

ATTACHMENT 4: FIELD LOGS

This attachment contains the groundwater sample collection field logs for the relatively shallow standpipe monitoring wells (MW-1, MW-5 through MW-10, MW-13, MW-15, and MW-16), as well as the field data sheets for the Westbay™ multiport wells (MW-3, MW-4, MW-11, MW-12, MW-14, and MW-17 through MW-26). Groundwater sample collection for the 4th Quarter 2017 sampling event was conducted by Blaine Tech Services, Inc.

WELL MONITORING DATA SHEET

Project #: 171013-HH1	Site: JPL
Sampler: HH	Date: 10/24/17
Well I.D.: MW-5	Well Diameter: 2 3 4 6 8 <u> </u>
Total Well Depth (TD): 190.00	Depth to Water (DTW): 115.65
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type YSI 556
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 120.52	

Purge Method: Bailer Waterra Sampling Method: Bailer

 Disposable Bailer 2" Rediflo pump Disposable Bailer

 Positive Air Displacement Extraction Pump Extraction Port

 Electric Submersible **Other: Del REZ** Dedicated Tubing

Other: _____

20mm @ 1048

15.9 (Gals.) X	3	=	47.7 Gals.
1 Case Volume	Specified Volumes		Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp (°F)	pH	Cond. (mS/cm or μ S/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP(mV)	Gals. Removed	DTW Observations
1052	72.3	7.89	580	10	3.10	179	8	116.25
1056	74.3	7.03	468	6	2.66	148	16	116.39
1100	74.9	6.97	451	5	2.63	144	24	116.43
1104	74.3	6.98	450	4	2.55	139	32	116.46
1108	74.1	6.96	449	4	2.52	137	40	116.47
1112	74.0	6.94	447	4	2.50	135	48	116.47

Did well dewater? Yes **No** Gallons actually evacuated: **48**

Sampling Date: **10/24/17** Sampling Time: **1113** Depth to Water: **116.47**

Sample I.D.: **MW-5** Laboratory: **BC**

Analyzed for: **See C.O.C** Other: _____

EB I.D. (if applicable): _____ @ _____ Time Duplicate I.D. (if applicable): **DUP-6-4217** @ **1123**

FB I.D. (if applicable): _____ @ _____ Time Analyzed for: _____

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 171013-HH1	Site: JPL
Sampler: HIT	Date: 10/24/17
Well I.D.: MW-6	Well Diameter: 2 3 ④ 6 8
Total Well Depth (TD): 245.00	Depth to Water (DTW): 227.45
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 230.96	

Purge Method: Bailer Waterra Sampling Method: Bailer
 Disposable Bailer 2" Rediflo pump Disposable Bailer
 Positive Air Displacement Extraction Pump Extraction Port
 Electric Submersible Other: Ded. REZ Dedicated Tubing

16pm @ 1325

11.5 (Gals.) X 3 = 34.5 Gals.
 I Case Volume Specified Volumes Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp (°F)	pH	Cond. (mS/cm or <u>µS/cm</u>)	Turbidity (NTUs)	D.O. (mg/L)	ORP(mV)	Gals. Removed	PTW Observations
1331	76.5	7.30	1073	12	4.71	95	6	228.11
1337	74.5	7.20	1093	10	4.65	90	12	228.20
1343	74.2	7.17	1102	8	4.63	88	18	228.22
1349	74.1	7.16	1105	7	4.61	85	24	228.24
1355	73.9	7.16	1109	7	4.59	84	30	228.24
1401	73.8	7.15	1110	7	4.57	83	36	228.24

Did well dewater? Yes No Gallons actually evacuated: 36

Sampling Date: 10/24/17 Sampling Time: 1402 Depth to Water: 228.24

Sample I.D.: MW-6 Laboratory: BC

Analyzed for: See C.O.C Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

FB I.D. (if applicable): @ Time Analyzed for:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

* MS / MSD

WELL MONITORING DATA SHEET

Project #: 171013-HA1	Site: JPL
Sampler: HA	Date: 10/25/17
Well I.D.: MW-7	Well Diameter: 2 3 (4) 6 8
Total Well Depth (TD): 267.55	Depth to Water (DTW): 254.71
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type YSI 556
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 257.27	

Purge Method: Bailer Waterra Sampling Method: Bailer
 Disposable Bailer 2" Rediflo pump Disposable Bailer
 Positive Air Displacement Extraction Pump Extraction Port
 Electric Submersible Other _____ Dedicated Tubing
 Other: None taken

16PM @ 10/10

8.4 (Gals.) X 3 = 25.2 Gals.
 1 Case Volume Specified Volumes Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp (°F)	pH	Cond. (mS/cm or <u>µS/cm</u>)	Turbidity (NTUs)	D.O. (mg/L)	ORP(mV)	Gals. Removed	DTW Observations
1014	74.5	6.93	850	21000	3.92	123	4	255.31
1019	75.3	7.10	754	291	3.45	110	9	255.39
1023	75.6	7.13	750	135	3.31	108	13	255.41
1028	75.8	7.15	746	124	3.19	105	18	255.43
1033	76.0	7.16	745	122	3.17	103	23	255.43
1036	76.0	7.16	743	121	3.15	102	26	255.43

Did well dewater? Yes (No) Gallons actually evacuated: 26

Sampling Date: 10/1/17 Sampling Time: 1037 Depth to Water: 255.43

Sample I.D.: MW-7 Laboratory: BC

Analyzed for: See C.O.C Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

FB I.D. (if applicable): @ Time Analyzed for:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 171013-HH1	Site: SPL
Sampler: HH	Date: 10/25/17
Well I.D.: MW-9	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth (TD): 68.00	Depth to Water (DTW): 32.05
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type YSI 556
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 39.24	

Purge Method: Bailer Waterra Sampling Method: Bailer
 Disposable Bailer 2" Rediflo pump Disposable Bailer
 Positive Air Displacement Extraction Pump Extraction Port
 Electric Submersible Other Ded REZ Dedicated Tubing

26PM @ 1113

$$\frac{23.4 \text{ (Gals.)} \times 3}{\text{Specified Volumes}} = \frac{70.2 \text{ Gals.}}{\text{Calculated Volume}}$$

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp (°F)	pH	Cond. (mS/cm or <u>µS/cm</u>)	Turbidity (NTUs)	D.O. (mg/L)	ORP(mV)	Gals. Removed	DTW Observations
1119	69.6	7.31	621	14	1.39	87	12	33.26
1125	70.3	7.25	619	10	1.20	79	24	33.54
1131	70.9	7.23	617	8	1.15	75	36	33.61
1137	71.3	7.21	613	8	1.10	72	48	33.64
1143	71.5	7.20	611	8	1.09	70	60	33.65
1149	71.7	7.18	609	8	1.06	69	72	33.65

Did well dewater? Yes No Gallons actually evacuated: 72

Sampling Date: 10/25/17 Sampling Time: 1150 Depth to Water: 33.65

Sample I.D.: MW-9 Laboratory: BC

Analyzed for: See C.O.C Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

FB I.D. (if applicable): @ Time Analyzed for:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 171013-1441	Site: JPL
Sampler: HH	Date: 10/25/17
Well I.D.: MW-13	Well Diameter: 2 3 ④ 6 8
Total Well Depth (TD): 234.65	Depth to Water (DTW): 225.33
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type YSI 556
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 227.19	

Purge Method: Bailer Waterra Sampling Method: Bailer
 Disposable Bailer 2" Rediflo pump Disposable Bailer
 Positive Air Displacement Extraction Pump Extraction Port
 Electric Submersible Other _____ Dedicated Tubing

16PM @ 0820

6.1 (Gals.) X 3 = 18.3 Gals.
 1 Case Volume Specified Volumes Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp (°F)	pH	Cond. (mS/cm or <u>µS/cm</u>)	Turbidity (NTUs)	D.O. (mg/L)	ORP(mV)	Gals. Removed	DTW Observations
0823	73.4	8.03	662	>1000	5.84	78	3	226.10
0826	72.4	7.90	696	201	5.65	73	6	226.14
0829	72.2	7.85	697	134	5.61	70	9	226.16
0832	72.1	7.83	699	120	5.55	68	12	226.17
0835	72.0	7.81	698	121	5.53	66	15	226.17
0839	72.0	7.80	696	119	5.51	64	19	226.17

Did well dewater? Yes No Gallons actually evacuated: 19

Sampling Date: 10/25/17 Sampling Time: 0840 Depth to Water: 226.17

Sample I.D.: MW-13 Laboratory: BC

Analyzed for: See C.O.C Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

FB I.D. (if applicable): @ Time Analyzed for:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

*MS/MSD

WELL MONITORING DATA SHEET

Project #: <u>171013-1411</u>	Site: <u>JPL</u>
Sampler: <u>HH</u>	Date: <u>10/24/17</u>
Well I.D.: <u>MW-15</u>	Well Diameter: 2 3 <u>(4)</u> 6 8 <u> </u>
Total Well Depth (TD): <u>74.00</u>	Depth to Water (DTW): <u>44.90</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>(PVC)</u> Grade	Flow Cell Type YSI 556
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <u>50.72</u>	

Purge Method: Bailer Waterra Sampling Method: Bailer
 Disposable Bailer 2" Rediflo pump Disposable Bailer
 Positive Air Displacement Extraction Pump Extraction Port
 Electric Submersible Other: Del. PFR Dedicated Tubing

#1 26PM @ 1208

<u>18/19</u> (Gals.) X	<u>3</u>	=	<u>57</u> Gals.
1 Case Volume	Specified Volumes		Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp (°F)	pH	Cond. (mS/cm or <u>μS/cm</u>)	Turbidity (NTUs)	D.O. (mg/L)	ORP(mV)	Gals. Removed	DTW Observations
1213	69.8	7.50	536	8	3.03	113	10	45.73
1218	70.3	7.48	533	7	2.95	109	20	45.91
1223	70.6	7.45	531	6	2.92	105	30	45.97
1228	70.5	7.44	529	6	2.90	103	40	45.99
1233	70.4	7.41	527	6	2.88	101	50	45.99
1238	70.3	7.40	526	6	2.86	100	60	45.99

Did well dewater? Yes (No) Gallons actually evacuated: #11 1857

Sampling Date: 10/24/17 Sampling Time: 1239 Depth to Water: 45.99

Sample I.D.: MW-15 Laboratory: BC

Analyzed for: See C.O.C Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

FB I.D. (if applicable): @ Time Analyzed for:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

*MS/MSD

WELL MONITORING DATA SHEET

Project #: 171013-HH1	Site: JPL
Sampler: HH	Date: 10/25/17
Well I.D.: MW-16	Well Diameter: 2 3 ④ 6 8
Total Well Depth (TD): 284.28	Depth to Water (DTW): 277.30
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type YSI 556
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 278.79	

Purge Method: Bailer Waterra Sampling Method: Bailer
 Disposable Bailer 2" Rediflo pump Disposable Bailer
 Positive Air Displacement Extraction Pump Extraction Port
 Electric Submersible Other _____ Dedicated Tubing

16PM @ 0919

4.9 (Gals.) X 3 = 14.7 Gals.
 I Case Volume Specified Volumes Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp (°F)	pH	Cond. (mS/cm or μS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP(mV)	Gals. Removed	DTW Observations
0922	75.5	6.98	721	>1000	4.85	92	3	278.31
0924	75.9	7.21	735	601	4.73	90.	5	278.35
0926	76.2	7.23	740	135	4.71	87	7	278.37
0929	76.3	7.25	725	124	4.67	85	10	278.38
0931	76.1	7.26	726	122	4.66	84	12	278.39
0934	76.2	7.26	724	120	4.63	82	15	278.39

Did well dewater? Yes No Gallons actually evacuated: 15

Sampling Date: 10/25/17 Sampling Time: 0935 Depth to Water: 278.39

Sample I.D.: MW-16 Laboratory: BC

Analyzed for: See C.O.C Other: @0945

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable): DUP-7-4017

FB I.D. (if applicable): @ Time Analyzed for:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MW-4
 SAMPLING DATE(S): 10/23/17
 LOCATION: JPL
 WATER LEVEL INSIDE CASING: 152.24
 ATM. PRESSURE (PSI): (Start) 1410 (Finish) 1412

PROBE TYPE: Westbay
 SERIAL NO.: EMS2502
 PROJECT: JPL
 OPERATOR(S): T. Hoang
 WEATHER: Clear

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)				Sample Collection Checks (probe at sampling port in MP casing)					Field Parameters					Sample				
		Arm out / Land Probe	Shoe Out / Close Valve / Check Vacuum	Open Valve / Apply Vacuum (5 psi)	Close Valve / Shoe In / Arm In	Locate Port / Arm Out / Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve / Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm)	ORP (mv)	Sample Time	Sample ID
5	1	✓	✓	✓	✓	✓	176.09	✓	178.99	✓	178.99	✓	176.09	19.5	970	7.85	16	3.96	-65	0740	MW-4-5
4	1	✓	✓	✓	✓	✓	123.31	✓	126.53	✓	126.53	✓	123.31	19.6	924	8.22	18	4.35	-40	0800	MW-4-4
3	1	✓	✓	✓	✓	✓	92.77	✓	96.24	✓	96.24	✓	92.77	20.7	1023	8.15	105	5.39	-67	0830	MW-4-3
2	1	✓	✓	✓	✓	✓	56.97	✓	60.62	✓	60.62	✓	56.97	22.3	1178	7.62	13	6.05	79	0930	MW-4-2
1	1	✓	✓	✓	✓	✓	17.62	✓	24.27	✓	24.27	✓	17.62	22.2	412	8.13	10	5.76	58	1000	MW-4-1

Comments: TB-6-102317 @ 0700

MW-4-3 - Very turbid - verified port ✓

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MW-11
 SAMPLING DATE(S): 10/26/17
 LOCATION: JPL
 WATER LEVEL INSIDE CASING: 171.25
 ATM. PRESSURE (PSI): (Start) 14.10 (Finish) 14.12

PROBE TYPE: Westbay
 SERIAL NO.: EMS 2502
 PROJECT: JPL
 OPERATOR(S): T. Hoay
 WEATHER: clear

Port Number	Run Number	Probe to Top Collar		Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)				Sample Collection Checks (probe at sampling port in MP casing)						Field Parameters					Sample		
		Arm out/ Land Probe	Shoe Out/ Close Valve/ Check Vacuum	Open Valve/ Apply Vacuum (5 psi)	Close Valve/ Shoe In/ Arm In	Locate Port/ Arm Out/ Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve/ Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm) mg/L	ORP (mv)	Sample Time	Sample ID
1	1	✓	✓	✓	✓	✓	14.17	✓	21.93	✓	21.93	✓	14.17	18.1	698	7.89	2	5.19	151	0750	MW-11-4 MW-11-1
	2	✓	✓	✓	✓	✓	14.15	✓	21.91	✓	21.91	✓	14.15								MW-11-1
5	1	✓	✓	✓	✓	✓	219.22	✓	198.62	✓	198.62	✓	219.22	19.1	347	8.35	1	6.05	172	0845	MW-11-5
	2	✓	✓	✓	✓	✓	219.20	✓	198.61	✓	198.61	✓	219.20								
4	1	✓	✓	✓	✓	✓	170.95	✓	163.35	✓	163.35	✓	170.95	20.7	264	8.41	2	6.35	-88	0930	MW-11-4
3	1	✓	✓	✓	✓	✓	130.29	✓	119.92	✓	119.92	✓	130.29	21.5	422	7.43	2	6.59	154	1000	MW-11-3
2	1	✓	✓	✓	✓	✓	56.31	✓	49.18	✓	49.18	✓	56.31	22.7	462	7.85	3	6.65	-29	1030	MW-11-2

Comments: _____

**WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET**

WELL ID: MW-14
 SAMPLING DATE(S): 10/11/17
 LOCATION: JPL
 WATER LEVEL INSIDE CASING: 192.97
 ATM. PRESSURE (PSI): (Start) 14.02 (Finish) 14.06

PROBE TYPE: Westbay
 SERIAL NO.: EMS2502
 PROJECT: JDL
 OPERATOR(S): T-Hours
 WEATHER: Clear

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)					Sample Collection Checks (probe at sampling port in MP casing)						Field Parameters						Sample	
		Arm out/ Land Probe	Shoe Out/ Close Valve/ Check Vacuum	Open Valve/ Apply Vacuum (psi)	Close Valve/ Shoe In/ Arm In	Locate Port/ Arm Out/ Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve/ Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm) mg/L	ORP (mv)	Sample Time	Sample ID
5	1	✓	✓	✓	✓	✓	170.16	✓	156.54	✓	156.54	✓	170.16	18.7	403	7.71	2	6.11	178	0730	MW-14-5
4	1	✓	✓	✓	✓	✓	133.51	✓	120.31	✓	120.31	✓	133.51	19.1	701	7.83	2	6.01	175	0750	MW-14-4
3	1	✓	✓	✓	✓	✓	101.13	✓	88.25	✓	88.25	✓	101.13	20.1	1134	7.73	3	6.48	170	0830	MW-14-3
2	1	✓	✓	✓	✓	✓	55.32	✓	42.75	✓	42.75	✓	55.32	20.8	1213	7.97	2	6.90	163	0850	MW-14-2
1	1	✓	✓	✓	✓	✓	21.31	✓	14.23	✓	14.23	✓	21.31	- Port is Dry - No Sample Taken							MW-14-1

Comments: TB-2-101717 @ 0700

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MW-17
 SAMPLING DATE(S): 10/18/17
 LOCATION: JPL
 WATER LEVEL INSIDE CASING: 208.25
 ATM. PRESSURE (PSI): (Start) 14.07 (Finish) 14.10

PROBE TYPE: Westbay
 SERIAL NO.: EIMS 2302
 PROJECT: JPL
 OPERATOR(S): T. Hickey
 WEATHER: Clear

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)				Sample Collection Checks (probe at sampling port in MP casing)						Field Parameters					Sample			
		Arm out / Land Probe	Shoe Out / Close Valve / Check Vacuum	Open Valve / Apply Vacuum (5 psi)	Close Valve / Shoe In / Arm In	Locate Port / Arm Out / Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve / Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm) mg/L	ORP (mv)	Sample Time	Sample ID
5	1	✓	✓	✓	✓	✓	241.06	✓	215.71	✓	215.71	✓	241.06	17.6	687	7.52	2	5.91	173	0810	MW-17-5
4	1	✓	✓	✓	✓	✓	178.65	✓	158.89	✓	158.89	✓	178.65	18.4	697	7.88	2	6.35	164	0845	MW-17-4
3	1	✓	✓	✓	✓	✓	129.20	✓	110.54	✓	110.54	✓	129.20	18.8	873	7.90	3	6.49	168	0915	MW-17-3
2	1	✓	✓	✓	✓	✓	86.68	✓	69.83	✓	69.83	✓	86.68	18.7	648	8.20	3	6.55	160	0935	MW-17-2
1	1	✓	✓	✓	✓	✓	34.39	✓	19.59	✓	19.59	✓	34.39	11.3	439	8.35	2	6.65	156	1005	MW-17-1
	2	✓	✓	✓	✓	✓	34.35	✓	19.60	✓	19.60	✓	34.35								

Comments: TB-3-10/18/17 @ 0700

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MW-18
 SAMPLING DATE(S): 10/18/17
 LOCATION: JPL
 WATER LEVEL INSIDE CASING: 294.40
 ATM. PRESSURE (PSI): (Start) 13.94 (Finish) 14.03

PROBE TYPE: Westbay
 SERIAL NO.: EMS2502
 PROJECT: JPL
 OPERATOR(S): T. Hoang
 WEATHER: Clear

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)					Sample Collection Checks (probe at sampling port in MP casing)						Field Parameters					Sample		
		Arm out/ Land Probe	Shoe Out/ Close Valve/ Check Vacuum	Open Valve/ Apply Vacuum (0 psi)	Close Valve/ Shoe In/ Arm In	Locate Port/ Arm Out/ Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve/ Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm) mg/L	ORP (mv)	Sample Time	Sample ID
0	1	✓	✓	✓	✓	✓	158.24	✓	152.23	✓	152.23	✓	158.24	21.1	312	8.61	3	7.05	-61	1145	MW-18-5
4	1	✓	✓	✓	✓	✓	135.92	✓	135.58	✓	135.58	✓	135.92	22.5	464	7.35	2	6.09	124	1215	MW-18-4
3	1	✓	✓	✓	✓	✓	74.96	✓	78.07	✓	78.07	✓	74.96	23.2	550	8.10	3	6.39	131	1245	MW-18-3
	2	✓	✓	✓	✓	✓	74.90	✓	78.09	✓	78.09	✓	74.90								
2	1	✓	✓	✓	✓	✓	34.04	✓	36.92	✓	36.92	✓	34.04	23.0	541	8.32	4	6.19	116	1345	MW-18-2
	2	✓	✓	✓	✓	✓	34.02	✓	36.93	✓	36.93	✓	34.02								
1	1	✓	✓	✓	✓	✓	14.09	✓	14.11	✓	14.11	✓	14.09	-port is Dry - No Sample Taken -							MW-18-1

Comments: POP-3-4617 @ MW-18-3 @ 1255
MS/MSD @ MW-18-2

**WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET**

WELL ID: MW-20
 SAMPLING DATE(S) 10/16/17
 LOCATION: JPL - Church Park & Lot
 WATER LEVEL INSIDE CASING: 239.26
 ATM. PRESSURE (PSI): (Start) 14.09 (Finish) 14.11

PROBE TYPE Westbay
 SERIAL NO. EMS 4762502
 PROJECT: JPL
 OPERATOR(S) T. Hoang
 WEATHER Clear

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)				Sample Collection Checks (probe at sampling port in MP casing)						Field Parameters					Sample			
		Arm out/ Land Probe	Shoe Out/ Close Valve/ Check Vacuum	Open Valve/ Apply Vacuum (5 psi)	Close Valve/ Shoe In/ Arm In	Locate Port/ Arm Out/ Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve/ Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm) mg/L	ORP (mv)	Sample Time	Sample ID
5	1	✓	✓	✓	✓	✓	306.09	✓	306.42	✓	306.42	✓	306.09	19.7	421	6.95	2	7.11	-45	0830	MW-20-5
4	1	✓	✓	✓	✓	✓	219.20	✓	209.70	✓	209.70	✓	219.20	20.8	331	8.18	1	6.69	-90	0910	MW-20-4
3	1	✓	✓	✓	✓	✓	159.11	✓	149.78	✓	149.78	✓	159.11	22.8	349	8.87	2	5.23	-118	0935	MW-20-3
	2	✓	✓	✓	✓	✓	159.07	✓	149.79	✓	149.79	✓	159.07								
2	1	✓	✓	✓	✓	✓	84.92	✓	82.31	✓	82.31	✓	84.92	23.7	682	8.21	2	5.05	44	1045	MW-20-2
1	1	✓	✓	✓	✓	✓	14.29	✓	14.19	✓	14.19	✓	14.29	- port is dry - No sample					1115	MW-20-1	

Comments: TB-1-101617 @ 0700

dup-7-4017 @ MW-20-3 @ 0945

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MW-21
 SAMPLING DATE(S): 10/26/17
 LOCATION: JPL
 WATER LEVEL INSIDE CASING: 116.15
 ATM. PRESSURE (PSI): (Start) 14.09 (Finish) 14.11

PROBE TYPE: Westbay
 SERIAL NO.: FMS 2502
 PROJECT: JPL
 OPERATOR(S): T. Hoang
 WEATHER: Clear

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)				Sample Collection Checks (probe at sampling port in MP casing)						Field Parameters					Sample				
			Shoe Out/ Land Probe	Shoe Out/ Close Valve/ Check Vacuum	Open Valve/ Apply Vacuum (5 psi)	Close Valve/ Shoe In/ Arm In	Locate Port/ Arm Out/ Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve/ Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm) mg/L	ORP (mv)	Sample Time	Sample ID
5	1	✓	✓	✓	✓	✓	129.53	✓	131.78	✓	131.78	✓	129.53	23.9	808	8.35	4	5.37	144	1130	MW-21-5	
	2	✓	✓	✓	✓	✓	129.48	✓	131.80	✓	131.80	✓	129.48									
4	1	✓	✓	✓	✓	✓	103.54	✓	104.96	✓	104.96	✓	103.54	22.9	962	8.50	2	6.05	143	1210	MW-21-4	
3	1	✓	✓	✓	✓	✓	73.22	✓	75.12	✓	75.12	✓	73.22	13.0	1214	8.09	2	5.95	164	1235	MW-21-3	
2	1	✓	✓	✓	✓	✓	38.87	✓	41.03	✓	41.03	✓	38.87	25.3	1286	8.16	1	5.63	158	1300	MW-21-2	
	2	✓	✓	✓	✓	✓	38.88	✓	41.04	✓	41.04	✓	38.88									
1	1	✓	✓	✓	✓	✓	14.04	✓	14.07	✓	14.07	✓	14.04	-port is dry - no sample taken						MW-21-1		

Comments: FB-8-102617@1330
MS/MSD @ MW-21-2

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MW-22
 SAMPLING DATE(S): 10/19/17
 LOCATION: JPL
 WATER LEVEL INSIDE CASING: 174.53
 ATM. PRESSURE (PSI): (Start) 14.01 (Finish) 14.03

PROBE TYPE: Westbay
 SERIAL NO.: EMS 2502
 PROJECT: JPL
 OPERATOR(S): T. Hoang
 WEATHER: Clear

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)					Sample Collection Checks (probe at sampling port in MP casing)					Field Parameters					Sample			
		Arm out/ Land Probe	Shoe Out/ Close Valve/ Check Vacuum	Open Valve/ Apply Vacuum (5 psi)	Close Valve/ Shoe In/ Arm In	Locate Port/ Arm Out/ Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve/ Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm) mg/L	ORP (mv)	Sample Time	Sample ID
5	1	✓	✓	✓	✓	✓	146.75	✓	171.46	✓	171.46	✓	195.94	19.9	578	8.30	3	5.96	-145	0740	MW-22-5
4	1	✓	✓	✓	✓	✓	143.40	✓	120.44	✓	120.44	✓	143.40	19.3	400	6.92	2	6.34	79	0815	MW-22-4
3	1	✓	✓	✓	✓	✓	109.56	✓	88.53	✓	88.53	✓	109.56	17.8	488	7.48	2	6.45	149	0840	MW-22-3
	2	✓	✓	✓	✓	✓	109.55	✓	88.52	✓	88.52	✓	109.55								
2	1	✓	✓	✓	✓	✓	83.04	✓	62.43	✓	62.43	✓	83.04	17.6	613	7.72	3	6.83	170	0945	MW-22-2
	2	✓	✓	✓	✓	✓	82.95	✓	62.44	✓	62.44	✓	82.95								
1	1	✓	✓	✓	✓	✓	45.75	✓	26.29	✓	26.29	✓	45.75	8.9	1188	7.43	2	6.56	179	1015	MW-22-1

Comments: TB-4-16/19/17 @ 0700 M&S/M&SP @ MW-22-2
DUP-4-40/17 @ MW-22-3 @ 0850

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MLW-23
 SAMPLING DATE(S) 10/20/17
 LOCATION: JPL
 WATER LEVEL INSIDE CASING: 126.95
 ATM. PRESSURE (PSI): (Start) 14.07 (Finish) 14.09

PROBE TYPE Westbay
 SERIAL NO. EMS 2502
 PROJECT: JPL
 OPERATOR(S) J Hoas
 WEATHER Clear

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)				Sample Collection Checks (probe at sampling port in MP casing)						Field Parameters					Sample			
		Arm out/ Land Probe	Shoe Out/ Close Valve/ Check Vacuum	Open Valve/ Apply Vacuum (5 psi)	Close Valve/ Shoe In/ Arm In	Locate Port/ Arm Out/ Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve/ Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm) mg/L	ORP (mv)	Sample Time	Sample ID
5	1	✓	✓	✓	✓	✓	196.05	✓	180.05	✓	180.08	✓	196.05	20.1	442	7.95	3	6.05	-127	0745	MLW-23-5
4	1	✓	✓	✓	✓	✓	153.86	✓	137.90	✓	137.90	✓	153.86	19.8	403	8.17	2	5.31	43	0815	MLW-23-4
3	1	✓	✓	✓	✓	✓	99.40	✓	86.12	✓	86.12	✓	99.40	19.5	535	8.10	2	5.75	103	0840	MLW-23-3
2	1	✓	✓	✓	✓	✓	71.10	✓	58.04	✓	58.04	✓	71.10	19.5	1136	7.82	1	6.06	129	0900	MLW-23-2
1	1	✓	✓	✓	✓	✓	36.43	✓	24.45	✓	24.45	✓	36.43	19.3	1206	7.35	2	5.60	105	0945	MLW-23-1
	2	✓	✓	✓	✓	✓	36.43	✓	24.46	✓	24.46	✓	36.43								
	3	✓	✓	✓	✓	✓	36.40	✓	24.45	✓	24.45	✓	36.40								

Comments: ms/msd @ MLW-23-1

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MW-24
 SAMPLING DATE(S): 10/19/17
 LOCATION: JPL
 WATER LEVEL INSIDE CASING: 216.44
 ATM. PRESSURE (PSI): (Start) 17.03 (Finish) 14.05

PROBE TYPE: Westbay
 SERIAL NO.: EM52502
 PROJECT: JPL
 OPERATOR(S): T. Hoang
 WEATHER: Clear

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)				Sample Collection Checks (probe at sampling port in MP casing)						Field Parameters					Sample			
		Arm out / Land Probe	Shoe Out / Close Valve / Check Vacuum	Open Valve / Apply Vacuum (5 psi)	Close Valve / Shoe In / Arm In	Locate Port / Arm Out / Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve / Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm) mg/L	ORP (mv)	Sample Time	Sample ID
5	1	✓	✓	✓	✓	✓	218.45	✓	195.88	✓	195.88	✓	218.45	23.3	455	7.81	2	5.33	39	1150	MW-24-5
4	1	✓	✓	✓	✓	✓	161.97	✓	145.04	✓	145.04	✓	161.97	22.7	345	8.46	1	4.89	-17.1	1120	MW-24-4
3	1	✓	✓	✓	✓	✓	113.31	✓	95.81	✓	95.81	✓	113.31	23.1	467	8.09	2	5.69	-16.5	1215	MW-24-3
2	1	✓	✓	✓	✓	✓	86.44	✓	69.15	✓	69.15	✓	86.44	23.2	674	7.25	3	4.31	125	1245	MW-24-2
1	1	✓	✓	✓	✓	✓	45.63	✓	30.14	✓	30.14	✓	45.63	23.3	755	7.97	1	5.81	122	1330	MW-24-1
	2	✓	✓	✓	✓	✓	45.66	✓	30.13	✓	30.13	✓	45.66								
	3	✓	✓	✓	✓	✓	45.63	✓	30.13	✓	30.13	✓	45.63								

Comments: ms/mp @ MW-24-1
EB-4-101917 @ 1350

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MW-25
 SAMPLING DATE(S): 10/17/17
 LOCATION: JPL
 WATER LEVEL INSIDE CASING: 244.37
 ATM. PRESSURE (PSI): (Start) 14.10 (Finish) 14.12

PROBE TYPE: Westboy
 SERIAL NO.: EM52502
 PROJECT: JPL
 OPERATOR(S): J. Hoang
 WEATHER: Clear

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)				Sample Collection Checks (probe at sampling port in MP casing)						Field Parameters					Sample				
			Shoe Out/ Close Valve/ Check Vacuum	Open Valve/ Apply Vacuum (5 psi)	Close Valve/ Shoe In/ Arm In	Locate Port/ Arm Out/ Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve/ Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm) Mg/L	ORP (mv)	Sample Time	Sample ID	
5	1	✓	✓	✓	✓	✓	222.26	✓	205.85	✓	205.85	✓	222.26	24.7	783	8.30	3	5.66	-109	1040	MW-25-5	
4	1	✓	✓	✓	✓	✓	187.74	✓	170.49	✓	170.49	✓	187.74	24.4	783	8.09	2	6.31	44	1110	MW-25-4	
3	1	✓	✓	✓	✓	✓	131.15	✓	117.98	✓	117.98	✓	131.15	24.3	725	8.20	2	7.15	126	1140	MW-25-3	
2	1	✓	✓	✓	✓	✓	96.76	✓	87.43	✓	87.43	✓	96.76	24.1	758	8.32	3	7.26	117	1155	MW-25-2	
	2	✓	✓	✓	✓	✓	96.73	✓	87.42	✓	87.42	✓	96.73									
1	1	✓	✓	✓	✓	✓	68.21	✓	61.18	✓	61.18	✓	68.21	27.0	918	7.96	2	7.54	115	1245	MW-25-1	

Comments: ROP-2-4617 @ MW-25-2 @ 1205

EB-2-161717 @ 1300

