

Appendix A
Field Sampling Logs
(electronic only)

10/10/16 Paul Philimonoff Joe Joyner¹

Clear H-67° L-41°

0645 arrived at visitor center
for passes

0700 Left for Burning ground
- Safety responding to event
unavailable for permit signing

0850- Permits signed by safety

0851- Begin water level data
collection

<u>Well ID</u>	<u>WL (ft)</u>	<u>PID</u>
48 MW07	47.63	0.1
48 MW06	65.56	0.0
49 MW03	104.76	0.0
48 MW1	107.52	0.0
49 MW01	115.37	0.0
49 MW02	94.30	0.0
48 MW3	97.02	0.0
48 MW2	124.15	0.0
50 MW02	115.30	0.0

<u>Well ID</u>	<u>W.L. (VD)</u>	<u>PID</u>
54 MW1	18 19.00	0.0
54 MW12	25.64	0.0
54 MW13	22.10	0.0
54 MW10	15.52	0.0

1200 Attempted to sample at 54 MW10, but pump ~~bars~~ barbs on both pumps are wrong size for hoses.

Also connections on YSI flow cell are wrong size ~~both~~, one size too large other set too small to even connect to flow cell

Geotech called
2 New pumps & new flow cell
connections will be over
night UPSed ETA 10am
Tuesday 10/11/16

<u>Well ID</u>	<u>W.L.(∇)</u>	<u>SPID</u>
13 MW3	15.00	0.1
13 MW4	16.11	0.1
13 MW5	16.30	0.0
49 MW04	20.59	0.0
13 MW2	21.33	0.0
49 MW05	20.27	0.0

8/11/20

4

10/11/16

Paul Philimonoff Joe Joyner

Clear H: 69 L: 41

1000 Parts from GeoTech
arrive at hotel1030 visitor badging issue
had to re-register badge
until Friday1100 arrived at well 54MW
for sampling

1236 Pumping started

OTW = 19.00

Pump Depth = 36'

Time	Temp	Cond.	pH	DO	ORP	Turb
1241	15.90°	488	7.23	4.80	146	0.50
1246	14.63	476	7.19	3.30	143.9	0.18
1251	14.60	475	7.18	3.03	142.5	0.17
1256	14.54	475	7.18	2.75	140.8	0.19
1301	14.47	474	7.20	2.54	141.3	0.14
1306	14.48	474	7.28	2.60	138.2	0.14

Sample Timing 1311 ~ 2.5 gal
Purged

255 = T-E

290 = Manes

Final depth
2.37

Fe = 0.05 mg/L

Mn = 0.049 mg/L

1426 arrive at 54 MW 12

OTW = 25.64

Pump depth = 28

Pump start time = 1441

Time	Temp	Cond.	PH	DO	ORP	Turb
1449	16.84	574	6.46	9.10	-34.0	19.4
1455	16.22	573	6.37	5.62	-34.7	21.1
1500	16.03	575	6.39	5.48	-35.0	16.1
1505	15.59	577	6.40	5.34	4.9	9.01
1510	15.42	578	6.40	5.28	14.7	6.57
1515	15.63	577	6.25	5.01	30.0	4.63
1520	15.55	579	6.34	5.05	30.5	3.58
1525	15.55	579	6.37	5.24	30.4	3.02

Sampling @ 1530

MS/MSO collected

Final water level = 25.62

Fe = 0.00 mg/L

Mn = 0.038 mg/L

~2.5 gal purged

M. H. H.

10-12-16 Paul Philemanoff Jac Jayner

812 called security to open gate 19E

812 shift change @ Security did not pass on our gate request, start to set up for sampling @ 54 MW13

827 54 MW13

UTW = 22.1

pump depth = ~~24.8~~ 24.6

finger water level = 22.66

Time	Temp	cond	pH	DO	ORP	Turb
0845	12.90	748	7.17	3.73	85.6	216
0850	13.02	741	7.03	3.31	59.1	181
0855	13.01	722	6.99	3.08	48.5	98.8
0900	12.97	708	6.98	3.02	44.5	53.8
0905	12.96	695	6.97	3.16	41.7	32.8
0910	13.02	685	6.96	3.40	40.8	18.8
0915	13.08	678	6.95	3.39	41.8	12.7
0920	13.10	673	6.92	3.40	44.8	9.98

field out collected @ 955

sampling starting @ 0925

Fe = 0.08 mg/L

Mn = 0.061 mg/L

1040 arrived @ 54 MW P

OTW = 15.52

Pump depth = 22

1049 Pump start - 1055 discharge in bucket

final depth = 16.76

Time	Temp	Cond	pH	DO	ORP	Turb
1035	15.05	828	5.19	1.20	122.6	4.74
1100	14.62	843	5.69	0.63	89.2	4.69
1105	14.37	845	5.84	0.50	77.2	4.04
1110	14.43	843	5.88	0.53	72.0	3.22
1115	14.63	839	5.91	0.54	69.1	3.22

sampling start @ 1116

Fe = 0.52

Mn = 0.003

8

phil arrived on site 1200

B MW3

OTW = 15.62

End/final water level = 15.60

Start time 1250

Time	Temp	Cond	pH	DO	ORP	Turb
1255	12.48	500	7.34	5.3	75	7.92
1300	16.98	576	7.39	2.49	28.3	5.79
1305	16.93	581	7.14	2.00	11.0	2.94
1310	16.82	582	7.26	2.39	5.1	2.55
1315	16.79	582	8.04	2.32	4.6	1.87
1320	16.84	584	7.99	2.29	9.4	1.52

Sampling 1320

No Fe reading

Fe = 0.00

13 MW 4

set up 1340

OTW = 17.03

Final W.L. = 17.04

Pump start 1350

Time	Temp	Cond	PH	DO	ORP	Turb
1352	16.96	574	9.00	1.25	83.6	1.19
1357	15.67	615	9.11	0.29	76.4	0.76
1402	15.80	612	9.44	0.44	69.3	0.82
1407	15.86	513	9.26	2.38	70.3	1.01
1412	16.07	475	9.42	3.07	73.7	1.33
1417	16.01	474	9.36	3.56	74.0	1.31
1422	16.0	472	9.32	3.36	74.6	1.43

sample time 1425

Fe = 0.01

MS/MSD
collected

13 MW2

	OTW	21.64				
	Temp	Cond	pH	DO	ORP	T
1455	16.5	754	8.6	5.8	105.5	1.73
1500	15.4	754	9.32	4.6	109.6	1.12
1505	14.96	746	9.42	4.31	103.1	1.05
1510	15.06	743	9.37	4.4	101.1	1.07
1515	15.04	742	9.3	4.6	98.5	1.79

Sample @ 1515

Fe = 0.04 mg/L

Final ORP 24.1

49 MW04

OTW = 20.49

	Temp	Cond	pH	DO	ORP	Turb
1555	16.7	341	7.5	12.5	133.9	4.93
1600	16.5	652	7.7	2.74	136.4	4.82
1605	15.9	649	8.5	2.65	131.4	8.65
1610	15.5	647	8.5	1.45	167.2	8.78
1615	15.3	646	8.6	1.67	165.3	

Sampling @ 1620

Fe = 0.00 mg/L

final depth @ 26.95

Pulse 1530

Rinse 1530

12

10/13/16

Paul Philomatos Joe Joyner

cloud to partly sunny
foggy morning

H = 72° 2-46°

Twells + field dup + Rinse blank
+ pulse water samples left to
complete, ~~samples left to~~

0741 start set up @ 50MW02

50MW02

OTW = 115.3

final depth = 115.30

pump @ 118

start pump @ 0755

water flow @ 0804

Time	Temp	Cond	pH	DO	ORP	Turb
0810	12.72	697	9.22	3.99	180.0	33.8
0815	12.75	708	9.23	3.51	156.2	30.7
0820	12.80	710	9.25	3.49	149.4	25.6
0825	12.79	711	9.25	3.49	146.6	20.4
0830	12.80	711	9.25	3.57	144.9	15.9

sampling @ 0835

Fe = 0.06 mg/L

49 MW02

OTW = 94.30

Sample depth = 108

final depth = 98.62

Pumping starting @ 0930

water in pump @ 0938

Time	Temp	Cond	pH	DO	ORP	Turb
0940	12.96	540	9.30	8.47	163.3	35.7
0945	12.96	550	9.26	2.01	150.9	25.6
0950	12.95	550	9.25	1.75	143.8	19.1
0955	12.99	550	9.18	2.03	139.4	12.2
1000	13.02	550	9.17	2.21	138.1	10.6

Sampling @ 1005

Fe = 0.27 mg/L

48 MW3

1100 start set up

DTW=104.76

Sample depth = ~~100~~ 107

Final depth = 98.06

Pump start time = 1125

water in Bucket = 1143

Time	Temp	Cond	pH	DO	ORP	Turb.
1145	14.16	730	10.20	8.42	194.3	2.05
1150	13.83	739	10.15	4.25	186.0	1.15
1155	13.69	740	10.16	3.87	182.3	1.30
1200	13.62	740	10.14	3.75	179.6	1.46

Sampling starting @ 1205

Fe = 0.00 mg/L

field dup taken @ 1210

49 TMOI

48 MW2

O₁W = 124.15

Sample Depth = 130

final Depth = 124.66

well produces

better @

pump setting

40/30

pump start: 1305

water in Bucket: 1325

Time	Temp	Cond	pH	DO	ORP	Turb
1325	15.92	501	9.20	7.40	191.2	43.9
1330	14.97	504	9.48	6.72	191.4	51.1
1335	14.57	505	9.67	6.22	192.4	48.9
1340	14.38	504	9.74	6.12	192.7	42.0

Sampling @ 1345

Fe = 0.21 mg/L

49 MW ②

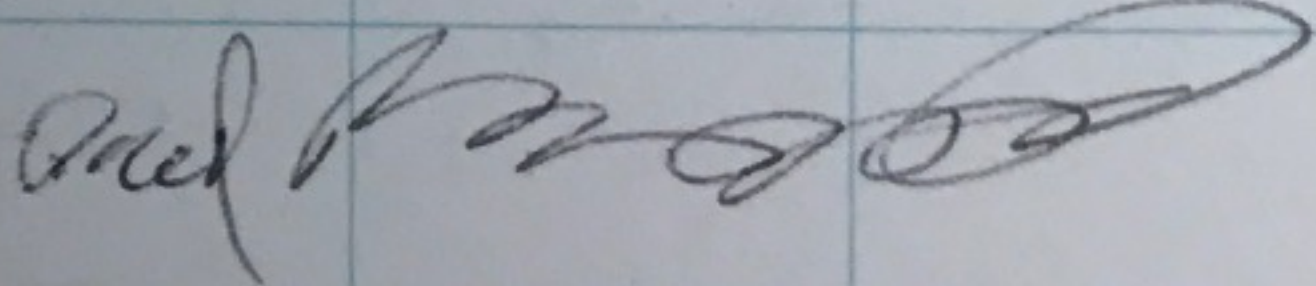
OTW = ~~150.3~~ 115.30
 Sample Depth = 120 ← suggest ~ 119'
 Final Depth = 115.62
 Pump depth
 Next Sampling

Pump Start: ~~1505~~ 1440Water in bucket: ~~1505~~ 1505

Time	Temp	Cond	PH	DO	ORP	Turb
1505	16.65	483	9.65	6.69	190.2	205
1510	16.41	482	10.06	5.48	189.1	234
1515	16.12	482	10.17	5.13	187.9	236
1520	16.03	481	10.23	5.33	187.9	206
1525	15.76	481	10.30	5.67	188.2	180
1530	15.62	480	10.33	5.58	188.8	168
1535	15.44	480	10.37	5.85	189.6	145
1540	15.40	480	10.38	5.88	190.4	125
1545	15.23	479	10.39	5.98	191.3	97.2

Sampling @ 1550

Fe = 0.92 mg/L



10-14-16 Paul Philemon Joe Joyner

0640 Enter RAAP

2 wells left to sample

Plus Rinse and purge water

0735 setting up @ 48 MW06

OTW = 65.55

Pump depth = 73

final depth = 67.05

Pump start: 0800

Water in bucket: 0806

Time	Temp	Cond	pH	DO	ORP	Turb
0810	13.01	485	11.78	3.01	212.2	28.7
0815	13.10	494	11.76	2.06	195.2	28.4
0820	13.18	516	11.73	2.07	182.5	31.8
0825	13.18	539	11.72	2.04	175.1	37.9
0830	13.18	559	11.74	2.10	171.1	55.1

Sampling @ 0835

Fe = 0.9 mg/L

~~48 MW~~ 48 MW1

~~Pump~~ Pump set to
35/40

OTW = 107.25

Sample ~~depump~~ depth = ~~110~~ 110.72

final depth = 108.27

Pump start: ~~09~~ 0940

water in Bucket: 0959

Time	Temp	Cond	pH	DO	ORP	Turb
1000	13.21	422	13.63	5.36	192.4	2.06
1005	13.19	426	13.62	4.71	190.0	1.18
1010	13.20	427	13.47	4.36	187.8	2.10
1015	13.21	427	13.42	4.30	186.3	2.02

Sample @ 1020

Fe = 0.00 mg/L

Rinsate + Purge
water samples
collected

Rinsate: 101416(R) - 1100

Purge: 49 ADW01 - 1105

Tri Blank: 101418(T) - 1110



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 1 of 1

ID 13MW2	Date 1/13/17	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials PIP/SJL	Time 1553	☐ Peristaltic:		KECK 200'					
Casing Diameter (in) 4"	Casing Stickup (ft)	☒ Bladder: DEDICATED PUMP		Water-level Meter:					
Initial Water Level (ft btoc) 21.93	Total Well Depth (ft-btoc) 29	☐ Other:		Oil-water Interface Meter:					
Final Water Level (ft-btoc) 24.16	Screened Interval (ft-btoc) 19-29			YSI PRO RUSS					
Purge Volume (liters) ~0.75 GAL	Sample Depth (ft-btoc)			Parameter Meter(s): T Cond pH DO ORP NTU					
				FE: HACH DR900					
				HACH 2100Q					
				Turbidity Meter:					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°C/°F)	Cond. (µS/cm)	pH	DO (%/mg/L)	ORP (mV)	Turb. (NTU)
1600		150 mL		14.3	711	6.94	5.01	71.4	1.03
1605				14.3	712	6.99	4.46	61.8	0.75
1610				14.3	762	7.03	4.48	65.9	0.78
1615				14.3	761	7.04	4.34	71.6	1.41
☒ Full Sample Suite Obtained		Condition of Well, Remarks: CONTROVER: 10/20 FIRST DISCHARGE 1559 JOC TO METHANE / ETHANE / ETHENE SULFATE / NITRATE / CHLORIDE							
☐ Partial Sample Suite Obtained									
☐ No Sample Obtained									
QC Samples: FD FS RB AB MS/MSD									
See COC for analyses requested.									
Sample ID: 13MW2		QC Sample ID:		Sampler's Signature: SJL					
Protective Level Dermal: ☒ C ☐ B ☐ A		Sample Time: 1620		Checked by:					
Respiratory: ☒ C ☐ B ☐ A		☐ Metals Sample Filtered		Filter		Date:			

 $\text{FE} = 0.02 \text{ mg/L}$



Page ____ of ____

1310 ISSUE WITH WATER FROM FLOW CELL GOING BACK INTO WELL;
STOPPED PUMP TO TROUBLE SHOOT

1318 RESTARTED PUMP; SAME ISSUE - DISCOVERED LEAK IN
ADAPTER FOR AIR LINE ~~WAS NOT TIGHTENED AND RESTARTED~~
& WILL NEED TO PURCHASE TOOLS FOR REPAIR



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 1 of 1

ID 13MW3	Date 1/13/17	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials SJC/PTP	Time 1509 1440	☐ Peristaltic		KECK 200'					
Casing Diameter (in) 4"	Casing Stickup (ft)	DEDICATED PUMP		Water-level Meter:					
Initial Water Level (ft-btoc) 15.71	Total Well Depth (ft-btoc) 19	☒ Bladder:		Oil-water Interface Meter:					
Final Water Level (ft-btoc) 15.73	Screened Interval (ft-btoc) 9-19	☐ Other		YSI PRO PLUS					
Purge Volume (liters) ~164L	Sample Depth (ft-btoc)			Parameter Meter(s): T Cond pH DO ORP NTU					
				FE: HALH DR200					
				HALH 2100P					
				Turbidity Meter:					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°C/°F)	Cond. (µS/cm)	pH	DO (mg/L)	ORP (mV)	Turb. (NTU)
1450		100 ML		13.9	320.1	6.80		104.1	19.9
1515				14.7	603.6	6.83	3.85	102.5	24.9
1520				14.3	602.1	6.84	3.72	103.3	19.9
1525				14.2	599.7	6.86	3.28	103.7	9.21
1530				14.1	599.4	6.88	3.36	103.0	5.15
1535				14.1	599.6	6.89	3.45	103.1	3.45
☒ Full Sample Suite Obtained				Condition of Well, Remarks: SETTINGS: 15/3025 FIRST DISCHARGE: @ 1512; V. TURBID (Brown) VA TDC METHANE/ETHANE/ETHENE SULFATE/NITRATE/CHLORIDE					
☐ Partial Sample Suite Obtained									
☐ No Sample Obtained									
QC Samples: FD FS RB AB MS/MSD									
See LDC for analyses requested									
Sample ID: 13MW3				QC Sample ID: _____		Sampler's Signature: SJC			
Protective Level: 0 C B A				Sample Time: 1540		Checked by: _____			
Respiratory: 0 C B A				☐ Metals Sample Filtered		Filter: _____		Date: _____	

FE = 0.05 mg/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 1 of 1

ID 13MW4	Date 1/13/17	Purge/Sample Equipment		Water-quality Equipment	
Samplers' Initials SJL/PTP	Time 1345	☐ Peristaltic: GEOTECH		LECK 200' Water-level Meter:	
Casing Diameter (in) 4"	Casing Stickup (ft)	☒ Bladder:		Oil-water Interface Meter:	
Initial Water Level (ft-btoc) 17.44	Total Well Depth (ft-btoc) 24	☐ Other:		YSI PRO RUS Parameter Meter(s): T Cond pH DO ORP NTU	
Final Water Level (ft-btoc) 17.85	Screened Interval (ft-btoc) 14-24			FE: HACH DR 900	
Purge Volume (liters) ~2 GAL	Sample Depth (ft-btoc) DEP. RUMP			HACH 200Q Turbidity Meter:	

Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°F)	Cond. (µS/cm)	pH	DO (% sat)	ORP (mV)	Turb. (NTU)
1350		135 mL		13.5	692	7.04	1.70	69.9	3.60
1355				15.0	664	7.06	1.28	70.6	1.31
1400				14.9	483	7.09	0.84	72.0	0.97
1405				15.0	660	7.10	0.74	73.1	1.42
1410				14.9	609.8	6.98	1.80	76.5	1.58
1415				14.9	566.2	6.79	3.44	82.1	1.69
1420				15.3	550.2	6.75	3.69	83.9	1.77
1425				14.9	539.2	6.68	3.75	88.5	1.56

☒ Full Sample Suite Obtained	Condition of Well, Remarks: CONTROLLER SETTING: 15/30 FIRST DISCHARGE @ 1346 VOC METHANE / ETHANE / ETHENE TOL SULFATE / NITRATE / CHLORIDE	
☐ Partial Sample Suite Obtained		
☐ No Sample Obtained		
QC Samples: FD FS RB AB MS/MSD		
See COC for analyses requested.		
Sample ID: 13MW4	QC Sample ID:	Sampler's Signature:
Protective Level Dermal: ☒ C B A	Sample Time: 1430	Checked by:
Respiratory: ☒ C B A	☐ Metals Sample Filtered	Filter
		Date:

FE = 0.07 mg/L



Page 1 of 1

$$FE = 0.04 \text{ mg/L}$$



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 1 of 1

ID 48MW1	Date 1/11/17	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials SL/PTP	Time 1145	☐ Peristaltic:		KECK 200' Water-level Meter:					
Casing Diameter (in) 4"	Casing Stickup (ft)	GEOTECH 1.00 X 18		Oil-water Interface Meter:					
Initial Water Level (ft btoc) 109.35	Total Well Depth (ft-btoc) 140	☐ Other:		YSI PRO PLUS Parameter Meter(s): T Cond pH DO ORP NTU					
Final Water Level (ft-btoc) 110.44	Screened Interval (ft-btoc) 110-140			FE: HACH DR200 DR200					
Purge Volume (liters) ~1 GAL	Sample Depth (ft-btoc) 115			HACH 2100R Turbidity Meter:					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°C/°F)	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)
1155		125ML		10.6	519.4	7.92	4.86	114.2	11.8
1200				11.6	523.8	7.73	3.14	91.7	5.00
1205				11.8	523.9	7.72	2.85	87.4	5.77
1210				11.7	524.6	7.71	2.85	84.8	3.82
1215				11.6	521.9	7.72	2.85	82.7	3.60
1220				11.8	521.5	7.72	2.82	81.7	2.91
☒ Full Sample Suite Obtained		Condition of Well, Remarks: CONTROLLER SETTING: 30/30 FIRST DISCHARGE @ 1154; CLEAR VOL METHANE / ETHANE / ETHENE SULFATE / NITRATE / CHLORIDE							
☐ Partial Sample Suite Obtained									
☐ No Sample Obtained									
QC Samples: FD FS RB AB MS/MSD		TOL		Sampler's Signature:					
See CQC for analyses requested		QC Sample ID: NONE		Checked by:					
Sample ID: 48MW1		Sample Time: 1225		Date:					
Protective Level Dermal: ☐ C ☐ B ☐ A		☐ Metals Sample Filtered		Filter					
Respiratory: ☐ C ☐ B ☐ A									

FE = 0.00 MG/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book #

Page 1 of 1

ID 48MW2	Date 1/13/17	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials SJL/PTP	Time 0800	☐ Peristaltic:		KECK 200' Water-level Meter:					
Casing Diameter (in) 2"	Casing Stickup (ft)	GEOTECH 1.66 X 18 ☒ Bladder:		Oil-water Interface Meter:					
Initial Water Level (ft btoC) 124.86	Total Well Depth (ft btoC) 133.7	☐ Other:		YSI PRO PLUS Parameter Meter(s): T Cond pH DO ORP NTU					
Final Water Level (ft btoC) 125.47	Screened Interval (ft btoC) 113-134			FE: HACH DR900					
Purge Volume (liters) ~1 GAL	Sample Depth (ft btoC) 130			HACH 2100 Q Turbidity Meter:					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°C/°F)	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)
0815		125 ML		10.1	561.8	7.42	8.66	137.6	28.4
0820				10.2	555.0	7.26	7.49	118.3	21.8
0825				10.0	555.7	7.32	7.92	110.7	17.8
0830				10.1	554.9	7.33	6.80	109.0	13.4
0835				9.7	557.3	7.38	7.35	104.8	12.8
0840				10.1	554.6	7.34	7.36	106.1	10.6
0845				10.0	555.2	7.37	7.36	103.9	35.8
☒ Full Sample Suite Obtained				Condition of Well, Remarks: CONTROLLER SETTING: 40/30 FIRST DISCHARGE @ 0812; CLEAR VOL METHANE/ETHANE/ETHYLENE SULFATE/NITRATE/CHLORIDE TDL					
☐ Partial Sample Suite Obtained									
☐ No Sample Obtained									
QC Samples: FD FS RB AB MS/MSD				Sampler's Signature:					
Sample ID: 48MW2				QC Sample ID: 48MW2					
Protective Level: C B A				Sample Time: 0850					
Respiratory: C B A				Checked by: Date: ☐ Metals Sample Filtered Filter Date:					

FE = 0.40 mg/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book #

Page 1 of 1

ID 48MW3	Date 1/13/17	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials SJL/MP	Time 0935	☐ Peristaltic:		KECK 200' Water-level Meter:					
Casing Diameter (in) X 4"	Casing Stickup (ft)	GEOTECH 1.00 X 18 ☒ Bladder:		Oil-water Interface Meter:					
Initial Water Level (ft-btoc) 97.35	Total Well Depth (ft-btoc) 120	☐ Other:		YSI PROPLUS Parameter Meter(s): T Cond pH DO ORP NTU					
Final Water Level (ft-btoc) 98.51	Screened Interval (ft-btoc) 100-120			FE: HAACH DR900					
Purge Volume (liters) ~16mL	Sample Depth (ft-btoc) 107			HAACH 2100Q Turbidity Meter:					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°C/°F)	Cond. (µS/cm)	pH	DO % (mg/L)	ORP (mV)	Turb. (NTU)
0945		125mL		9.7	831	7.30	8.42	89.0	9.0
0950				9.8	814	7.06	5.16	76.4	3.89
0955				9.7	813	7.11	5.04	74.7	0.70
0000				9.7	812	7.14	4.80	75.6	0.42
1005				9.7	812	7.16	4.79	78.3	0.36
1010				9.8	810	7.17	4.70	81.0	0.42
☒ Full Sample Suite Obtained			Condition of Well, Remarks: CONTROLLER SETTING: 30/30 FIRST DISCHARGE @ 0934; CLEAR VOL SULFATE/NITRATE/CHLORIDE METHANE/ETHANE/ETHENE TOL						
☐ Partial Sample Suite Obtained									
☐ No Sample Obtained									
QC Samples: FD FS RB AB MS/MSD			QC Sample ID: None						
See COC for analyses requested			Sample ID: 48MW3						
Protective Level Dermal ☒ C B A			Sample Time: 1015						
Respiratory ☒ C B A			☐ Metals Sample Filtered Filter Date:						
			Sampler's Signature:						
			Checked by:						

FE = 0.14 mg/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 1 of 2

Well ID 48MW06	Date 1/11/17	Purge/Sample Equipment	Water-quality Equipment
Samplers' Initials SJL/PTP	Time 1000	() Peristaltic:	KECK 200' Water-level Meter:
Casing Diameter (in) 2"	Casing Stickup (ft)	GEOTECH 1.06 X 18 ☒ Bladder:	Oil-water Interface Meter:
Initial Water Level (ft btoe) 65.65	Total Well Depth (ft btoe) 78	() Other:	YSI PROPLUS Parameter Meter(s): T Cond pH DO ORP NTU
Final Water Level (ft btoe) 67.28	Screened Interval (ft btoe) 58-78		FE: HACH DR900
Purge Volume (liters) 2 GAL	Sample Depth (ft btoe) 73		HACH 2100Q Turbidity Meter:

Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°C/°F)	Cond. (µS/cm)	pH	DO % (mg/L)	ORP (mV)	Turb. (NTU)
1005				12.1	496.4	7.54	2.45	99.0	41.5
1010				12.0	508.5	7.52	2.30	95.8	57.6
1015				12.2	535.6	7.44	2.16	94.1	48.6
1020				12.3	555.1	7.41	2.20	93.3	52.5
1025				12.3	568.5	7.40	2.32	93.3	64.3
1030				12.3	576.4	7.36	2.75	93.6	68.7
1035				12.4	612.7	7.37	2.76	91.9	74.5
1040				12.3	639.1	7.35	2.71	91.4	78.7
1045				12.4	662	7.33	2.31	91.3	71.0

☒ Full Sample Suite Obtained	Condition of Well, Remarks: CONTROLLER SETBACK: 15/30 FIRST DISCHARGE @ 1003; CLOUDY VOC METHANE / ETHANE / ETHENE TOC SULFATE / CHLORIDE / NITRATE
☐ Partial Sample Suite Obtained	
☐ No Sample Obtained	
QC Samples: FD FS RB AB MS/MSD	
See CEC for analyses requested	
Sample ID: 48MW06	QC Sample ID: None
Protective Level: C B A	Sample Time: 1110
Respiratory: C B A	☐ Metals Sample Filtered
	Filter
	Checked by: _____
	Date: _____
	Sampler's Signature: _____

FE = 0.29 MG/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 2 of 2

ID 48M006	Date 1/11/17	Purge/Sample Equipment		Water-quality Equipment					
Samplers Initials	Time								
Casing Diameter (in)	Casing Stickup (ft)	☐ Peristaltic		Water-level Meter:					
2"		☐ Bladder:		Oil-water interface Meter:					
Initial Water Level (ft-bloc)	Total Well Depth (ft-bloc)	☐ Other:		Parameter Meter(s): T Cond pH DO ORP NTU					
Final Water Level (ft-bloc)	Screened Interval (ft-bloc)								
Purge Volume (liters)	Sample Depth (ft-bloc)			Turbidity Meter:					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. °C/°F	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)
1050				12.4	681	7.32	2.34	90.7	59.5
1055				12.4	696	7.31	2.39	90.8	53.7
1100				12.3	714	7.31	2.59	90.7	52.6
1105				12.3	722	7.30	2.51	90.1	48.1
☐ Full Sample Suite Obtained			Condition of Well, Remarks:						
☐ Partial Sample Suite Obtained									
☐ No Sample Obtained									
QC Samples: FD FS RB AB MS/MSD									
Note: (X) for analyses requested			Sampler's Signature:						
Sample ID:			QC Sample ID:						
Protective Level (Normal) D C B A			Sample Time:						
Respiratory D C B A			Metals Sample Filtered Filter Date:						



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 1 of 1

ID: 48MW07		Date: 1/11/17		Purge/Sample Equipment		Water-quality Equipment			
Samplers' Initials: CJL/PTD		Time: 0835		☐ Peristaltic: ☒ Bladder: GEOTECH 1.66x18 ☐ Other:		KFCK 200' Water-level Meter: Oil-water Interface Meter:			
Casing Diameter (in): 2"		Casing Stickup (ft):							
Initial Water Level (ft-btoc): 48.59		Total Well Depth (ft-btoc): 82				YSI PRO PLUS			
Final Water Level (ft-btoc): 48.61		Screened Interval (ft-btoc): 62-82				Parameter Meter(s): T Cond pH DO ORP NTU			
Purge Volume (liters): 1.75 ~ 2 GAL		Sample Depth (ft-btoc): 65.00				FE: HACH DR900			
						HACH 2100Q			
						Turbidity Meter:			

Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°C/°F)	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)
0840		150 mL		12.1	203.6	7.45	8.40	102.0	2.30
0845				12.1	205.2	7.60	8.33	91.9	1.17
0850				12.1	207.7	7.73	8.38	82.3	1.40
0855				12.0	208.4	7.78	8.33	79.0	1.35
0900				11.9	208.2	7.81	8.29	77.7	1.64
0905				12.2	208.2	7.83	8.31	76.3	1.57
0910				12.1	208.4	7.84	8.27	76.1	1.30

☒ Full Sample Suite Obtained ☐ Partial Sample Suite Obtained ☐ No Sample Obtained		Condition of Well, Remarks: CONTROLLER SETTING: 15/30 FIRST DISCHARGE @ 0837; CLEAR VOC METHANE/ETHANE/ETHENE NITRATE/SULFATE/CHLORIDE TOC	
QC Samples: ☒ FS ☐ RB ☐ AB ☐ MS/MSD See C.O.C. for analyses requested		Sample's Signature: <i>CJL</i>	
Sample ID: 49MW07		QC Sample ID: 49TMI	
Protective Level: Dermal ☒ C ☐ B ☐ A		Sample Time: 0915	
Respiratory ☒ C ☐ B ☐ A		Checked by: _____ Date: _____	

FE = 0.00 MG/L

FIELD DUP 49TMI @ 0920



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 1 of 2

ID 49MW01	Date 1/12/11	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials SJL/PTP	Time 1045	☐ Peristaltic:		Water-level Meter: KECK 200'					
Casing Diameter (in) 2"	Casing Stickup (ft)	GEOTECH 1.60 X 18		Oil-water Interface Meter:					
Initial Water Level (ft-btoc) 115.44	Total Well Depth (ft-btoc) 121	☐ Bladder:		YSI PRO PLUS					
Final Water Level (ft-btoc) 115.88	Screened Interval (ft-btoc) 90-121	☐ Other:		Parameter Meter(s): T Cond pH DO ORP NTU					
Purge Volume (liters) ~26AL	Sample Depth (ft-btoc) 120			FE: HACH DR900					
				HACH 2100 Q					
				Turbidity Meter:					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°F)	Cond. (µS/cm)	pH	DO % (mg/L)	ORP (mV)	Turb. (NTU)
1055		125 mL		12.3	505.5	7.79	8.43	51.9	112
1100				12.5	503.2	7.60	6.24	42.1	86.2
1105				12.5	502.4	7.59	6.33	44.6	76.1
1110				12.5	502.0	7.59	6.00	47.9	69.4
1115				12.6	501.8	7.59	5.72	51.4	68.5
1120				12.6	502.4	7.59	5.88	54.5	56.1
1125				12.5	502.4	7.59	5.89	59.2	54.3
1130				12.5	502.0	7.58	5.86	61.8	49.6
1135				12.5	502.5	7.58	5.76	63.6	43.7
☒ Full Sample Suite Obtained		Condition of Well, Remarks:							
☐ Partial Sample Suite Obtained		CONTROLLER SETTING: 30/30							
☐ No Sample Obtained		FIRST DISCHARGE @ 1054: CLOUDY							
		VOL SULFATE/NITRATE/CHLORIDE							
		METHANE/ETHANE/ETHENE							
		TOL							
QC Samples FD FS RB AB MS/MSD		Sample's Signature:							
See CCL for analyses requested		QC Sample ID: NONE							
Sample ID: 49MW01		Sample Time: 1145							
Protective Level (dermat): C B A		Checked by:							
Respiratory: C B A		Filter: ☐ Metals Sample Filtered: ☐ Date:							

FE = 0.33 ng/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 2 of 2

ID 49 MW01	Date 1/12/17	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials	Time								
		☐ Peristaltic:		Water-level Meter:					
Casing Diameter (in) 2"	Casing Stickup (ft)			Oil-water Interface Meter:					
Initial Water Level (ft-btoc)	Total Well Depth (ft-btoc)	☐ Bladder:		Parameter Meter(s): T Cond pH DO ORP NTU					
		☐ Other:							
Final Water Level (ft-btoc)	Screened Interval (ft-btoc)								
Purge Volume (liters)	Sample Depth (ft-btoc)			Turbidity Meter:					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. °C/°F	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)
1140				12.6	502.6	7.58	5.79	46.4	38
☐ Full Sample Suite Obtained			Condition of Well, Remarks:						
☐ Partial Sample Suite Obtained									
☐ No Sample Obtained									
QC Samples: FD FS RB AB MS/MSD									
See COC for analyses requested							Sampler's Signature:		
Sample ID:			QC Sample ID:				Checked by:		
Protective Level: Dermal: D C B A			Sample Time:				Date:		
Respiratory: D C B A			☐ Metals Sample Filtered Filter						



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 1 of 1

ID 49MWD2	Date 1/13/17	Purge/Sample Equipment		Water-quality Equipment	
Samplers' Initials SJL/PTP	Time 1045	☐ Peristaltic:		KECK 200' Water-level Meter:	
Casing Diameter (in) 2"	Casing Stickup (ft)	GEOTECH 1.00 x 1.8		Oil-water Interface Meter:	
Initial Water Level (ft btoc) 94.44	Total Well Depth (ft-btoc) 133	☐ Other:		YSI PRO PLUS Parameter Meter(s): T Cond pH DO ORP NTU	
Final Water Level (ft-btoc) 99.54	Screened Interval (ft-btoc) 103-133			FE: HACH DR 900	
Purge Volume (liters) ~1 GAL	Sample Depth (ft-btoc) 108			HACH 2100 Q Turbidity Meter:	

Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°C/°F)	Cond. (µS/cm)	pH	DO % (mg/L)	ORP (mV)	Turb. (NTU)
1055		135 mL		9.7	629.8	7.83	6.71	73.5	13.7
1100				10.0	618.8	7.13	2.66	55.4	38.2
1105				9.7	619.0	7.22	1.80	53.0	30.8
1110				10.0	614.0	7.28	1.59	54.2	16.4
1115				9.9	613.3	7.80	1.50	56.9	10.4
1120				9.5	619.1	7.32	1.39	59.8	8.62
1125				9.6	619.2	7.32	1.36	62.8	5.18
1130				9.6	619.2	7.32	1.37	66.4	4.31

☒ Full Sample Suite Obtained	Condition of Well, Remarks: CONTROLLER SETTING: 30/30 FIRST DISCHARGE C 1084; CLEAR VOL METHANE/ETHANE/ETHENE SULFATE/NITRATE/CHLORIDE TOL	
☐ Partial Sample Suite Obtained		
☐ No Sample Obtained		
QC Samples: FD FS RB AB MS/MSD		
See COC for analyses requested		
Sample ID: 49MWD2	QC Sample ID: NONE	Sampler's Signature:
Protective Level Dermal: ☒ C B A	Sample Time: 1135	Checked by:
Respiratory: ☒ C B A	☐ Metals Sample Filtered	Filter
		Date:

FE = 0.18 mg/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 1 of 2

ID 49MW03		Date 1/12/17		Purge/Sample Equipment		Water-quality Equipment			
Samplers' Initials SJL/PTP		Time 0810		☐ Peristaltic		KECK 200'			
Casing Diameter (in) 2"		Casing Stickup (ft)		GEOTECH 1.00 X 18		Water-level Meter:			
☒ Bladder						Oil-water Interface Meter:			
Initial Water Level (ft-bloc) 105.28		Total Well Depth (ft-bloc) 117		☐ Other:		YSI PRO RWS			
Final Water Level (ft-bloc) 105.31		Screened Interval (ft-bloc) 77-117				Parameter Meter(s): T Cond pH DO ORP NTU			
Purge Volume (liters) 2		Sample Depth (ft-bloc) 109'				FE: HACH DR900			
~ 0.006M						HACH Z100Q Turbidity Meter:			
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. °C/°F	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)
0820		125 mL		10.6	317.4	7.99	9.73	105.6	195
0825				11.3	315.4	7.62	8.83	81.3	83.0
0830				11.4	317.7	7.57	7.60	78.0	136
0835				11.6	318.2	7.58	7.65	77.5	103
0840				11.5	319.0	7.58	7.63	78.1	99.2
0845				11.5	318.8	7.59	7.62	78.4	92.2
0850				11.6	318.7	7.58	7.62	78.8	78.0
0855				11.6	317.7	7.58	7.63	79.6	63.2
0900				11.6	318.1	7.53	7.63	80.2	56.2
☒ Full Sample Suite Obtained				Condition of Well, Remarks: CONTROLLER SETTINGS: 30/30 FIRST DISCHARGE @ 0819; CLOUDY VOL SULFATE/NITRATE/CHLORIDE METHANE/ETHANE/ETHENE TOL					
☐ Partial Sample Suite Obtained									
☐ No Sample Obtained									
QC Samples: FD FS RB AB MS/MSD				Sample's Signature:					
See CDC for analytes requested				Checked by:					
Sample ID: 49MW03				Sample Time: 0910					
Hydrolytic Level: (m) D C B A				Metals Sample Filtered: ☐ Filter: ☐ Date: _____					
Respiratory: D C B A									

FE = 0.42 MG/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 2 of 2

ID 49 MW03	Date 1/12/17	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials	Time	☐ Peristaltic:		Water-level Meter:					
Casing Diameter (in)	Casing Stickup (ft)	☐ Bladder:		Oil-water interface Meter:					
Initial Water Level (ft btoc)	Total Well Depth (ft-btoc)	☐ Other:		Parameter Meter(s): T Cond pH DO ORP NTU					
Final Water Level (ft-btoc)	Screened Interval (ft-btoc)								
Purge Volume (liters)	Sample Depth (ft-btoc)			Turbidity Meter:					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. °C/°F	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)
0905				11.6	378.4	7.58	7.70	81.1	57.4
☐ Full Sample Suite Obtained			Condition of Well, Remarks:						
☐ Partial Sample Suite Obtained									
☐ No Sample Obtained									
QC Samples: FD FS RB AB MS/MSD			Sampler's Signature:						
See COC for analyses requested									
Sample ID:			QC Sample ID:						
Protective Level Dermal: D C B A			Sample Time:						
Respiratory: D C B A			☐ Metals Sample Filtered Filter Date:						



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book #

Page

of

ID 49HW04	Date 1/11/17	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials SJL/PTP	Time 1405	☐ Peristaltic:		KECK 200'					
Casing Diameter (in) 2"	Casing Stickup (ft)	GEOTECH 1.66 X 13		Water-level Meter:					
Initial Water Level (ft-btoc) 21.14	Total Well Depth (ft-btoc) 72	☒ Bladder:		Oil-water Interface Meter:					
Final Water Level (ft-btoc) 25.73	Screened Interval (ft-btoc) 50-70	☐ Other:		YSI PROBUS					
Purge Volume (liters) 21.5 GAL	Sample Depth (ft-btoc) 53			Parameter Meter(s): T Cond pH DO ORP NTU					
				FE					
				HACH DR900					
				HACH 21009					
				Turbidity Meter:					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. °C/°F	Cond. (µS/cm)	pH	DO %/mg/l	ORP (mV)	Turb. (NTU)
1410		125 mL		12.4	652	7.67	7.88	59.8	4.5
1415				13.3	659	7.38	2.35	51.5	10.6
1420				13.3	659	7.36	1.88	59.0	6.88
1425				13.3	659	7.35	1.62	66.9	5.34
1430				13.3	659	7.34	1.56	71.6	4.93
1435				13.3	660	7.34	1.51	75.9	3.01
☒ Full Sample Suite Obtained			Condition of Well, Remarks: CONTROLLER SETTING: 10/50 FIRST DISCHARGE @ 1409; CLEAR						
☐ Partial Sample Suite Obtained									
☐ No Sample Obtained									
QC Samples: FD FS RB AB MS/MSD									
See COC for analyses requested			Sampler's Signature: SJL						
Sample ID: 49HW04			QC Sample ID: NONE						
Protective Level Dermal: ☒ C ☐ B ☐ A			Sample Time: 1440						
Respiratory: ☒ C ☐ B ☐ A			Checked by: SJL						
			Date: 1/11/17						

FE = 0.04 mg/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 1 of 1

ID 49 MW05	Date 1/11/17	Purge/Sample Equipment		Water-quality Equipment	
Samplers' Initials SL / PTP	Time 1510	☐ Peristaltic ☒ Bladder: GEOTECH 1.66 x 1.8 ☐ Other:		KECK 200' Water-level Meter:	
Casing Diameter (in) 2"	Casing Stickup (ft)			Oil-water interface Meter:	
Initial Water Level (ft. btoc) 20.32	Total Well Depth (ft. btoc) 36.8			VSI PRO PWS Parameter Meter(s): T Cond pH DO ORP NTU	
Final Water Level (ft. btoc) 21.41	Screened Interval (ft. btoc) 16-37			FE: HACH DR 900	
Purge Volume (liters) ~1.5 GAL	Sample Depth (ft. btoc) 25			HACH 200Q Turbidity Meter:	

Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°C/°F)	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)
1515		125ml		12.4	853	7.34	3.49	91.6	21.4
1520				13.8	863	7.17	2.63	60.8	43.6
1525				13.8	902	7.16	2.72	57.0	68.3
1530				13.8	909	7.16	2.66	57.9	66.6
1535				13.8	910	7.16	2.58	59.5	71.7
1540				13.7	907	7.15	2.70	61.7	59.9
1545				13.8	895	7.15	2.73	62.8	48.4
1550				13.8	878	7.16	2.52	63.8	35.4

☒ Full Sample Suite Obtained ☐ Partial Sample Suite Obtained ☐ No Sample Obtained	Condition of Well, Remarks: CANTOWER SETTING: 15/30 FIRST DISCHARGE @ 1548; CLEAR NO METHANE / ETHANE / ETHENE SULFATE / CHLORIDE / NITRATE
QC Samples: FD FS RB AB MS/MSD See CDC for analyses requested Sample ID: 49 MW05 Protective Level: Gamma D C B A Respiratory D C B A	TOL QC Sample ID: Sample Time: 1555 ☐ Metals Sample Filtered
	Sampler's Signature: Checked by: Date:

FE = 0.16 MG/L



LOW FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 1 of 2

Date 5/12/17		Purge/Sample Equipment		Water quality Equipment	
Pump Type JL/PTP		Peristaltic		KECK	
Pump Discharge (in) 1220		Bladder 1.00 x 18		Water level Meter	
Total Well Depth (ft below) 116.06		Other		Oil water Interface Meter	
Screened Interval (ft below) 89-119		Other		VA PRO WS	
Purge Volume (liters) ~264L		Sample Depth (ft below) 118		Parameter Meter(s) (Cond pH DO ORP NTU)	
				RE:	
				HACH DR90	
				HACH 2100Q	
				Turbidity Meter	

Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp (°C)	Cond (µS/cm)	pH	DO % (mg/L)	ORP (mV)	Turb. (NTU)
1250		110		5.2	973	6.85	7.88	80.1	21.1
1255				5.0	987	6.85	6.82	81.2	13.7
1300				5.2	984	6.88	6.76	82.5	—
1305				11.2	835	6.92	4.38	84.1	239
1315				11.3	830	6.89	4.40	86.5	265
1320				11.4	824	6.86	3.92	89.9	200
1325				11.3	826	6.88	3.94	89.5	199
1400				11.7	826	6.88	5.11	101.2	236
1405				12.2	824	6.82	3.75	101.8	—

☒ Full Sample Suite Obtained ☐ Partial Sample Suite Obtained ☐ No Sample Obtained ☐ Samples: DO, FS, RB, AB, MY, MSD Sample ID: 2-6-22 Sample Time: 1515 Checked by: [Signature] Filter: []		Condition of Well: Remarks CONTROLLER SETTING: 30/35 (ADJUSTED FROM 30/30) FIRST DISCHARGE @ 1246: CLEAR TO CLOUDY NO METHANE/ETHANE/ETHYLENE SULFATE/CHLORIDE/NITRATE
--	--	--

1305 NO DISCHARGE; SURGED PUMP

1330 NO DISCHARGE; PULLED PUMP AND REPLACED WITH SPARE PUMP; BACK ON AT 1345, FIRST DISCHARGE @ 1357

1405 NO DISCHARGE FOR TURBIDITY; PULLED PUMP AND REPLACED PUMP AND TUBING; RESTARTED AT 1450

E (~1 GALLON SURGED SO FAR)



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 2 of 2

ID SOMW2	Date	Purge/Sample Equipment		Water-quality Equipment	
Samplers' Initials	Time	☐ Peristaltic:		Water-level Meter:	
Casing Diameter (in)	Casing Stickup (ft)	☐ Bladder:		Oil-water Interface Meter:	
Initial Water Level (ft btoc)	Total Well Depth (ft-btoc)	☐ Other:		Parameter Meter(s): T Cond pH DO ORP NTU	
Final Water Level (ft-btoc)	Screened Interval (ft-btoc)				
Purge Volume (liters)	Sample Depth (ft-btoc)			Turbidity Meter:	

Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. °C/°F	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)
1415				11.3	821	6.92	4.25	96.0	130
1420				11.5	819	6.81	4.04	102.6	132
1500 1425				12.2	824	6.97	5.20	130.4	161
1505 1430				12.2	819	6.81	5.22	136.9	116
1510 1500				11.3	818	6.77	5.29	134.0	78.5

☐ Full Sample Suite Obtained	Condition of Well, Remarks: FE = 0.45 mg/L
☐ Partial Sample Suite Obtained	
☐ No Sample Obtained	
QC Samples: FD FS RB AB MS/MSD	
See COC for analyses requested	
Sample ID:	QC Sample ID:
Protective Level Dermal: D C B A	Sample Time:
Respiratory: D C B A	☐ Metals Sample Filtered Filter
Sampler's Signature:	
Checked by:	
Date:	



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 1 of 1

ID 13MW3	Date 4/11/17	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials SL/PTP	Time 1505	☐ Peristaltic:		KECK 200'					
Casing Diameter (in) 4"	Casing Stickup (ft)	DEDICATED PUMP		Water-level Meter:					
Initial Water Level (ft-btoc) 15.25	Total Well Depth (ft-btoc) 19	☒ Bladder:		Oil-water Interface Meter:					
Final Water Level (ft-btoc) 15.25	Screened Interval (ft-btoc) 9-19	☐ Other:		YSI PRO PWS					
Purge Volume (liters) ~1.5 GAL	Sample Depth (ft-btoc) N/A			Parameter Meter(s): T Cond pH DO ORP NTU					
				FE:					
				HACH DR900					
				HACH 2100Q					
				Turbidity Meter:					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. °C/°F	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)
1510		130ML		16.3	0.571	6.91	4.93	133.2	57.7
1515				16.3	0.575	6.93	4.05	120.4	11.3
1520				—	—	6.95	—	111.8	4.90
1535				18.2	0.574	6.95	4.14	114.3	42.6
1540				14.8	0.567	6.93	4.15	112.7	5.30
1545				14.5	0.567	6.93	4.02	111.9	2.73
1550				14.5	0.567	6.93	3.97	110.1	2.10
1555				14.4	0.567	6.94	3.94	109.2	1.14
☒ Full Sample Suite Obtained		Condition of Well, Remarks: SETTING: 15/25 FIRST DISCHARGE: 1507 FE = 0.03mg/L VOC METHANE/ETHANE/ETHYLENE TOX SULFATE/NITRATE/CHLORIDE							
☐ Partial Sample Suite Obtained									
☐ No Sample Obtained									
QC Samples: FD FS RB AB MS/MSD		Sample ID: 13MW3							
See COC for analyses requested		QC Sample ID: NONE							
Sample ID: 13MW3		Sample Time: 1555 1600							
Protective Level Dermal ☒ C B A		Checked by: [Signature]							
Respiratory: ☒ C B A		Date: _____							

1520: WATER NOT GOING BACK INTO WELL FROM FLOW CELL;
READINGS UNSTABLE



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 1 of 1

ID 13MW4	Date 4/11/17	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials SJL/PTP	Time 1415	☐ Peristaltic:		KECK 200' Water-level Meter:					
Casing Diameter (in) X 4"	Casing Stickup (ft)	DEDICATED PUMP		Oil-water Interface Meter:					
Initial Water Level (ft btoc) 16.62	Total Well Depth (ft-btoc) 24	☐ Bladder:		YSI PRO PLUS Parameter Meter(s): T Cond pH DO ORP NTU					
Final Water Level (ft-btoc) 16.62	Screened Interval (ft-btoc) 14-24	☐ Other:		FE: HACH DR900					
Purge Volume (liters) 2.2 GAL	Sample Depth (ft-btoc)			HACH 2100Q Turbidity Meter:					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. °C/°F	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)
1418		135 ML		14.1	0450	6.77	5.65	125.9	1.30
1423				14.2	044	6.84	5.31	113.8	0.63
1428				14.1	0440	6.86	5.32	109.6	0.68
1433				14.1	0445	6.84	5.36	105.70	0.52
☒ Full Sample Suite Obtained		Condition of Well, Remarks: CONTROLLER SETTING: 15/30 FIRST DISCHARGE @ 1416 VOL METHANE/ETHANE/ETHENE SULFATE/NITRATE/CHLORIDE TOL							
☐ Partial Sample Suite Obtained									
☐ No Sample Obtained									
QC Samples: FD FS RB AB MS/MSD		Sampler's Signature:							
See COC for analyses requested.		Sample ID: 13MW4 QC Sample ID: MMF							
Protective Level Dermal ☐ C B A		Sample Time: 1435 Checked by:							
Respiratory: ☒ C B A		☐ Metals Sample Filtered Filter Date:							

 $FE = 0.00 \text{ mg/L}$



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # 1
Page 1 of 1

ID <u>48LW1</u>	Date <u>4/12/17</u>	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials <u>SJL/PTD</u>	Time <u>0815</u>	☐ Peristaltic:		Water-level Meter: <u>Keck 200'</u>					
Casing Diameter (in) <u>4"</u>	Casing Stickup (ft)	☒ Bladder: <u>Geotech 1.66 x 18</u>		Oil-water Interface Meter:					
Initial Water Level (ft-btoc) <u>105.92</u>	Total Well Depth (ft-btoc) <u>140</u>	☐ Other:		YSI Pro Plus Parameter Meter(s): T Cond pH DO ORP NTU					
Final Water Level (ft-btoc) <u>107.23</u>	Screened Interval (ft-btoc) <u>110-140</u>			☒ Fe/Mn: <u>Hach DR900</u>					
Purge Volume (liters) <u>16.2L</u>	Sample Depth (ft-btoc) <u>115</u>			Turbidity Meter: <u>Hach 2100Q</u>					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°C/°F)	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)
<u>0825</u>		<u>125 mL</u>		<u>13.1</u>	<u>0.537</u>	<u>7.56</u>	<u>4.15</u>	<u>152.3</u>	<u>3.32</u>
<u>0830</u>				<u>12.9</u>	<u>0.486</u>	<u>7.56</u>	<u>3.18</u>	<u>135.3</u>	<u>1.78</u>
<u>0835</u>				<u>12.9</u>	<u>0.482</u>	<u>7.57</u>	<u>2.86</u>	<u>131.8</u>	<u>1.96</u>
<u>0840</u>				<u>12.89</u>	<u>0.479</u>	<u>7.61</u>	<u>2.80</u>	<u>124.6</u>	<u>1.51</u>
<u>0845</u>				<u>12.9</u>	<u>0.477</u>	<u>7.63</u>	<u>2.74</u>	<u>120.1</u>	<u>1.63</u>
<u>0850</u>				<u>12.8</u>	<u>0.475</u>	<u>7.65</u>	<u>2.72</u>	<u>116.7</u>	<u>1.47</u>
☒ Full Sample Suite Obtained			Condition of Well, Remarks: <u>SETTING : 30/30</u> <u>FIRST DISCHARGE @ 0824</u> <u>VOC</u> <u>TOL</u> <u>METHANE / ETHANE / ETHYLENE SULFATE / NITRATE / CHLORIDE</u>						
☐ Partial Sample Suite Obtained									
☐ No Sample Obtained									
QC Samples: FD FS RB AB MS/MSD			Sample ID: <u>48LW1</u>						
See COC for analyses requested.			QC Sample ID: <u>None</u>						
Protective Level Dermal ☒ C B A			Sample Time: <u>0855</u>						
Respiratory: ☒ C B A			☐ Metals Sample Filtered Filter Date:						

Fe = 0.06 mg/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book #

Page

of

ID 48Mw2	Date 4/13/17	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials SL/PTP	Time 10:31:13	☐ Peristaltic		Water-level Meter: Keck 200'					
Casing Diameter (in) 2"	Casing Stickup (ft)	☒ Bladder: Geotech 1.66 x 18		Oil-water Interface Meter:					
Initial Water Level (ft-btoc) 124.26	Total Well Depth (ft-btoc) 133.7	☐ Other:		YSI Pro Plus Parameter Meter(s): T Cond pH DO ORP NTU					
Final Water Level (ft-btoc) 124.91	Screened Interval (ft-btoc) 113-134			Fe/Mn: Hach DR900					
Purge Volume (liters) ~1 GAL	Sample Depth (ft-btoc) 130			Turbidity Meter: Hach 2100Q					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. °C/°F	Cond. (µS/cm)	pH	DO % (mg/L)	ORP (mV)	Turb. (NTU)
1120		125 ML		13.6	0.487	7.41	6.76	129.1	17.8
1125				13.5	0.488	7.40	6.71	117.5	18.1
1130				13.4	0.481	7.42	6.50	114.6	18.1
1135				13.3	0.482	7.43	6.53	114.8	17.8
1140				13.3	0.482	7.42	6.56	115.0	17.1
1145									
☒ Full Sample Suite Obtained		Condition of Well, Remarks: 40 SETTING: 30/30 FIRST DISCHARGE: 1117 VOC METHANE/ETHANE/ETHENE TOL SULFATE/CHLORIDE/ NITRATE							
☐ Partial Sample Suite Obtained									
☐ No Sample Obtained									
QC Samples FD FS RB AB MS/MSD		Sample ID: 48Mw2							
See COC for analyses requested		QC Sample ID: LWE							
Sample ID: 48Mw2		Sample Time: 1143							
Protective Level Dermal (D) C B A		Checked by:							
Respiratory (R) C B A		Date:							
		☐ Metals Sample Filtered							
		Filter							

FE = 0.15 NG/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 1 of 1

ID 46MW3	Date 4/13/17	Purge/Sample Equipment		Water-quality Equipment	
Samplers Initials SL/PTD	Time 0931	☐ Peristaltic		Water-level Meter Keck 200'	
Casing Diameter (in.) 4"	Casing Stickup (ft)	☒ Bladder Geotech 1.66 x 18		Oil-water interface Meter	
Initial Water Level (ft. bdoc) 97.57	Total Well Depth (ft. bdoc) 120	☐ Other		YSI Pro Plus Parameter Meter(s): T Cond pH DO ORP NTU	
Final Water Level (ft. bdoc) 98.91	Screened Interval (ft. bdoc) 100-120			Fe/Mn: Hach DR900	
Purge Volume (liters) 216L	Sample Depth (ft. bdoc) 107			Turbidity Meter Hach 2100Q	

Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°C/°F)	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)
0940		125mL		13.0	0.73	7.38	7.30	120.7	2.64
0945				12.6	0.71	7.17	5.10	86.1	1.27
0950				12.6	0.70	7.19	3.71	86.1	1.06
0955				12.4	0.70	7.20	3.61	99.0	0.99
1000				12.4	0.70	7.20	3.61	92.9	0.72
1005				12.4	0.70	7.20	3.58	95.0	0.75
1010				12.5	0.70	7.20	3.57	97.4	0.57

☒ Full Sample Suite Obtained	Condition of Well, Remarks: GETTING 30/30 FIRST DISCHARGE 0940 NO METHANE/ETHANE/ETHENE TDC
☐ Partial Sample Suite Obtained	
☐ No Sample Obtained	
QC Samples: FD FS RB AB <u>MS/MSD</u>	
Free DO for analysis requested	
Sample ID 46-MW3	QC Sample ID 46-MW3 C 1015
Protective Level Determined C B A	Sample Time 1015
Respirators C B A	Metals Sample Filtered ☐ Filter ☐ Date _____
Sampler's Signature:	
Checked by: _____	

FE = 0.03 MG/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 1 of 1

ID 49MW3	Date 4/13/17	Purge/Sample Equipment		Water-quality Equipment																																																																																																					
Samplers' Initials SL/PTP	Time 0931	☐ Peristaltic:		Water-level Meter: Keck 200'																																																																																																					
Casing Diameter (in) 4"	Casing Stickup (ft)	☒ Bladder: Geotech 1.66 x 18		Oil-water Interface Meter:																																																																																																					
Initial Water Level (ft-btoc) 97.57	Total Well Depth (ft-btoc) 120	☐ Other:		YSI Pro Plus Parameter Meter(s): T Cond pH DO ORP NTU																																																																																																					
Final Water Level (ft-btoc) 98.91	Screened Interval (ft-btoc) 100-120			Fe/Mn: Hach DR900																																																																																																					
Purge Volume (liters) ~1 GAL	Sample Depth (ft-btoc) 107			Turbidity Meter: Hach 2100Q																																																																																																					
<table border="1"><thead><tr><th>Time</th><th>Depth to Water (ft)</th><th>Pumping Rate (l/min)</th><th>Purge Volume (liters)</th><th>Temp. (°C/°F)</th><th>Cond. (µS/cm)</th><th>pH</th><th>DO %/mg/L</th><th>ORP (mV)</th><th>Turb. (NTU)</th></tr></thead><tbody><tr><td>0940</td><td></td><td>125mL</td><td></td><td>13.0</td><td>0.73</td><td>7.38</td><td>7.30</td><td>120.7</td><td>2.69</td></tr><tr><td>0945</td><td></td><td></td><td></td><td>12.6</td><td>0.71</td><td>7.17</td><td>5.10</td><td>86.1</td><td>1.27</td></tr><tr><td>0950</td><td></td><td></td><td></td><td>12.6</td><td>0.70</td><td>7.19</td><td>3.71</td><td>86.1</td><td>1.06</td></tr><tr><td>0955</td><td></td><td></td><td></td><td>12.4</td><td>0.70</td><td>7.20</td><td>3.61</td><td>89.0</td><td>0.99</td></tr><tr><td>1000</td><td></td><td></td><td></td><td>12.4</td><td>0.70</td><td>7.20</td><td>3.61</td><td>92.9</td><td>0.72</td></tr><tr><td>1005</td><td></td><td></td><td></td><td>12.4</td><td>0.70</td><td>7.20</td><td>3.58</td><td>95.0</td><td>0.75</td></tr><tr><td>1010</td><td></td><td></td><td></td><td>12.5</td><td>0.70</td><td>7.20</td><td>3.57</td><td>97.4</td><td>0.57</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table>						Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°C/°F)	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)	0940		125mL		13.0	0.73	7.38	7.30	120.7	2.69	0945				12.6	0.71	7.17	5.10	86.1	1.27	0950				12.6	0.70	7.19	3.71	86.1	1.06	0955				12.4	0.70	7.20	3.61	89.0	0.99	1000				12.4	0.70	7.20	3.61	92.9	0.72	1005				12.4	0.70	7.20	3.58	95.0	0.75	1010				12.5	0.70	7.20	3.57	97.4	0.57																				
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°C/°F)	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)																																																																																																
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0955				12.4	0.70	7.20	3.61	89.0	0.99																																																																																																
1000				12.4	0.70	7.20	3.61	92.9	0.72																																																																																																
1005				12.4	0.70	7.20	3.58	95.0	0.75																																																																																																
1010				12.5	0.70	7.20	3.57	97.4	0.57																																																																																																
☒ Full Sample Suite Obtained		Condition of Well, Remarks: SETTING: 30/30 FIRST DISCHARGE 0940 NO METHANE/ETHANE/ETHENE TDC																																																																																																							
☐ Partial Sample Suite Obtained																																																																																																									
☐ No Sample Obtained																																																																																																									
QC Samples: FD FS RB AB MS/MSD		See CQC for analytes requested				Sampler's Signature: _____																																																																																																			
Sample ID: 49MW3		QC Sample ID: 49MW3 @ 1015				Checked by: _____																																																																																																			
Protective Level Dermal ☐ C ☐ B ☐ A		Sample Time: 1015				Date: _____																																																																																																			
Respiratory ☒ C ☐ B ☐ A		☐ Metals Sample Filtered				Filter																																																																																																			

Fe = 0.03 MG/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 1 of 1

ID 48MWA	Date 4/11/17	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials SJL/PTP	Time 1145 1154	☐ Peristaltic:		KECK 200' Water-level Meter:					
Casing Diameter (in) 2"	Casing Stickup (ft)	GEOTECH 1.06X13 ☐ Bladder:		Oil-water Interface Meter:					
Initial Water Level (ft btoc) 65.32	Total Well Depth (ft-btoc) 78	☐ Other:		YSI PROBUS Parameter Meter(s): T Cond pH DO ORP NTU					
Final Water Level (ft-btoc) 66.98	Screened Interval (ft-btoc) 58-78			HACH FE: HACH DR900					
Purge Volume (liters) ~36L	Sample Depth (ft-btoc) 73			HACH 2100Q Turbidity Meter:					
1.5									
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (C/F)	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)
1156		130 ml		15.2	0.581	7.27	2.70	146.0	54.1
1201				14.5	0.572	7.23	2.20	135.4	108
1206				14.2	0.608	7.20	2.10	131.3	61.5
1211				14.1	0.64	7.18	2.13	128.5	42.1
1216				14.1	0.69	7.16	2.15	127.0	37.7
1221				14.2	0.72	7.15	2.14	126.1	38.4
1226				14.1	0.73	7.15	2.12	124.6	39.1
☒ Full Sample Suite Obtained		Condition of Well, Remarks: SETTING: 15/30 FIRST DISCHARGE: 1156 NO METHANE/ETHANE/ETHENE SULFATE/NITRATE/CHLORIDE TOL							
☐ Partial Sample Suite Obtained									
☐ No Sample Obtained									
QC Samples: ☒ FD ☐ FS ☐ RB ☐ AB ☐ MS/MSD		Sample ID: 48MWA + 48MWA QC Sample ID: 49TMI @ 1235							
See COC for analyses requested.		Sampler's Signature: _____							
Sample ID: 48MWA + 48MWA		Sample Time: 1230							
Protective Level Dermal: ☐ D ☐ C ☐ B ☐ A		Checked by: _____							
Respiratory: ☐ D ☐ C ☐ B ☐ A		☐ Metals Sample Filtered Filter Date: _____							

FE = 0.30 mg/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book #

Page 1 of 1

ID 49MW01	Date 4/12/17	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials SUL/PTP	Time 0927	() Peristaltic:		Water-level Meter: Keck 200'					
Casing Diameter (in) 2"	Casing Stickup (ft)	(X) Bladder: Geotech 1.66 x 18		Oil-water Interface Meter:					
Initial Water Level (ft btoc) 115.62	Total Well Depth (ft-btoc) 121	() Other:		YSI Pro Plus Parameter Meter(s): T Cond pH DO ORP NTU					
Final Water Level (ft-btoc) 110.01	Screened Interval (ft-btoc) 90-121			Fe/Mn: Hach DR900					
Purge Volume (liters) ~16.2L	Sample Depth (ft-btoc) 120			Turbidity Meter: Hach 2100Q					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°C/°F)	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)
0940		125 mL		13.2	0537	7.51	6.73	185.2	52.1
0945				13.0	0.445	7.51	5.28	148.0	42.9
0950				12.9	0.440	7.60	5.17	140.1	29.5
0955				12.9	0.441	7.62	5.14	135.0	24.3
1000				12.9	0.442	7.63	5.15	132.8	21.7
1005				13.0	0.441	7.63	5.16	131.3	18.2
☒ Full Sample Suite Obtained		Condition of Well, Remarks: SETTING: 30/30 FIRST DISCHARGE: 0933 VOL METHANE/ETHANE/ETHENE SULFATE/CHLORIDE/ NITRATE							
() Partial Sample Suite Obtained									
() No Sample Obtained									
QC Samples: FD FS RB AB MS/MSD		Sample ID: 49MW01							
See COC for analyses requested.		QC Sample ID: NONE							
Sample ID: 49MW01		Sample Time: 1010							
Protective Level Dermal: (D) C B A		Checked by:							
Respiratory: (D) C B A		Date:							

FE = 0.26 MG/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 1 of 1

ID: 411W02	Date: 4/13/17	Purge/Sample Equipment		Water-quality Equipment	
Samplers' Initials: S.W./PTP	Time: 0812	(☐) Peristaltic:		Water-level Meter: Keck 200'	
Casing Diameter (in): 2"	Casing Stickup (ft):	(☒) Bladder: Geotech 1.66 x 18		Oil-water Interface Meter:	
Initial Water Level (ft-btoc): 94.33	Total Well Depth (ft-btoc): 133	(☐) Other:		YSI Pro Plus Parameter Meter(s): T Cond pH DO ORP NTU	
Final Water Level (ft-btoc): 99.59	Screened Interval (ft-btoc): 103-133			Fe/Mn: Hach DR900	
Purge Volume (liters): 1642	Sample Depth (ft-btoc): 103			Turbidity Meter: Hach 2100Q	

Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. °C/°F	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)
0823		2.35 1.35 mL		12.0	0.538	7.45	3.4	152.1	26.5
0828				12.3	0.528	7.36	1.64	112.4	20.4
0833				12.4	0.526	7.36	1.31	109.5	12.4
0838				12.4	0.525	7.37	1.21	108.9	7.40
0843				12.4	0.526	7.37	1.42	108.3	4.98
0848				12.4	0.526	7.37	1.34	107.8	4.65
0853				12.7	0.526	7.37	1.37	107.4	3.84

☒ Full Sample Suite Obtained	Condition of Well, Remarks: CONTROLLER SETTING: 30/30 FIRST DISCHARGE: 0821 VOC METHANE / ETHANE / ETHYLENE POL SULFATE / NITRATE / CHLORIDE
☐ Partial Sample Suite Obtained	
☐ No Sample Obtained	
QC Samples: FD FS RB AB MS/MSD	
See COC for analyses requested	
Sample ID: 411W02	QC Sample ID:
Protective Level: Dermal (D) C B A	Sample Time: 0855
Respiratory: (D) C B A	(☐) Metals Sample Filtered
	Filter
	Date:
	Sampler's Signature:
	Checked by:

FE = 0.17 mg/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book #

Page 1 of 2

IC	Date	Purge/Sample Equipment	Water-quality Equipment						
APM-009	4/12/17								
Samplers Initials	Time	() Peristaltic	Water-level Meter Keck 200'						
STL/PTD	1340	(X) Bladder Geotech 1.66 x 18	Oil-water Interface Meter:						
Casing Diameter (in)	Casing Stickup (ft)	() Other	YSI Pro Plus						
Initial Water Level (ft bblc)	Total Well Depth (ft bblc)		Parameter Meter(s) T Cond pH DO ORP NTU						
20.73	72		(Fe/Mn: Hach DR900)						
Final Water Level (ft bblc)	Screened Interval (ft bblc)		Turbidity Meter Hach 2100Q						
26.83	50-70								
Purge Volume (liters)	Sample Depth (ft bblc)								
22 SGAL	53								
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp (°C/F)	Cond (µS/cm)	pH	DO % (mg/L)	ORP (mV)	Turb. (NTU)
1345		150ml		15.5	0.61	7.53	7.09	134.1	3.85
1350				15.0	0.610	7.28	4.05	134.5	5.75
1355				15.1	0.611	7.28	2.98	132.4	5.24
1400				15.0	0.61	7.28	2.25	133.7	3.93
1405				15.1	0.610	7.29	1.90	134.8	4.08
1410				15.1	0.610	7.28	1.80	135.3	4.75
1415				14.7	0.611	7.29	1.57	136.3	3.64
1420				14.8	0.610	7.29	1.29	136.1	2.66
1425				14.9	0.610	7.30	1.21	135.8	2.45
Full Sample Suite Obtained				Condition of Well, Remarks					
Partial Sample Suite Obtained				SETTING: 10/50					
No Sample Obtained				FIRST DISCHARGE: 1342					
QC Samples: FD FS AB AB MS/MSD				VOC					
See CDC for analytes requested				METHANE/ETHANE/ETHENE					
Sample ID: APM-009				TDC					
Protective Level: Dermal				QC Sample ID					
Respiratory				Sample Time: 1445					
				Sampler's Signature					
				Checked by					
				Filter					
				Date					

FE = 0.08 MG/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 2 of 2

ID <u>49HWO4</u>	Date <u>4/12/17</u>	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials	Time	☐ Peristaltic:		Water-level Meter: <u>Keck 200'</u>					
Casing Diameter (in) <u>2"</u>	Casing Stickup (ft)	☒ Bladder: <u>Geotech 1.66 x 18</u>		Oil-water Interface Meter:					
Initial Water Level (ft btoc)	Total Well Depth (ft-btoc)	☐ Other:		YSI Pro Plus Parameter Meter(s): <u>T Cond pH DO ORP NTU</u>					
Final Water Level (ft-btoc)	Screened Interval (ft-btoc)			<u>Fe/Mn:</u> <u>Hach DR900</u>					
Purge Volume (liters)	Sample Depth (ft-btoc)			Turbidity Meter: <u>Hach 2100Q</u>					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. °C/°F	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)
<u>1430</u>				<u>14.9</u>	<u>0.611</u>	<u>7.30</u>	<u>1.04</u>	<u>135.5</u>	<u>1.76</u>
<u>1435</u>				<u>15.0</u>	<u>0.610</u>	<u>7.30</u>	<u>1.01</u>	<u>135.4</u>	<u>1.96</u>
<u>1440</u>				<u>14.9</u>	<u>0.610</u>	<u>7.31</u>	<u>0.94</u>	<u>135.3</u>	<u>1.35</u>
☐ Full Sample Suite Obtained			Condition of Well, Remarks:						
☐ Partial Sample Suite Obtained									
☐ No Sample Obtained									
QC Samples: <u>FD FS RB AB MS/MSD</u>									
See COC for analyses requested.									
Sample ID:			QC Sample ID:			Sampler's Signature:			
Protective Level Dermal: <u>D C B A</u>			Sample Time: <u>1445</u>			Checked by:			
Respiratory: <u>D C B A</u>			☐ Metals Sample Filtered			Filter		Date:	



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

 Page 1 of 1

Case SW-12	Date 4/12/17	Purge/Sample Equipment	Water-quality Equipment
Sampler's Initials SUL/PTP	Time 1040	() Peristaltic	Water-level Meter Keck 200'
Casing Diameter (in) 2"	Casing Stickup (ft)	(X) Bladder Geotech 1.66 x 18	Oil-water Interface Meter:
Initial Water Level (ft-bloc) 115.36	Total Well Depth (ft-bloc) 119	() Other	YSI Pro Plus
Final Water Level (ft-bloc) 115.36	Screened Interval (ft-bloc) 99-119		Parameter Meter(s): T Cond pH DO ORP NTU
Purge Volume (liters) ~1 GAL	Sample Depth (ft-bloc) 118		Fe/Mn: Hach DR900
			Turbidity Meter Hach 2100Q

Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°C/°F)	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)
1105		95 mL		13.4	0.70	6.97	5.16	168.2	21.1
1110				13.1	0.68	6.96	4.00	160.2	18.4
1115				13.2	0.67	6.97	3.82	152.5	46.1
1120				13.1	0.68	6.98	3.24	148.1	104
1125				12.9	0.68	6.99	3.23	145.1	83.5
1130				12.9	0.68	6.99	3.29	143.2	61.9
1135				13.0	0.68	7.00	3.02	141.2	45.3
1140				13.0	0.68	7.01	3.09	139.6	34.1
1145				13.0	0.68	7.02	3.09	138.1	34.2

☒ Full Sample Suite Obtained	Condition of Well, Remarks: SETTING: 30/30 40 A0 FIRST DISCHARGE: 1105 VOL METHANE / ETHANE / ETHYLENE DO SULFATE / NITRATE / CHLORIDE	
☐ Partial Sample Suite Obtained		
☐ No Sample Obtained		
QC Samples: FD FS RB AB MS/MSO		
How DO, for analyses requested		
Sample ID SW-12	QC Sample ID PURE	Sampler's Signature: _____
Protective Level (term) A C B A	Sample Time 1150	Checked by: _____
Respirators A C B A	Metals Sample Filtered	Filter Date

1100: NO WATER IN FLOW CELL; SURGED PUMP AND TURNED BACK ON



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____
Page 1 of 1

ID 13MW2	Date 4/12/17	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials STL/PTP	Time 1503	☐ Peristaltic:		Water-level Meter: Keck 200'					
Casing Diameter (in) 4"	Casing Stickup (ft)	DED. RUMP ☒ Bladder: Geotech 1.66 x 18		Oil-water Interface Meter:					
Initial Water Level (ft-btoc) 21.29	Total Well Depth (ft-btoc) 29	☐ Other:		YSI Pro Plus Parameter Meter(s): T Cond pH DO ORP NTU					
Final Water Level (ft-btoc) 23.34	Screened Interval (ft-btoc) 19-29			☒ Fe/Mn: Hach DR900					
Purge Volume (liters) ~2.5 GAL	Sample Depth (ft-btoc) —			Turbidity Meter: Hach 2100Q					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°C/°F)	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)
1505		150 mL		14.4	0.68	7.07	7.42	115.9	0.86
1510				15.0	0.68	7.04	5.94	105.2	0.52
1515				15.0	0.68	7.05	5.94	109.6	0.54
1520				15.0	0.68	7.05	5.63	104.9	0.54
1525				15.1	0.68	7.05	5.65	104.7	1.00
1530				15.0	0.68	7.05	5.61	105.5	1.37
1535				15.0	0.68	7.06	5.63	105.1	1.55
1540				15.1	0.68	7.05	5.63	105.1	1.76
☒ Full Sample Suite Obtained		Condition of Well, Remarks: S SETTING: 10/20 FIRST DISCHARGE: 1504 VOL METHANE/ETHANE/ETHENE SULFATE/NITRATE/ TOL CHLORIDE							
☐ Partial Sample Suite Obtained									
☐ No Sample Obtained									
QC Samples: FD FS RB AB MS/MSD									
See COC for analyses requested.		Sample ID: 13MW2 QC Sample ID:							
Protective Level Dermal D C B A		Sample Time: 1545 Checked by:							
Respiratory: D C B A		☐ Metals Sample Filtered Filter Date:							

FE = 0.05 mg/L

Page 1 of 1
$$F_E = 0.15 \text{ ma/l}$$



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 1 of 1

ID 13MW3	Date 7/13/17	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials PTP/SJL	Time 1425	☐ Peristaltic:		Water-level Meter: Keck 200'					
Casing Diameter (in) 2"	Casing Stickup (ft)	☒ Bladder: Geotech 1.66 x 18		Oil-water Interface Meter:					
Initial Water Level (ft) 15.65	Total Well Depth (ft-btoc) 19	☐ Other:		YSI Pro Plus Parameter Meter(s): T Cond pH DO ORP NTU					
Final Water Level (ft-btoc) 15.65	Screened Interval (ft-btoc) 5.65-19			Fe/Mn: Hach DR900					
Purge Volume (liters) ~1.25 GAL	Sample Depth (ft-btoc) 16'			Turbidity Meter: Hach 2100Q					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°C/°F)	Cond. (µS/cm)	pH	DO (mg/L)	ORP (mV)	Turb. (NTU)
1430		100 mL		20.5	627	6.55	1.07	121.4	97.1
1435				19.2	622	6.46	0.79	124.23	23
1440				19.1	621	6.59	0.80	117.7	1.36
1445				19.0	619	6.76	0.83	111.2	0.89
1450				19.0	619	6.85	1.00	106.6	0.67
1455				19.1	618	6.94	1.00	102.7	0.55
1500				18.9	615	7.02	2.17	101.1	0.63
1505				18.8	615	7.01	4.52	101.9	0.76
1510				19.0	615	7.07	4.55	98.9	0.60
1515				18.9	615	7.10	4.53	98.3	0.52
☐ Full Sample Suite Obtained			Condition of Well, Remarks:						
☐ Partial Sample Suite Obtained			SETTING: 15/25						
☐ No Sample Obtained			VOC METHANE ETHANE / ETHENE SULFATE / NITRATE / CHLORIDE						
QC Samples: FD FS RB AB MS/MSD			TOL						
See COC for analyses requested			Sampler's Signature:						
Sample ID: 13MW3			QC Sample ID: 2 TOL						
Protective Level Dermal ☐ C B A			Sample Time: 1520						
Respiratory: ☒ C B A			☐ Metals Sample Filtered Filter Date:						

FE = 0.12 mg/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # 1
Page 1 of 1

ID 13MWA	Date 7/12/17	Purge/Sample Equipment		Water-quality Equipment	
Samplers' Initials SJL/PTP	Time 1434	☐ Peristaltic:		Water-level Meter: Keck 200'	
Casing Diameter (in) 2"	Casing Stickup (ft)	DEDICATED ☒ Bladder Geotech 1.66 x 18"		Oil-water Interface Meter:	
Initial Water Level (ft-btoc) 17.34	Total Well Depth (ft-btoc) 17.3 24	☐ Other:		YSI Pro Plus Parameter Meter(s): T Cond pH DO ORP NTU	
Final Water Level (ft-btoc) 17.57	Screened Interval (ft-btoc) 14-24			☒ Fe/Mn: Hach DR900	
Purge Volume (liters) ~2.5 GAL	Sample Depth (ft-btoc) NA			Turbidity Meter: Hach 2100Q	

Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°F)	Cond. (µS/cm)	pH	DO (mg/L)	ORP (mV)	Turb. (NTU)
1435		250 mL		14.4	519.3	6.64	2.72	90.0	2.49
1440				14.5	529.0	6.71	0.95	91.2	1.33
1445				14.7	529.3	6.82	0.94	92.4	0.95
1450				14.7	526.7	6.91	0.94	88.0	0.77
1455				14.8	491.4	7.06	2.04	84.9	1.01
1500				14.8	466.0	6.96	2.85	90.0	0.92
1505				14.7	458.8	6.92	2.92	91.1	1.24
1510				14.8	445.4	6.92	3.02	91.1	0.75

☒ Full Sample Suite Obtained	Condition of Well, Remarks: CONTROLLER SETTING: 10/30 FIRST DISCHARGE: 1435 NO METHANE/ETHANE/ETHYLE TOU SULFATE/CHLORINE/NITRATE
☐ Partial Sample Suite Obtained	
☐ No Sample Obtained	
QC Samples FD FS RB AB MS/MSD	
See COC for analyses requested	
Sample ID: 13MWA	QC Sample ID: NA
Protective Level: Dermal ☒ C B A	Sample Time: 1510
Respiratory: ☒ C B A	☐ Metals Sample Filtered
	Filter
	Date: 7/12/17

FE = 0.06 mg/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book #

Page 1 of 1

ID 48MW1	Date 7/12/17 7/11/17	Purge/Sample Equipment		Water-quality Equipment	
Samplers' Initials SJL/PTP	Time 0923 0942 1230	☐ Peristaltic:		Water level Meter: Keck 200'	
Casing Diameter (in) 4"	Casing Stickup (ft)	☒ Bladder: Geotech 1.66 x 18		Oil water Interface Meter:	
Initial Water Level (ft-btoc) 103.26	Total Well Depth (ft-btoc) 140	☐ Other:		YSI Pro Plus Parameter Meter(s): Cond pH DO ORP RTU	
Final Water Level (ft-btoc) 104.86	Screened Interval (ft-btoc) 110-140			Fe/Mn: Hach DR900	
Purge Volume (liters) ~1.5 GAL	Sample Depth (ft-btoc) 115			Turbidity Meter: Hach 2100Q	

Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. °C/°F	Cond. (µS/cm)	pH	DO % (mg/L)	ORP (mV)	Turb. (NTU)
0950		25 L		18.4	515.3	7.80	4.49	107.4	13.6
0955				14.7	505.0	7.45	3.86	125.7	11.6
1000				14.7	504.4	7.46	3.80	121.2	11.0
1005				14.4	500.0	7.41	3.38	114.2	11.0
1010				14.1	500.9	7.54	3.54	109.7	11.5
1015				14.3	497.3	7.62	3.66	101.5	10.6
1020				14.2	495.4	7.67	3.69	97.3	9.7
1025				14.2	497.2	7.72	3.70	94.1	9.11

☒ Full Sample Suite Obtained	Condition of Well, Remarks: SETTING: 30/30 FIRST DISCHARGE: 0950 JA METHANE/ETHANE/ETHENE TDL	Sample Signature:
☐ Partial Sample Suite Obtained		
☐ No Sample Obtained		
QC Samples: FD FS RB AB MS/MSD	QC Sample ID: None	Checked by:
See COC for analyses requested.	Sample Time: 1030	Date: 7/12/17
Sample ID: 48MW1	☐ Metals Sample Filtered	Filter
Protective Level Dermal: 4 C B A		
Respiratory: 0 C B A		

FE = 0.13 mg/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book #

Page 1 of 2

2

ID 48HW2	Date 7/13/17	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials PTP/STL	Time 1202	☐ Peristaltic:		Water-level Meter: Keck 200'					
Casing Diameter (in) 2"	Casing Stickup (ft)	☒ Bladder: Geotech 1.66 x 18		Oil-water Interface Meter:					
Initial Water Level (ft) 123.11	Total Well Depth (ft-btoc) 133.7	☐ Other:		YSI Pro Plus Parameter Meter(s): T Cond pH DO ORP NTU					
Final Water Level (ft-btoc) 123.77	Screened Interval (ft-btoc) 113-134			Fe/Mn: Hach DR900					
Purge Volume (liters) 2.5 GAL	Sample Depth (ft-btoc) 130			Turbidity Meter: Hach 2100Q					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°C/°F)	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)
1215		110 mL		15.2	551.3	6.94	6.90	112.0	17.0
1220				14.9	551.6	6.65	6.34	137.1	20.8
1225				14.5	557.7	6.77	6.30	138.0	28.4
1230				14.9	546.5	6.92	6.34	134.1	31.8
1235				14.5	552.6	7.33	6.49	113.4	23.8
1240				14.5	550.5	7.32	6.47	115.2	24.8
1245				14.3	547.6	7.28	6.45	118.7	18.2
1250				14.3	540.4	7.33	6.42	117.8	43.8
1255				14.2	541.9	7.38	6.45	116.7	39.1
☒ Full Sample Suite Obtained		Condition of Well, Remarks: CONTROLLER SETTING: 40/30 FIRST DISCHARGE @ 1214							
☐ Partial Sample Suite Obtained		VOL							
☐ No Sample Obtained		TOL							
QC Samples: FD FS RB AB MS/MSD		METHANE/ETHANE/ETHENE SULFATE/NITRATE/CHLORIDE							
See COC for analyses requested.		Sampler's Signature:							
Sample ID: 48HW2		QC Sample ID: NONE							
Protective Level Dermal D C B A		Sample Time: 1345							
Respiratory: B C B A		Filter: ☐ Metals Sample Filtered							
		Date: 7/13/17							

FE = 2.31 mg/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 2 of 2

ID 48HW2	Date 7/13/17	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials	Time	☐ Peristaltic		Water-level Meter: Keck 200'					
Casing Diameter (in) 2"	Casing Stickup (ft)	☒ Bladder Geotech 1.66 x 18		Oil-water Interface Meter:					
Initial Water Level (ft-btoc)	Total Well Depth (ft-btoc)	☐ Other:		YSI Pro Plus Parameter Meter(s): T Cond pH DO ORP NTU					
Final Water Level (ft-btoc)	Screened Interval (ft-btoc)			Fe/Mn: Hach DR900					
Purge Volume (liters)	Sample Depth (ft-btoc)			Turbidity Meter: Hach 2100Q					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. °C/°F	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)
1300				13.9	542.7	7.41	6.45	116.2	350
1305				13.9	536.3	7.43	6.43	115.9	283
1310				14.6	532.7	7.51	6.35	114.2	283
1315				14.7	538.7	7.70	6.40	102.6	263
1320				14.7	540.4	7.71	6.34	103.4	279
1325				14.8	532.7	7.53	6.37	113.7	231
1330				14.0	531.7	7.46	6.38	118.8	611
1335				14.0	531.3	7.50	6.38	117.0	795
1340				14.1	532.7	7.54	6.37	115.0	675
☐ Full Sample Suite Obtained			Condition of Well, Remarks:						
☐ Partial Sample Suite Obtained									
☐ No Sample Obtained									
QC Samples: FD FS RB AB MS/MSD									
See CD for analyses requested			Sampler's Signature:						
Sample ID			QC Sample ID:						
Protective Level: Dermal D C B A			Sample Time						
Respiratory: D C B A			☐ Metals Sample Filtered Filter Date						

HDR

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

 Page 1 of 1

Well ID: 48WJ3		Date: 7/13/17		Purge/Sample Equipment		Water quality Equipment	
Sampling Method: WUPP		Time: 1022		1) Peristaltic		Water Level Meter: Keck 200'	
Casing Diameter (in): 4"		Casing Sticking (ft):		2) Blower: Geotech 1.66 x 18		Oil-Water Interface Meter	
Initial Water Level (ft): 97.14		Initial Well Depth (ft): 120		3) Other:		YSI Pro Plus	
Final Water Level (ft): 98.97		Screened Interval (ft): 100-120				Parameter Measured: T Cond gm SC, SDD, pH	
Depth to Water (ft): 1.256m		Screen Depth (ft): 107				Fe/Mn: Hach DR900	
						Turbidity Meter: Hach 2100Q	

Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp °C/°F	Cond (µS/cm)	pH	Fe (mg/L)	SDD (µm)	Turb (NTU)
1025		10 ml		15.5	763	6.81	4.54	133.9	1.23
1030				14.4	761	6.79	3.25	135.7	0.72
1035				13.9	763	6.92	3.08	130.60	0.59
1040				14.0	761	7.01	3.10	126.5	0.48
1055				14.0	760	7.11	3.14	122.3	0.56
1100				13.9	763	7.20	3.13	118.4	0.39
1105				13.8	760	7.24	3.13	117.4	0.44
1110				13.8	760	7.27	3.12	115.7	0.40
									3

All Sample Tests Completed		Condition of Well: Good	
Partial Sample Tests Completed		CONTINUED SETTING: 35/35	
No Sample Tests Completed		FIRST DISCHARGE @ 1021	
All Sample Tests: FE, pH, OR, AR, (AS, HAN)		VOL	
Sample ID: 48WJ3		TOL	
Sample Type: 1115		METHANE/ETHANE/ETHENE SULFATE/NITRATE/CHLORIDE	
Sample Date: 7/13/17		Sample Location:	
Sample Depth:		Sample Volume:	

FE = 0.11 mg/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____
Page 1 of 1

ID 48MWD06	Date 7/12/17	Purge/Sample Equipment		Water-quality Equipment	
Samplers' Initials STL/MP	Time 0804	☐ Peristaltic:		Water-level Meter: Keck 200'	
Casing Diameter (in) 2"	Casing Stickup (ft)	☒ Bladder: Geotech 1.66 x 18		Oil-water Interface Meter:	
Initial Water Level (ft btoc) 63.91	Total Well Depth (ft-btoc) 73	☐ Other:		YSI Pro Plus Parameter Meter(s): T Cond pH DO ORP NTU	
Final Water Level (ft-btoc) 64.56	Screened Interval (ft-btoc) 58-78			☒ Fe/Mn: Hach DR900	
Purge Volume (liters) ~1.5 GAL	Sample Depth (ft-btoc) 73			Turbidity Meter: Hach 2100Q	

Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°C/°F)	Cond. (µS/cm)	pH	DO (%/mg/L)	ORP (mV)	Turb. (NTU)
0810		160 mL		16.2	0.79	6.67	0.01	65.1	12.4
0815				14.8	0.80	6.76	0.01	52.7	10.3
0820				14.7	0.84	6.95	0.01	37.3	16.2
0825				14.5	0.87	7.01	0.01	32.0	19.1
0830				14.5	0.89	7.05	0.01	29.3	20.1
0835				14.5	0.90	7.08	0.01	26.8	21.2

☒ Full Sample Suite Obtained	Condition of Well, Remarks: SETTING: 15/30 FIRST DISCHARGE: 0808 VOL METHANE / ETHANE / ETHYLE TOL SULFATE / NITRATE / CHLORIDE
☐ Partial Sample Suite Obtained	
☐ No Sample Obtained	
QC Samples: ☒ FS ☐ RB ☐ AB ☐ MS/MSD	
See COC for analyses requested.	
Sample ID: 48MWD06	QC Sample ID: 49TH1C0845
Protective Level Dermal ☐ C ☐ B ☐ A	Sample Time: 0845
Respiratory: ☒ C ☐ B ☐ A	☐ Metals Sample Filtered
	Filter
	Checked by: SLI
	Date: 7/12/17

FE = 0.23 MG/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book #

Page 1 of 1

ID 49MWO1	Date 7/12/17	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials PTP/SJC	Time 1120	☐ Peristaltic:		Water-level Meter: Keck 200'					
Casing Diameter (in) 2"	Casing Stickup (ft)	☒ Bladder Geotech 1.66 x 18		Oil-water Interface Meter:					
Initial Water Level (ft) 115.51	Total Well Depth (ft-btoc) 121	☐ Other:		YSI Pro Plus Parameter Meter(s): T Cond pH DO ORP NTU					
Final Water Level (ft-btoc)	Screened Interval (ft-btoc) 90-121			☒ Fe/Mn: Hach DR900					
Purge Volume (liters) ~1.2 GAL	Sample Depth (ft-btoc) 120			Turbidity Meter: Hach 2100Q					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°F)	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)
1130		95 mL		18.7	599.4	6.86		180.6	
1135		95 mL		16.1	494.0	6.81	4.90	187.1	90.7
1140				5.1	485.6	6.89	4.74	179.0	92.1
1145				14.7	485.3	7.04	4.78	164.3	58.9
1150				14.5	485.7	7.19	4.83	152.3	47.4
1155				14.3	487.2	7.31	4.30	143.2	36.8
1200				14.2	487.0	7.37	4.31	139.5	28.0
1205				14.4	486.4	7.47	4.31	130.2	21.9
1210				14.4	486.3	7.53	4.30	126.1	19.9
1215				14.2	487.2	7.57	4.30	121.5	18.7
☒ Full Sample Suite Obtained			Condition of Well, Remarks: SETTING: 30/30 40/40 FIRST DISCHARGE: 1129 NO METHANE/ETHANE/ETHENE SULFATE/NITRATE / CHLORIDE						
☐ Partial Sample Suite Obtained			TDL						
☐ No Sample Obtained			QC Samples: FD FS RB AB MS/MSD						
See COC for analyses requested			QC Sample ID: NONE						
Sample ID: 49MWO1			Sample Time: 1220						
Protective Level Dermal ☒ C B A			Checked by:						
Respiratory ☒ C B A			Date: 7/12/17						

21
Fe 0.1 mg/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 1 of 1

ID 49MW02	Date 7/12/17	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials PTD/SJL	Time 1302	☐ Peristaltic:		Water-level Meter: Keck 200'					
Casing Diameter (in) 2"	Casing Stickup (ft)	☒ Bladder: Geotech 1.66 x 18		Oil-water Interface Meter:					
Initial Water Level (ft btoc) 93.66	Total Well Depth (ft-btoc) 133	☐ Other:		YSI Pro Plus Parameter Meter(s): T Cond pH DO ORP NTU					
Final Water Level (ft-btoc) 100.46	Screened Interval (ft-btoc) 103-133			☒ Fe/Mn: Hach DR900					
Purge Volume (liters) 21.56AL	Sample Depth (ft-btoc) 108			Turbidity Meter: Hach 2100Q					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°C/°F)	Cond. (µS/cm)	pH	DO %/(mg/L)	ORP (mV)	Turb. (NTU)
1315		125 mL		16.1	596.1	6.69	2.03	134.6	83.6
1320				15.1	585.2	6.77	1.13	132.1	56.6
1325				15.1	583.5	6.92	0.81	125.7	34.4
1330				14.5	583.0	7.03	0.72	119.4	19.4
1335				14.5	582.9	7.13	0.71	114.5	11.6
1340				14.6	584.2	7.23	0.70	112.1	3.84
1345				14.6	584.0	7.29	0.70	106.3	5.68
1350				14.6	583.0	7.34	0.67	105.8	4.97
1355				14.6	584.0	7.38	0.67	102.7	3.93
☒ Full Sample Suite Obtained			Condition of Well, Remarks: CONTROLLER SETTING: 30/30 FIRST DISCHARGE: 1311 VOX TOL METHANE/ETHANE/ETHYLENE SULFATE/NITRATE/CHLORIDE						
☐ Partial Sample Suite Obtained									
☐ No Sample Obtained									
QC Samples ☒ ES RB AB MS/MSD									
See COC for analyses requested									
Sample ID 49MW02			QC Sample ID: 49TM2			Sampler's Signature: SJL			
Protective Level: Dermal ☒ C B A			Sample Time: 1400			Checked by:			
Respiratory: ☒ C B A			☐ Metals Sample Filtered			Filter		Date: 7/12/17	

FE = 216 mg/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 1 of 1

ID 49HW04		Date 7/13/17		Purge/Sample Equipment		Water-quality Equipment			
Samplers' Initials STY/PTP		Time 1424		☐ Peristaltic:		Water-level Meter: Keck 200'			
Casing Diameter (in) 2"		Casing Stickup (ft)		☒ Bladder: Geotech 1.66 x 18		Oil-water Interface Meter:			
Initial Water Level (ft-btoc) 20.75		Total Well Depth (ft-btoc) 72		☐ Other:		YSI Pro Plus Parameter Meter(s): T Cond pH DO ORP NTU			
Final Water Level (ft-btoc) 21.25		Screened Interval (ft-btoc) 50-70				☒ Fe/Mn: Hach DR900			
Purge Volume (liters) ~1.56L		Sample Depth (ft-btoc) 53				Turbidity Meter: Hach 2100Q			
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°C/°F)	Cond. (µS/cm)	pH	DO (mg/L)	ORP (mV)	Turb. (NTU)
1545		50ML		18.5	667	7.04	5.93	109.4	6.22
1550				15.5	668	6.82	5.78	134.8	4.56
1555				14.7	670	6.98	5.22	130.1	5.43
1600				14.6	669	7.10	5.00	127.0	5.06
1605				14.4	666	7.22	4.83	121.6	4.44
1610				14.4	665	7.29	4.65	119.3	3.38
1615				14.3	665	7.34	4.67	117.0	3.23
1620				14.3	664	7.39	4.29	114.3	2.35
☒ Full Sample Suite Obtained				Condition of Well, Remarks: SETTING: 10/50 FIRST DISCHARGE TDC VOL METHANE/ETHANE/ETHENE NITRATE/SULFATE/CHLORIDE					
☐ Partial Sample Suite Obtained									
☐ No Sample Obtained									
QC Samples: FD FS RB AB MS/MSD				Sampler's Signature: <i>Shi</i>					
See COC for analyses requested				Checked by:					
Sample ID: 49HW04				Sample Time: 1625					
Protective Level: ☒ C ☐ B ☐ A				Date: 7/13/17					
Respiratory: ☒ C ☐ B ☐ A				☐ Metals Sample Filtered Filter					

FE = 0.10 MG/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 1 of 2

ID SOMW02	Date 7/13/17	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials SJL/PTD	Time 0824	☐ Peristaltic:		Water-level Meter: Keck 200'					
Casing Diameter (in) 2"	Casing Stickup (ft)	☒ Bladder: Geotech 1.66 x 18		Oil-water Interface Meter:					
Initial Water Level (ft btoc) 113.95	Total Well Depth (ft-btoc) 119	☐ Other:		YSI Pro Plus Parameter Meter(s): T Cond pH DO ORP NTU					
Final Water Level (ft-btoc) 113.95	Screened Interval (ft-btoc) 89-119			☒ Fe/Mn: Hach DR900					
Purge Volume (liters) ~1.5 GAL	Sample Depth (ft-btoc) 118			Turbidity Meter: Hach 2100Q					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. (°C/°F)	Cond. (µS/cm)	pH	DO % (mg/L)	ORP (mV)	Turb. (NTU)
0835		95 mL		16.9	721	6.21	4.29	135.1	20.8
0840				14.8	717	6.18	2.86	139.7	22.4
0845				14.6	713	6.33	2.60	132.0	21.5
0850				14.3	708	6.54	2.32	129.2	22.3
0855				14.4	703	6.64	2.36	124.8	17.8
0900				14.2	703	6.75	2.50	121.9	14.8
0905				14.1	704	6.82	2.45	118.7	12.2 13.3
0910				14.0	704	6.85	2.70	119.4	12.2
0915				14.1	703	6.93	2.62	114.5	9.88
☒ Full Sample Suite Obtained		Condition of Well, Remarks: PUMP SETTING: 40/40 FIRST WATER: 0833 TOC METHANE/ETHANE/ETHYLENE SULFATE/NITRATE/CHLORIDE							
☐ Partial Sample Suite Obtained									
☐ No Sample Obtained									
QC Samples: FD FS RB AB MS/MSD		QC Sample ID: NONE							
See COC for analyses requested		Sample Time: 0935							
Sample ID:		Checked by: SJL							
Protective Level Dermal: D C B A		Date: 7/13/17							
Respiratory: D C B A		☐ Metals Sample Filtered Filter							

FE = 0.19 MG/L



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Log Book # _____

Page 2 of 2

ID <u>COMW02</u>	Date <u>7/13/17</u>	Purge/Sample Equipment		Water-quality Equipment					
Samplers' Initials	Time	☐ Peristaltic:		Water-level Meter: Keck 200'					
Casing Diameter (in) <u>2"</u>	Casing Stickup (ft)	☒ Bladder: Geotech 1.66 x 18		Oil-water Interface Meter:					
Initial Water Level (ft-btoc)	Total Well Depth (ft-btoc)	☐ Other:		YSI Pro Plus Parameter Meter(s): T Cond pH DO ORP NTU					
Final Water Level (ft-btoc)	Screened Interval (ft-btoc)			Fe/Mn: Hach DR900					
Purge Volume (liters) <u>~15 GAL</u>	Sample Depth (ft-btoc)			Turbidity Meter: Hach 2100Q					
Time	Depth to Water (ft)	Pumping Rate (l/min)	Purge Volume (liters)	Temp. °C/°F	Cond. (µS/cm)	pH	DO %/mg/L	ORP (mV)	Turb. (NTU)
<u>0920</u>				<u>14.1</u>	<u>704</u>	<u>7.04</u>	<u>2.63</u>	<u>111.7</u>	<u>8.61</u>
<u>0925</u>				<u>14.2</u>	<u>701</u>	<u>7.10</u>	<u>2.64</u>	<u>108.7</u>	<u>7.60</u>
<u>0930</u>				<u>14.2</u>	<u>702</u>	<u>7.14</u>	<u>2.64</u>	<u>108.0</u>	<u>6.53</u>
☐ Full Sample Suite Obtained			Condition of Well, Remarks:						
☐ Partial Sample Suite Obtained									
☐ No Sample Obtained									
QC Samples: FD FS RB AB MS/MSD			Sampler's Signature:						
See COC for analyses requested.									
Sample ID:			QC Sample ID:				Checked by:		
Protective Level Dermal: D C B A			Sample Time:				Date:		
Respiratory: D C B A			☐ Metals Sample Filtered				Filter		