				0.0070	0.013
Propylene -----	nd					
Iso-butane -----	0.0077					
N-butane -----	0.0073					
Iso-pentane -----	0.0039					
N-pentane -----	0.0023					
Hexanes + -----	0.0081					
Water -----			-17.5	-4.03		
Dissolved Inorganic Carbon -		-14.1				
Vacuum Distilled? -----	No					

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.74

\*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 895501 Job #: 56510 IS-102884 Co. Job#:

Sample Name: Brine Well #22 Co. Lab#:

Company: Environmental Resources Management (ERM)

API/Well:

Container: Isoflask & Plastic Bottle

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 10/30/2023 12:10 Date Received: 10/31/2023 Date Reported: 11/10/2023

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{18}\text{O}$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide -----	nd					
Helium -----	na					
Hydrogen -----	nd					
Argon -----	1.35					
Oxygen -----	2.09					
Nitrogen -----	61.67					
Carbon Dioxide -----	10.68					
Methane -----	23.80	-38.18	-148.0		6.8	4.5
Ethane -----	0.332				0.10	0.13
Ethylene -----	0.0010					
Propane -----	0.0468				0.014	0.025
Propylene -----	nd					
Iso-butane -----	0.0107					
N-butane -----	0.0083					
Iso-pentane -----	0.0024					
N-pentane -----	0.0015					
Hexanes + -----	0.0073					
Water -----			-16.9	-4.00		
Dissolved Inorganic Carbon -		-13.9				
Vacuum Distilled? -----	No					

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.80

\*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

**SEND DATA TO:**

Name: Scott Himes

Company: ERM

Address: 840 W Sam Houston Pkwy N #600,  
Houston, TX 77024

Phone: 281-660-1000

Email: scott.himes@erm.com

Project: Sulphur Dome

PO #: 0701093

Location: Sulphur, LA

Sampled By: Taylor Brown

**SEND INVOICE TO (if different from SEND DATA TO):**

Name:

Company:

Address:

Phone:

Email:

Standard

Priority

Rush

Analysis Requested

## Sample Description

Container Number	Sample Identification	Date Sampled	Time	DIC	δ13C	δD	δ18O	Comments
1	Starks Tie-In	Oct-30-23	11:00 am	X	X	X	X	DIC, δ13C, δD, and δ18O
1	Brine Well #18	Oct-30-23	11:30 am	X	X	X	X	DIC, δ13C, δD, and δ18O
1	Brine Well #21	Oct-30-23	12:00 pm	X	X	X	X	DIC, δ13C, δD, and δ18O
1	Brine Well #22	Oct-30-23	12:10 pm	X	X	X	X	DIC, δ13C, δD, and δ18O

## Chain-of-Custody Record

Signature	Company	Date	Time
Relinquished by <i>Taylor Brown</i>	ERM	Oct-30-23	5:00 pm
Received by <i>Les Schluter / SR Isotech</i>		<i>10-31-23</i>	<i>9:30</i>
Relinquished by			
Received by			
Relinquished by			
Received by			

**SEND DATA TO:**

Name: Scott Himes

Company: ERM

Address: 840 W Sam Houston Pkwy N #600,  
Houston, TX 77024

Phone: 281-660-1000

Email: scott.himes@erm.com

Project: Sulphur Dome

PO #: 0701093

Location: Sulphur, LA

Sampled By: Taylor Brown

**SEND INVOICE TO (if different from SEND DATA TO):**

Name:

Company:

Address:

Phone:

Email:

Standard

Priority

Rush

Analysis Requested

## Sample Description

Container Number	Sample Identification	Date Sampled	Time	DG-1					Comments
1	Starks Tie - In	Oct-30-23	11:00 am	X					
1	Brine Well #18	Oct-30-23	11:30 am	X					
1	Brine Well #21	Oct-30-23	12:00 pm	X					
1	Brine Well #22	Oct-30-23	12:10 pm	X					

## Chain-of-Custody Record

Signature	Company	Date	Time
Relinquished by <i>Taylor Brown</i>	ERM	Oct-30-23	5:00 pm
Received by <b>Les Schluter / SR Isotech</b>		10-31-23	9:30
Relinquished by			
Received by			
Relinquished by			
Received by			

Lab #: 899996 Job #: 56834 IS-102884 Co. Job#:

Sample Name: 019-580 Co. Lab#:

Company: Environmental Resources Management (ERM)

API/Well:

Container: IsoFlask

Field/Site Name: Sulphur Dome-0704754

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 11/28/2023 11:00 Date Received: 11/29/2023 Date Reported: 12/20/2023

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{18}\text{O}$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide -----	nd					
Helium -----	na					
Hydrogen -----	nd					
Argon -----	1.48					
Oxygen -----	7.14					
Nitrogen -----	84.09					
Carbon Dioxide -----	7.24					
Methane -----	0.0336				0.012	0.0078
Ethane -----	nd				< 0.0001	< 0.0002
Ethylene -----	nd					
Propane -----	nd				< 0.0001	< 0.0003
Propylene -----	nd					
Iso-butane -----	nd					
N-butane -----	nd					
Iso-pentane -----	nd					
N-pentane -----	nd					
Hexanes + -----	0.0127					

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.74

\*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen. Insufficient methane concentration for isotopic analysis.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 899997 Job #: 56834 IS-102884 Co. Job#:

Sample Name: 019-1055 Co. Lab#:

Company: Environmental Resources Management (ERM)

API/Well:

Container: IsoFlask

Field/Site Name: Sulphur Dome-0704754

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 11/28/2023 11:50 Date Received: 11/29/2023 Date Reported: 12/20/2023

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{18}\text{O}$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide -----	nd					
Helium -----	na					
Hydrogen -----	nd					
Argon -----	1.50					
Oxygen -----	8.45					
Nitrogen -----	82.32					
Carbon Dioxide -----	7.64					
Methane -----	0.0854				0.030	0.020
Ethane -----	nd				< 0.0002	< 0.0002
Ethylene -----	nd					
Propane -----	nd				< 0.0002	< 0.0003
Propylene -----	nd					
Iso-butane -----	nd					
N-butane -----	nd					
Iso-pentane -----	nd					
N-pentane -----	nd					
Hexanes + -----	0.0040					

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.78

\*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen. Insufficient methane concentration for isotopic analysis.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 899998 Job #: 56834 IS-102884 Co. Job#:

Sample Name: 019-582 Co. Lab#:

Company: Environmental Resources Management (ERM)

API/Well:

Container: IsoFlask

Field/Site Name: Sulphur Dome-0704754

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 11/28/2023 12:40 Date Received: 11/29/2023 Date Reported: 12/20/2023

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{18}\text{O}$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide -----	nd					
Helium -----	na					
Hydrogen -----	nd					
Argon -----	1.48					
Oxygen -----	8.07					
Nitrogen -----	83.08					
Carbon Dioxide -----	7.32					
Methane -----	0.0474				0.017	0.011
Ethane -----	nd				< 0.0002	< 0.0002
Ethylene -----	nd					
Propane -----	nd				< 0.0002	< 0.0003
Propylene -----	nd					
Iso-butane -----	nd					
N-butane -----	nd					
Iso-pentane -----	nd					
N-pentane -----	nd					
Hexanes + -----	0.0021					

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.76

\*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen. Insufficient methane concentration for isotopic analysis.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 899999 Job #: 56834 IS-102884 Co. Job#:

Sample Name: 019-995 Co. Lab#:

Company: Environmental Resources Management (ERM)

API/Well:

Container: IsoFlask

Field/Site Name: Sulphur Dome-0704754

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 11/28/2023 13:15 Date Received: 11/29/2023 Date Reported: 12/20/2023

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{18}\text{O}$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide -----	nd					
Helium -----	na					
Hydrogen -----	nd					
Argon -----	1.62					
Oxygen -----	6.19					
Nitrogen -----	82.94					
Carbon Dioxide -----	9.23					
Methane -----	0.0129				0.0037	0.0025
Ethane -----	nd				< 0.0002	< 0.0002
Ethylene -----	nd					
Propane -----	nd				< 0.0002	< 0.0003
Propylene -----	nd					
Iso-butane -----	nd					
N-butane -----	nd					
Iso-pentane -----	nd					
N-pentane -----	nd					
Hexanes + -----	0.0047					

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.81

\*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen. Insufficient methane concentration for isotopic analysis.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 900000 Job #: 56834 IS-102884 Co. Job#:  
 Sample Name: Cottages Co. Lab#:  
 Company: Environmental Resources Management (ERM)  
 API/Well:  
 Container: IsoFlask  
 Field/Site Name: Sulphur Dome-0704754  
 Location: Sulphur, LA  
 Formation/Depth:  
 Sampling Point:  
 Date Sampled: 11/28/2023 14:15 Date Received: 11/29/2023 Date Reported: 12/20/2023

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{18}\text{O}$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide -----	nd					
Helium -----	na					
Hydrogen -----	nd					
Argon -----	1.68					
Oxygen -----	4.95					
Nitrogen -----	79.57					
Carbon Dioxide -----	12.07					
Methane -----	1.73	-79.1	-159		0.44	0.29
Ethane -----	nd				< 0.0002	< 0.0002
Ethylene -----	nd					
Propane -----	nd				< 0.0002	< 0.0003
Propylene -----	nd					
Iso-butane -----	nd					
N-butane -----	nd					
Iso-pentane -----	nd					
N-pentane -----	nd					
Hexanes + -----	0.0039					

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.85

\*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

Methane isotope data obtained online via GC-IRMS.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

**SEND DATA TO:**

Name: Scott Himes  
 Company: ERM  
 Address: 840 W Sam Houston Pkwy N #600  
 City/State: Houston, TX 77024  
 Phone: 281-660-1000  
 Email: scott.himes@erm.com

**SEND INVOICE TO: (if different from SEND DATA TO:)**

Name: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City/State: \_\_\_\_\_  
 Phone: \_\_\_\_\_  
 Email: \_\_\_\_\_

Project: <u>Sulphur Dome - 0704754</u>	Purchase Order #: _____
Location: <u>Sulphur, LA</u>	Sampled By: <u>Taylor Brown</u>

Select One:  Standard  Priority  Rush

Sample Description				Analyses Requested		Comments
Container Number	Sample Identification	Date Sampled	Time			
1	019-580	11/28/23	11:00	X		
1	019-1055	↓	11:50	↓		
1	019-582	↓	12:40	↓		
1	019-995	↓	13:15	↓		
1	Cottages	↓	14:15	↓		

**Chain-of-Custody Record**

Signature	Company	Date	Time
Relinquished by <u>Taylor Brown</u>	<u>ERM</u>	<u>11/28/23</u>	<u>17:00</u>
Received by <u>Les Schluter / SR Isotech</u>		<u>11-29-23</u>	<u>13:30</u>
Relinquished by			
Received by			
Relinquished by			
Received by			

© 2021 Stratum Reservoir. All rights reserved. Stratum products and services are subject to the Company's standard terms and conditions, available on request or at isotechlabs.com. For more information contact an authorized Stratum representative. Unless noted otherwise, trademarks and service marks herein are the property of Stratum and may be registered in the United States and/or other countries. Stratum products named herein may be protected by one or more U.S. and/or foreign patents. For more information, contact info@isotechlabs.com. Specifications are subject to change without notice. Stratum sells its products and services in accordance with the terms and conditions set forth in the applicable contract between Stratum and the client.

Lab #: 887147 Job #: 55768 IS-102884 Co. Job#:

Sample Name: 019-995 Co. Lab#:

Company: Environmental Resources Management (ERM)

API/Well:

Container: IsoFlask

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 8/22/2023 8:30 Date Received: 8/25/2023 Date Reported: 10/23/2023

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{18}\text{O}$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide -----	nd					
Helium -----	na					
Hydrogen -----	nd					
Argon -----	1.55				0.40	0.66
Oxygen -----	11.52				2.9	3.9
Nitrogen -----	76.96				18	20
Carbon Dioxide -----	9.95	-20.47				
Methane -----	0.0162				0.0042	0.0028
Ethane -----	nd				< 0.0002	< 0.0002
Ethylene -----	nd					
Propane -----	nd				< 0.0002	< 0.0003
Propylene -----	nd					
Iso-butane -----	nd					
N-butane -----	nd					
Iso-pentane -----	nd					
N-pentane -----	nd					
Hexanes + -----	0.0031					

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.84

\*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen. d15N = 0.4‰

Insufficient methane concentration for isotopic analysis.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 887148 Job #: 55768 IS-102884 Co. Job#:

Sample Name: 019-582 Co. Lab#:

Company: Environmental Resources Management (ERM)

API/Well:

Container: IsoFlask

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 8/22/2023 9:30 Date Received: 8/25/2023 Date Reported: 10/23/2023

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{18}\text{O}$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide -----	nd					
Helium -----	na					
Hydrogen -----	nd					
Argon -----	1.58				0.37	0.62
Oxygen -----	10.74				2.5	3.3
Nitrogen -----	74.73				16	18
Carbon Dioxide -----	12.76	-20.51				
Methane -----	0.189				0.045	0.030
Ethane -----	nd				< 0.0002	< 0.0003
Ethylene -----	nd					
Propane -----	nd				< 0.0002	< 0.0004
Propylene -----	nd					
Iso-butane -----	nd					
N-butane -----	nd					
Iso-pentane -----	nd					
N-pentane -----	nd					
Hexanes + -----	0.0040					

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.88

\*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen. d15N = 0.3‰

Insufficient methane concentration for isotopic analysis.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 887149 Job #: 55768 IS-102884 Co. Job#:

Sample Name: Cottages Co. Lab#:

Company: Environmental Resources Management (ERM)

API/Well:

Container: IsoFlask

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 8/22/2023 10:30 Date Received: 8/25/2023 Date Reported: 10/23/2023

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{18}\text{O}$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide -----	nd					
Helium -----	na					
Hydrogen -----	nd					
Argon -----	1.34				0.46	0.76
Oxygen -----	13.82				4.6	6.2
Nitrogen -----	75.96				23	27
Carbon Dioxide -----	7.56	-22.25				
Methane -----	1.32	-80.4	-164		0.45	0.30
Ethane -----	nd				< 0.0002	< 0.0002
Ethylene -----	nd					
Propane -----	nd				< 0.0002	< 0.0003
Propylene -----	nd					
Iso-butane -----	nd					
N-butane -----	nd					
Iso-pentane -----	nd					
N-pentane -----	nd					
Hexanes + -----	0.0030					

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.80

\*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen. d15N = 0.3‰

Methane isotopes obtained online via GC-C-IRMS/GC-P-IRMS.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 887150 Job #: 55768 IS-102884 Co. Job#:

Sample Name: 019-580 Co. Lab#:

Company: Environmental Resources Management (ERM)

API/Well:

Container: IsoFlask

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 8/22/2023 11:00 Date Received: 8/25/2023 Date Reported: 10/23/2023

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{18}\text{O}$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide -----	nd					
Helium -----	na					
Hydrogen -----	nd					
Argon -----	1.75				0.34	0.57
Oxygen -----	8.22				1.6	2.1
Nitrogen -----	75.69				13	15
Carbon Dioxide -----	13.80	-19.21				
Methane -----	0.532	-56.6			0.11	0.070
Ethane -----	nd				< 0.0002	< 0.0002
Ethylene -----	nd					
Propane -----	nd				< 0.0002	< 0.0003
Propylene -----	nd					
Iso-butane -----	nd					
N-butane -----	nd					
Iso-pentane -----	nd					
N-pentane -----	nd					
Hexanes + -----	0.0031					

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.87

\*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen. d15N = -0.2‰

Insufficient methane concentration for dD isotopic analysis.

Methane carbon isotope data obtained online via GC-C-IRMS.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 887151 Job #: 55768 IS-102884 Co. Job#:

Sample Name: 019-1055 Co. Lab#:

Company: Environmental Resources Management (ERM)

API/Well:

Container: IsoFlask

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 8/22/2023 11:30 Date Received: 8/25/2023 Date Reported: 10/23/2023

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{18}\text{O}$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide -----	nd					
Helium -----	na					
Hydrogen -----	nd					
Argon -----	1.55				0.42	0.71
Oxygen -----	8.81				2.3	3.1
Nitrogen -----	79.23				19	22
Carbon Dioxide -----	10.04	-20.10				
Methane -----	0.369	-53.8			0.10	0.068
Ethane -----	0.0016				0.00048	0.00061
Ethylene -----	nd					
Propane -----	nd				< 0.0002	< 0.0003
Propylene -----	nd					
Iso-butane -----	nd					
N-butane -----	nd					
Iso-pentane -----	nd					
N-pentane -----	nd					
Hexanes + -----	0.0027					

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.81

\*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen. d15N = 0.2‰

Insufficient methane concentration for dD isotopic analysis.

Methane carbon isotope data obtained online via GC-C-IRMS.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

**SEND DATA TO:**

Name: Scott Himes

Company: ERM

Address: 840 W Sam Houston Pkwy N #600,  
Houston, TX 77024

Phone: 281-660-1000

Email: scott.himes@erm.com

Project: Sulphur Dome

PO #: 0701093

Location: Sulphur, LA

Sampled By: Taylar Brown

**SEND INVOICE TO (if different from SEND DATA TO):**

Name:

Company:

Address:

Phone:

Email:

Standard

Priority

Rush

Analysis Requested



## Sample Description

Container Number	Sample Identification	Date Sampled	Time	DG-1					Comments
1	019-995	Aug-22-23	8:30 am	X					
1	019-582	Aug-22-23	9:30 am	X					
1	Cottages	Aug-22-23	10:30 am	X					
1	019-580	Aug-22-23	11:00 am	X					
1	019-1055	Aug-22-23	11:30 am	X					

## Chain-of-Custody Record

Signature	Company	Date	Time
Relinquished by <i>Taylor Brown</i>	ERM	Aug-23-23	2:00 pm
Received by <b>Les Schluter / SR Isotech</b>		8-25-23	9:30
Relinquished by			
Received by			
Relinquished by			
Received by			