ATTACHMENT 4: FIELD LOGS

This attachment contains the groundwater sample collection field logs for the relatively shallow standpipe monitoring wells (MW-5 through MW-8, 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 3rd Quarter 2011 sampling event was conducted by Battelle and Insight Environmental, Inc.

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-5

Battelle
The Business of Innovation
505 King Avenue
Columbus, Ohio 43201

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 100006114
Navy Contract No:
Sampled By: David Loera
Date: 8-25-11
Weather: Sunny / Hot / Clear

PURGE VOLUME CALCULATION (casing volume):

(140' - 40.08) X 4² X 3 X 0.0408 = 195.68 Gallons

(TD (feet) - WL (feet)) X D (inches) X # Vols X 0.0408 = Calculated Purge Volume

PURGE METHOD

☐ Bailer – Type: _____ **X** Pump – Type: 2" Grundfos

PUMP INTAKE SETTING

Depth in feet (BTOC): 125'

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (°C)	ORP (mV)	Comments
1004		Water	to	surface					Flow Rate 3.5 GPM
1011	40.36	24.5	6.93	0.303	1.04	0.56	13.41	62	
1025	40.35	73.5	6.94	0.297	0.83	0.10	13.47	63	
1038	40.37	119	6.95	0.297	0.47	0.06	13.48	60	
1048	40.37	154	6.96	0.292	0.28	0.07	13.47	56	
1058	40.38	189	6.96	0.293	0.83	0.07	13.50	50	
1102									Stop

Total Purge Volume: 200 (Gallons) 65.22
Total Discharge: 3.07 (Casing Volumes)
Approx. Purge Rate: 3.5 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1004 Purge time start: 1004 Stop: 1102
Meters: QED MP20, Oakton T-100

RECHARGE BEHAVIOR:
☒ Fast recharging
☐ Slow recharging (80% recharge did not occur after two hours)

WATER DISPOSAL

Purge water storage: polytank
Purge Water disposal: OU1 System-Battelle-JPL

WELL SAMPLING

Sample Depth in feet (BTOC): 125'

Original	*Duplicate*	*Blank*	*Other (Trip/Source/)*
Sample ID: MW-5	Sample ID:	Type:	Type:
Sample Time: 1100	Sample Time:	Sample ID:	Sample ID:
No. of Containers: Alpha - 5	No. of Containers:	Sample Time:	Sample Time:
CAS - 1		No. of Containers:	No. of Containers:
MWH - 2			

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-6

Battelle
The Business of Innovation
505 King Avenue
Columbus, Ohio 43201

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 100006114
Navy Contract No:
Sampled By: David Lopez
Date: 8-29-11
Weather: Sunny / Warm / Clear

PURGE VOLUME CALCULATION (casing volume):

(245' - 154.11 (90.89)) X 4² X 3 X 0.0408 = 178.00 Gallons

TD (feet) | WL (feet) | D (inches) | # Vols | Calculated Purge Volume

PURGE METHOD

☐ Bailer – Type: _____ **X** Pump – Type: 2" Grundfos

PUMP INTAKE SETTING

Depth in feet (BTOC): 230'

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (°C)	ORP (mV)	Comments
0840		Water	to	surface					Flow Rate 2.6 GPM
0847	154.95	18.2	6.46	1.176	3.57	9.37	20.55	118	
0902	155.00	57.2	6.61	1.174	1.07	9.73	20.56	130	
0917	155.01	96.2	6.62	1.174	1.02	9.81	20.57	114	
0931	155.03	132.6	6.65	1.170	0.71	9.40	20.57	74	
0941	155.04	158.6	6.64	1.172	0.65	9.38	20.57	68	
0948	155.05	176.8	6.65	1.174	0.59	9.49	20.59	70	
0958									Stop

Total Purge Volume: 202.8 (Gallons) / 59.33
Total Discharge: 3.42 (Casing Volumes)
Approx. Purge Rate: 2.6 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 0840 Purge time start: 0840 Stop: 0958
Meter: QED MP20, Oakton T-100

RECHARGE BEHAVIOR:
☒ Fast recharging
☐ Slow recharging (80% recharge did not occur after two hours)

WATER DISPOSAL

Purge water storage: polytank
Purge Water disposal: OU1 System-Battelle-JPL

WELL SAMPLING

Sample Depth in feet (BTOC): 230'

Original	*Duplicate*	*Blank*	*Other (Trip/Source/)*
Sample ID: MW-6	Sample ID: DUPE-7-3011	Type:	Type:
Sample Time: 0949	Sample Time: 0955	Sample ID:	Sample ID:
No. of Containers: Alpha - 5 CAS - 1	No. of Containers: Alpha - 5 CAS - 1	Sample Time:	Sample Time:
		No. of Containers:	No. of Containers:

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-7

Battelle
The Business of Innovation
505 King Avenue
Columbus, Ohio 43201

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 100006114
Navy Contract No:
Sampled By: David Loera
Date: 8-23-11
Weather: Sunny/Warm

PURGE VOLUME CALCULATION (casing volume):

(275' (TD feet) - 178.13' (WL feet) 96.87') X 4² (D inches) X 3 (# Vols) X 0.0408 = 189.71 (Calculated Purge Volume) Gallons

PURGE METHOD

☐ Bailer – Type: _____ X Pump – Type: 2" Grundfos

PUMP INTAKE SETTING

Depth in feet (BTOC): 265'

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (°C)	ORP (mV)	Comments
0844		Water	to	Surface					
0854	178.52	22	6.84	0.572	9.75	1.49	23.55	59	Flow Rate 2.1 GPM
0912	178.48	34.9	6.98	0.576	184	1.08	23.62	5	
0928	178.44	68.5	6.99	0.576	473	1.77	23.62	6	
0943	178.43	100	7.00	0.575	38.6	1.23	23.71	11	
1002	178.47	139.9	7.01	0.577	79.7	1.04	23.72	15	
1012	178.46	160.9	7.02	0.577	60.1	1.07	23.77	24	
1026	178.48	190.3	7.02	0.578	5.17	1.00	23.79	28	

Total Purge Volume: 195 (Gallons) / 63.24
Total Discharge: 3.08 (Casing Volumes)
Approx. Purge Rate: 2.1 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 0844 Purge time start: 0844 Stop 1038
Meters: QED MP20, Oakton T-100

RECHARGE BEHAVIOR:
☒ Fast recharging
☐ Slow recharging (80% recharge did not occur after two hours)

WATER DISPOSAL

Purge water storage: polytank
Purge Water disposal: OU1 System-Battelle-JPL

WELL SAMPLING

Sample Depth in feet (BTOC): 265'

Original	*Duplicate*	*Blank*	*Other (Trip/Source/)*
Sample ID: MW-7	Sample ID:	Type:	Type:
Sample Time: 1035	Sample Time:	Sample ID:	Sample ID:
No. of Containers: Alpha-7 CAS-1	No. of Containers:	Sample Time:	Sample Time:
		No. of Containers:	No. of Containers:

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-8

Battelle
The Business of Innovation
505 King Avenue
Columbus, Ohio 43201

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 100006114
Navy Contract No:
Sampled By: David Loera
Date: 8-24-11
Weather: Sunny/warm

PURGE VOLUME CALCULATION (casing volume):

(205' (TD feet) - 105.06 (WL feet)) X 4² (D inches) X 3 (# Vols) X 0.0408 = 195.72 (Calculated Purge Volume) Gallons

PURGE METHOD

☐ Bailer – Type: _____ X Pump – Type: 2" Grundfos

PUMP INTAKE SETTING

Depth in feet (BTOC): 195'

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (°C)	ORP (mV)	Comments
0938		Water	to	surface					Flow Rate 3.0 GPM
0945	105.31	21	6.80	0.302	0.43	3.48	17.06	96	
0957	105.33	57	7.05	0.303	0.33	3.63	17.05	102	
1009	105.33	93	7.11	0.297	0.35	3.66	17.06	105	
1024	105.33	138	7.13	0.295	0.27	3.85	17.07	106	
1035	105.33	171	7.15	0.294	0.25	3.89	17.07	105	
1044	105.33	198	7.15	0.299	0.23	3.86	17.08	103	

Total Purge Volume: 210 (Gallons) / 6524
Total Discharge: 3.22 (Casing Volumes)
Approx. Purge Rate: 3.0 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 0938 Purge time start: 0938 stop: 1055
Meters QED MP 20, Oakton T-100

RECHARGE BEHAVIOR:
☒ Fast recharging
☐ Slow recharging (80% recharge did not occur after two hours)

WATER DISPOSAL

Purge water storage: polytank
Purge Water disposal: OU1 System-Battelle-JPL

WELL SAMPLING

Sample Depth in feet (BTOC): 195'

Original	*Duplicate*	*Blank*	*Other (Trip/Source/)*
Sample ID: MW-8	Sample ID:	Type:	Type:
Sample Time: 1045	Sample Time:	Sample ID:	Sample ID:
No. of Containers: Alpha - 7, CAS - 1	No. of Containers:	Sample Time:	Sample Time:
		No. of Containers:	No. of Containers:

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-10

Battelle
The Business of Innovation
505 King Avenue
Columbus, Ohio 43201

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 100006114
Navy Contract No:
Sampled By: David Loerc
Date: 8-25-11
Weather: Sunny / very hot / clear

PURGE VOLUME CALCULATION (casing volume):

(155' - 57.0' 98') X 4² X 3 X 0.0408 = 191.92 Gallons

TD (feet) | WL (feet) | D (inches) | # Vols | Calculated Purge Volume

PURGE METHOD

☐ Bailer – Type: _____ **X** Pump – Type: 2" Grundfos

PUMP INTAKE SETTING

Depth in feet (BTOC): 140'

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (°C)	ORP (mV)	Comments
1229		Water	to	surface					Flow Rate 2.2 GPM
1238	57.04	19.8	6.82	0.345	2.24	2.98	19.22	114	
1255	57.07	57.2	6.88	0.342	1.09	2.36	19.24	109	
1307	57.10	83.6	6.87	0.343	0.13	0.72	19.28	80	
1316	57.12	103.4	6.87	0.343	0.11	0.20	19.26	81	
1332	57.10	138.6	6.87	0.343	0.00	1.40	19.29	83	
1343	57.10	162.8	6.86	0.345	0.01	0.51	19.27	94	
1355	57.10	189.2	6.87	0.342	0.01	0.01	19.26	94	
1400									stop

Total Purge Volume: 200 (Gallons) / 63.97
Total Discharge: 3.13 (Casing Volumes)
Approx. Purge Rate: 2.2 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1229 Purge time start: 1229 stop 1400
Meters (QED) MP20, Oakton T-100

RECHARGE BEHAVIOR:
☒ Fast recharging
☐ Slow recharging (80% recharge did not occur after two hours)

WATER DISPOSAL

Purge water storage: polytank
Purge Water disposal: OU1 System-Battelle-JPL

WELL SAMPLING

Sample Depth in feet (BTOC): 140'

Original	*Duplicate*	*Blank*	*Other (Trip/Source/)*
Sample ID: MW-10	Sample ID:	Type:	Type:
Sample Time: 1357	Sample Time:	Sample ID:	Sample ID:
No. of Containers: Alpha-5 CAS-1 MWH-2	No. of Containers:	Sample Time:	Sample Time:
		No. of Containers:	No. of Containers:

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-13

Battelle
The Business of Innovation
505 King Avenue
Columbus, Ohio 43201

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 100006114
Navy Contract No:
Sampled By: David Loera
Date: 8-25-11
Weather: Sunny / Warm

PURGE VOLUME CALCULATION (casing volume):

(235' - 150.83' (84.17)) X 4² X 3 X 0.0408 = 164.84 Gallons

TD (feet) | WL (feet) | D (inches) | # Vols | Calculated Purge Volume

PURGE METHOD

☐ Bailer – Type: _____ **X** Pump – Type: 2" Grundfos

PUMP INTAKE SETTING

Depth in feet (BTOC): 220'

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (°C)	ORP (mV)	Comments
0744		Water	to	Surface					Flow Rate 2.8 GPM
0751	151.93	19.6	6.65	0.495	0.20	10.53	21.48	128	
0803	151.93	53.2	6.83	0.497	0.02	10.65	21.51	139	
0815	151.93	86.8	6.86	0.496	0.02	10.65	21.52	136	
0825	151.93	114.8	6.87	0.497	0.03	10.84	21.53	135	
0834	151.93	140	6.87	0.495	0.02	10.66	21.53	136	
0841	151.93	159.6	6.87	0.496	0.02	10.61	21.53	137	
0848									Stop

Total Purge Volume: 179.2 (Gallons) / 54.95
Total Discharge: 3.26 (Casing Volumes)
Approx. Purge Rate: 2.8 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 0743 Purge time start: 0744 Stop 0848
Meters QED MP20 Oakton T-100

RECHARGE BEHAVIOR:
☒ Fast recharging
☐ Slow recharging (80% recharge did not occur after two hours)

WATER DISPOSAL

Purge water storage: polytank
Purge Water disposal: OU1 System-Battelle-JPL

WELL SAMPLING

Sample Depth in feet (BTOC): 220'

Original	*Duplicate*	*Blank*	*Other (Trip/Source/)*
Sample ID: MW-13	Sample ID:	Type:	Type:
Sample Time: 0843	Sample Time:	Sample ID:	Sample ID:
No. of Containers: Alpha-7 CAS-1	No. of Containers:	Sample Time:	Sample Time:
		No. of Containers:	No. of Containers:

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-15

Battelle
The Business of Innovation
505 King Avenue
Columbus, Ohio 43201

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 100006114
Navy Contract No:
Sampled By: David Lopez
Date: 8-29-11
Weather: Sunny/very hot

PURGE VOLUME CALCULATION (casing volume):

(74' (TD feet) - 30.29' 43.71 (WL feet)) X 4² (D (inches)) X 3 (# Vols) X 0.0408 = 85.60 (Calculated Purge Volume) Gallons

PURGE METHOD

☐ Bailer – Type: _____ **X** Pump – Type: 2" Grundfos

PUMP INTAKE SETTING

Depth in feet (BTOC): 54'

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (°C)	ORP (mV)	Comments
1409		water	to	surface					Flow Rate 4.6 GPM
1414	31.70	23	7.15	0.349	1.73	0.25	16.57	77	
1419	31.77	46	7.21	0.351	0.52	0.23	16.55	67	
1427	31.81	82.8	7.24	0.352	0.22	0.23	16.55	30	
1431									Stop

Total Purge Volume: 100 (Gallons) / 28.53
Total Discharge: 3.5 (Casing Volumes)
Approx. Purge Rate: 4.6 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1409 Purge time start: 1409 Stop: 1431
Motor: QED MP 20, Oakton T-100

RECHARGE BEHAVIOR:
☒ Fast recharging
☐ Slow recharging (80% recharge did not occur after two hours)

WATER DISPOSAL

Purge water storage: polytank
Purge Water disposal: OU1 System-Battelle-JPL

WELL SAMPLING

Sample Depth in feet (BTOC): 54

Original	*Duplicate*	*Blank*	*Other (Trip/Source/)*
Sample ID: MW-15	Sample ID: MW-15-MS/MSD	Type:	Type:
Sample Time: 1428	Sample Time: 1428	Sample ID:	Sample ID:
No. of Containers: Alpha - 1 CAS - 1	No. of Containers: Alpha - 1 CAS - 1	Sample Time:	Sample Time:
		No. of Containers:	No. of Containers:

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-16

Battelle
The Business of Innovation
505 King Avenue
Columbus, Ohio 43201

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 100006114
Navy Contract No:
Sampled By: David Loera
Date: 8-29-11
Weather: Sunny/hot/clear

PURGE VOLUME CALCULATION (casing volume):

(285' - 203.97) X 4² X 3 X 0.0408 = 158.69 Gallons

81.03

TD (feet) | WL (feet) | D (inches) | # Vols | Calculated Purge Volume

PURGE METHOD

☐ Bailer – Type: _____ **X** Pump – Type: 2" Grundfos

PUMP INTAKE SETTING

Depth in feet (BTOC): 253'

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (°C)	ORP (mV)	Comments
1130		Water	to	surface					Flow Rate 2.3 GPM
1139	-	20.7	7.09	0.589	0.38	0.42	23.89	88	
1152	-	50.6	7.18	0.591	0.25	0.07	23.88	82	
1208	-	87.4	7.18	0.592	0.21	0.09	23.87	76	
1229	-	135.7	7.18	0.592	0.18	0.05	23.82	66	
1239		158.7	7.18	0.592	0.00	0.03	23.68	88	
1245									stop

Total Purge Volume: 172.5 (Gallons) /5290
Total Discharge: 3.26 (Casing Volumes)
Approx. Purge Rate: 2.3 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1130 Purge time start: 1130 Stop
Motors: QED MP 20, Oakton T-100

RECHARGE BEHAVIOR:
☒ Fast recharging
☐ Slow recharging (80% recharge did not occur after two hours)

WATER DISPOSAL

Purge water storage: polytank
Purge Water disposal: OU1 System-Battelle-JPL

WELL SAMPLING

Sample Depth in feet (BTOC): 253'

Original	*Duplicate*	*Blank*	*Other (Trip/Source/)*
Sample ID: MW-16	Sample ID: MW-16-MS/MSD	Type:	Type:
Sample Time: 1240	Sample Time: 1240	Sample ID:	Sample ID:
No. of Containers: Alpha-7 CAS-1	No. of Containers: Alpha-5 CAS-1	Sample Time:	Sample Time:
		No. of Containers:	No. of Containers:

ORIGINAL FIELD RECORD

INSIGHT

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-3
Sampling Zone No.: 4 to 2
Depth (ft): ~~653~~, 558, 346, 252, ~~172~~
Beginning of Session: 13.97 psia
End of Session: 13.97 psia

Start Time: 1020
Finish Time: 1140

Date: 8/30/11
Page: 1 of 1

Water Pressure Inside Casing: —

Port #	Run #	Surface Function Checks							Position Sampler		Sample Collection Checks								Water Quality Parameters						
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Deactivate Set Arm Locate Port	Arm out	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)	Cond (mmhos)	Dissolved Oxygen	Temp. (oC)	ORP
4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	198.20	✓	209.99	✓	209.99	✓	✓	198.22	1041	5.80	3.15	48.1	4.55	21.3	225
3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	105.81	✓	124.70	✓	124.71	✓	✓	105.80	1102	6.04	1.91	48.8	4.31	21.6	198
2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	63.37	✓	84.14	✓	84.16	✓	✓	65.38	1127	6.19	11.9	57.6	4.21	22.1	222

Notes:

Total Volume: —

port 5: NOT SAMPLED port 4: CLEAR, SLIGHT ODOR port 3: CLEAR, STRONG ODOR

port 2: CLEAR, NO ODOR port 1: NOT SAMPLED

INSIGHT

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-4
Sampling Zone No.: 3 to 1
Depth (ft): ~~513~~, ~~392~~, 322, 240, 150
Beginning of Session: 13.99 psia
End of Session: 13.98 psia

Start Time: 0825
Finish Time: 0935

Date: 8/30/11
Page: 1 of 1

Water Pressure Inside Casing: —

Port #	Run #	Surface Function Checks: Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Position Sampler: Deactivate Set Arm Locate Port	Arm out	Sample Collection Checks: Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Water Quality Parameters: Time	PH	Turb. (NTU)	Cond (mmhos)	Dissolved Oxygen	Temp. (oC)	ORP
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	67.21	✓	124.82	✓	124.81	✓	✓	67.29	843	5.53	3.45	41.3	4.36	20.5	226
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	31.89	✓	89.75	✓	89.76	✓	✓	31.90	907	5.38	5.66	0.9	4.50	20.8	213
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.06	✓	56.21	✓	56.19	✓	✓	14.09	928	5.55	0.37	34.5	4.35	20.5	223

Notes:

port 5: NOT SAMPLED port 4: NOT SAMPLED port 3: CLEAR, NO ODOR

port 2: CLEAR, NO ODOR port 1: CLEAR, NO ODOR

Total Volume: —

INSIGHT

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-11
Sampling Zone No.: 4 to 1
Depth (ft): 639, 524, 429, 259, 149
Beginning of Session: 14.03 psia
End of Session: 14.01 psia

Start Time: 1130
Finish Time: 1335

Date: 09/07/11
Page: 1 of 1

Water Pressure Inside Casing: —

	Port #	Run #	Surface Function Checks: Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Position Sampler: Deactivate Set Arm Locate Port	Arm out	Sample Collection Checks: Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Water Quality Parameters: Time	PH	Turb. (NTU)	Cond (mmhos)	Dissolved Oxygen	Temp. (oC)	ORP
15/MSD	4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	186.74	✓	189.25	✓	189.20	✓	✓	188.75	1151	6.61	-0.18	22.5	6.62	25.6	229
	3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	147.73	✓	147.34	✓	147.25	✓	✓	147.70	1216	6.61	3.16	37.7	4.93	24.9	294
	2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	73.94	✓	76.42	✓	76.39	✓	✓	73.94	1238	6.63	3.98	49.6	4.87	24.8	305
4PE-06-1011	1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	29.07	✓	37.88	✓	37.86	✓	✓	29.08	1316	6.60	-0.40	57.7	5.08	28.2	335
	1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	25.46	✓	37.86	✓	37.84	✓	✓	25.44	—	6.84	-0.14	58.0	5.14	22.4	306

Notes:
port 5: NOT SAMPLED. port 4: CLEAR, STRONG ODOR port 3: CLEAR, SLIGHT ODOR
port 2: CLEAR, STRONG ODOR port 1: CLEAR, NO ODOR

Total Volume: —

INSIGHT

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-12
Sampling Zone No.: 5 to 1
Depth (ft): 548, 436, 323, 243, 140
Beginning of Session: 14.00 psia
End of Session: 14.03 psia

Start Time: 0840
Finish Time: 1050

Date: 09/07/11
Page: 1 of 1

Water Pressure Inside Casing: —

Port #	Run #	Surface Function Checks: Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Position Sampler: Deactivate Set Arm Locate Port	Arm out	Sample Collection Checks: Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Water Quality Parameters: Time	PH	Turb. (NTU)	Cond (mmhos)	Dissolved Oxygen	Temp. (oC)	ORP
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	218.07	✓	205.89	✓	205.84	✓	✓	218.09	910	5.43	0.61	45.3	5.24	22.7	290
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	169.30	✓	163.62	✓	163.58	✓	✓	169.31	928	5.64	0.33	49.0	4.37	22.4	232
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	121.02	✓	115.83	✓	115.84	✓	✓	121.02	951	5.87	0.44	43.5	4.71	22.3	252
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	86.06	✓	82.32	✓	82.32	✓	✓	86.06	1011	5.92	2.17	54.3	4.72	23.5	259
MS/MSD 1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	42.57	✓	44.12	✓	44.12	✓	✓	42.55	1042	6.14	17.0	43.7	4.50	26.2	254

Notes:
port 5: CLEAR, NO ODOR port 4: CLEAR, STRONG ODOR port 3: CLEAR, SLIGHT ODOR
port 2: CLEAR STRONG ODOR port 1: CLEAR, FAINT ODOR

EB: 1029

Total Volume: —

INSIGHT

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-14
Sampling Zone No.: 5 to 1
Depth (ft): 540, 456, 382, 277, 207
Beginning of Session: 13.97 psia
End of Session: 13.95 psia

Start Time: 0827
Finish Time: 1105

Date: 8/24/11
Page: 1 of 1

Water Pressure Inside Casing: —

Port #	Run #	Surface Function Checks: Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Position Sampler: Deactivate Set Arm Locate Port	Arm out	Sample Collection Checks: Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Water Quality Parameters: Time	PH	Turb. (NTU)	Cond (mmhos)	Dissolved Oxygen	Temp. (oC)	ORP
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	186.46	✓	186.90	✓	186.89	✓	✓	186.50	0914	5.68	0.03	37.7	4.50	22.7	153
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	149.81	✓	150.73	✓	150.73	✓	✓	149.81	0959	5.14	0.00	81.8	4.96	22.6	128
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	118.05	✓	118.71	✓	118.72	✓	✓	118.04	1002	5.39	1.93	99.9	4.55	23.2	151
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	72.24	✓	73.55	✓	73.56	✓	✓	72.24	1023	5.71	0.89	99.9	4.38	23.2	156
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	43.17	✓	44.13	✓	44.15	✓	✓	43.17	1054	6.00	1.87	99.9	4.74	24.3	274

wpc-02-3a11

Notes:
port 5: CLEAR, NO ODOR port 4: CLEAR, NO ODOR port 3: CLEAR, NO ODOR
port 2: CLEAR, NO ODOR port 1: CLEAR, NO ODOR

Total Volume: —

EB: 1040

INSIGHT

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-17
Sampling Zone No.: 4 to 2
Depth (ft): 726, 582, 468, 370, 250
Beginning of Session: 13.93 psia
End of Session: 13.96 psia

Start Time: 0820
Finish Time: 1005

Date: 8/25/11
Page: 1 of 1

Water Pressure Inside Casing: —

	Port #	Run #	Surface Function Checks: Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Position Sampler: Deactivate Set Arm Locate Port	Arm out	Sample Collection Checks: Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Water Quality Parameters: Time	PH	Turb. (NTU)	Cond (mmhos)	Dissolved Oxygen	Temp. (oC)	ORP
	4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	179.89	✓	179.34	✓	179.29	✓	✓	179.89	851	5.49	0.22	37.7	4.83	19.5	178
MS/MSD →	3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	130.99	✓	134.35	✓	134.42	✓	✓	131.02	923	5.44	11.4	68.4	5.17	21.2	160
	2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	87.81	✓	96.40	✓	96.41	✓	✓	87.80	953	5.47	0.65	56.3	4.13	20.4	140

Notes:

port 5: NOT SAMPLED port 4: CLEAR, SLIGHT ODOR port 3: CLEAR, FAINT ODOR

port 2: CLEAR, STRONG ODOR port 1: NOT SAMPLED.

Total Volume: —

EB: 0942

INSIGHT

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-18
Sampling Zone No.: 5 to 2
Depth (ft): 684, 564, 424, 330, ~~270~~
Beginning of Session: 13.95 psia
End of Session: 13.94 psia

Start Time: 1050
Finish Time: 1300

Date: 8/25/11
Page: 1 of 1

Water Pressure Inside Casing: —

	Port #	Run #	Surface Function Checks: Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Position Sampler: Deactivate Set Arm Locate Port	Arm out	Sample Collection Checks: Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Water Quality Parameters: Time	PH	Turb. (NTU)	Cond (mmhos)	Dissolved Oxygen	Temp. (oC)	ORP
	5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	164.22	✓	210.19	✓	210.17	✓	✓	164.24	1113	6.14	3.93	36.6	5.07	23.2	122
	4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	112.93	✓	159.77	✓	159.77	✓	✓	112.94	1144	6.28	1.19	448	5.75	23.8	143
	3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	51.40	✓	104.08	✓	104.05	✓	✓	51.40	1213	6.29	0.39	56.8	4.71	23.9	165
APE-03-3811	2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.13	✓	67.20	✓	67.16	✓	✓	14.15	1251	6.44	-0.03	57.8	5.44	25.9	200

Notes:

port 5: CLEAR, SLIGHT ODOR port 4: CLEAR, SLIGHT ODOR port 3: CLEAR, SLIGHT ODOR

port 2: CLEAR, FAINT ODOR port 1: NOT SAMPLED.

Total Volume: —

INSIGHT

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-19
Sampling Zone No.: 5 to 1
Depth (ft): 498, 444, 392, 314, 242
Beginning of Session: 13.98 psia
End of Session: 13.96 psia

Start Time: 0850
Finish Time: 1145

Date: 8/23/11
Page: 1 of 1

Water Pressure Inside Casing: NA

Port #	Run #	Surface Function Checks: Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Position Sampler: Deactivate Set Arm Locate Port	Arm out	Sample Collection Checks: Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Water Quality Parameters: Time	PH	Turb. (NTU)	Cond (mmhos)	Dissolved Oxygen	Temp. (oC)	ORP
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	172.35	✓	168.81	✓	186.90	✓	✓	172.37	0819	5.68	0.04	56.7	4.27	20.1	162
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	149.29	✓	145.43	✓	145.43	✓	✓	149.29	0958	5.98	0.08	59.7	4.92	21.2	137
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	126.29	✓	126.67	✓	126.67	✓	✓	126.69	1021	6.18	0.36	69.2	4.27	21.0	161
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	93.01	✓	92.95	✓	92.97	✓	✓	93.02	1052	6.20	5.27	99.1	4.17	23.5	152
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	61.03	✓	63.46	✓	63.49	✓	✓	61.07	1136	7.29	1.30	53.2	4.18	23.7	143

Notes:
port 5: CLEAR SLIGHT ODOR port 4: CLEAR NO ODOR port 3: CLEAR, NO ODOR
port 2: CLEAR, NO ODOR port 1: CLEAR NO ODOR

Total Volume: NA

EB: 1120
SB: 1129

INSIGHT

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-23
Sampling Zone No.: 4&2
Depth (ft): 542, 445, 319, 254, 174
Beginning of Session: 14.00 psia
End of Session: 13.97 psia

Start Time: 0920
Finish Time: 1100

Date: 8/26/11
Page: 1 of 1

Water Pressure Inside Casing: —

Port #	Run #	Surface Function Checks							Position Sampler	Arm out	Sample Collection Checks								Water Quality Parameters						
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Deactivate Set Arm Locate Port		Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)	Cond (mmhos)	Dissolved Oxygen	Temp. (oC)	ORP
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	162.23	✓	162.51	✓	167.50	✓	✓	162.27	0933	3.99	0.68	0.090	4.70	24.6	195
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	108.07	✓	116.08	✓	116.07	✓	✓	109.07	0955	5.58	0.57	40.0	4.45	24.1	190
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	79.86	✓	88.18	✓	88.18	✓	✓	79.82	1016	5.34	0.27	0.090	3.79	25.7	291
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	45.03	✓	55.93	✓	55.93	✓	✓	45.05	1043	6.46	21.8	49.8	4.76	26.2	192

Notes:
port 5: NOT SAMPLED port 4: CLEAR, SLIGHT ODOR port 3: CLEAR, STRONG ODOR
port 2: CLEAR, FAINT ODOR port 1: CLEAR, FAINT ODOR
EB: 1033

Total Volume: —

INSIGHT
Environmental Engineering And Construction Inc.

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-20
Sampling Zone No.: 5 to 1
Depth (ft): 900, 700, 562, 392, 230
Beginning of Session: 13.94 psia
End of Session: 13.97 psia

Start Time: 0820
Finish Time: 1045

Date: 09/02/11
Page: 1 of 1

Water Pressure Inside Casing: —

Port #	Run #	Surface Function Checks: Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Position Sampler: Deactivate Set Arm Locate Port	Arm out	Sample Collection Checks: Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Water Quality Parameters: Time	PH	Turb. (NTU)	Cond (mmhos)	Dissolved Oxygen	Temp. (oC)	ORP
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	321.82	✓	332.84	✓	332.83	✓	✓	321.89	846	5.47	0.44	28.3	4.39	18.0	79
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	235.74	✓	241.49	✓	241.44	✓	✓	235.75	920	6.10	-0.04	33.9	4.25	18.8	105
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	175.25	✓	177.86	✓	177.84	✓	✓	175.26	0947	6.17	0.21	37.3	4.01	19.0	92
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	101.49	✓	111.63	✓	111.64	✓	✓	101.49	1012	6.28	0.13	54.3	4.04	19.5	195
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	31.05	✓	42.09	✓	42.09	✓	✓	31.03	1033	5.95	8.36	55.0	4.00	19.6	179

Notes:
port 5: CLEAR, STRONG ODOR port 4: CLEAR, STRONG ODOR port 3: CLEAR, STRONG ODOR
port 2: CLEAR, STRONG ODOR port 1: CLEAR, STRONG ODOR

Total Volume: —

EB: 1023

INSIGHT

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-21
Sampling Zone No.: 5 to 1
Depth (ft): 372, 310, 240, 161, 90
Beginning of Session: 14.02 psia
End of Session: 13.99 psia

Start Time: 0839
Finish Time: 1110

Date: 09/01/11
Page: 1 of 1

Water Pressure Inside Casing: —

Port #	Run #	Surface Function Checks: Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Position Sampler: Deactivate Set Arm Locate Port	Arm out	Sample Collection Checks: Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Water Quality Parameters: Time	PH	Turb. (NTU)	Cond (mmhos)	Dissolved Oxygen	Temp. (oC)	ORP
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	127.95	✓	161.71	✓	161.71	✓	✓	128.01	0911	5.22	0.26	92.6	4.38	18.9	259
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	100.93	✓	134.85	✓	134.86	✓	✓	100.89	0933	5.55	1.32	85.5	4.15	19.4	198
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	70.79	✓	105.04	✓	105.04	✓	✓	70.79	0954	5.59	1.14	0.1	3.09	19.3	318
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	38.26	✓	70.95	✓	70.97	✓	✓	38.28	1031	5.81	0.74	0.999	4.54	19.9	345
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.09	✓	39.93	✓	39.94	✓	✓	14.12	1058	6.01	5.5	0.999	4.44	22.1	360

VS/MSD –

Notes:
port 5: CLEAR, STRONG ODOR port 4: CLEAR, SLIGHT ODOR port 3: CLEAR, NO ODOR
port 2: CLEAR, NO ODOR port 1: CLEAR, FAINT ODOR
EOS: 10:49

Total Volume: —

INSIGHT

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-22
Sampling Zone No.: 3 to 1
Depth (ft): 588, 467, 389, 329, 245
Beginning of Session: 13.94 psia
End of Session: 13.95 psia

Start Time: 0830
Finish Time: 1000

Date: 8/31/11
Page: 1 of 1

Water Pressure Inside Casing: —

Port #	Run #	Surface Function Checks: Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Position Sampler: Deactivate Set Arm Locate Port	Arm out	Sample Collection Checks: Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Water Quality Parameters: Time	PH	Turb. (NTU)	Cond (mmhos)	Dissolved Oxygen	Temp. (oC)	ORP
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	115.37	✓	118.40	✓	118.40	✓	✓	115.35	853	5.11	0.25	66.1	4.01	18.7	250
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	89.29	✓	92.36	✓	92.37	✓	✓	89.28	916	5.25	0.20	70.8	4.37	18.6	204
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	52.36	✓	57.23	✓	57.23	✓	✓	52.34	941	5.49	4.44	75.4	3.93	19.0	220

Notes:
port 5: NOT SAMPLED
port 4: NOT SAMPLED
port 3: CLEAR, SLIGHT ODOR
port 2: CLEAR, NO ODOR
port 1: CLEAR, NO ODOR

EB: 0932

Total Volume: —

INSIGHT

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-24
Sampling Zone No.: 4 to 1
Depth (ft): 678, 554, 435, 373, 279
Beginning of Session: 13.90 psia
End of Session: 13.96 psia

Start Time: 0900
Finish Time: 1120

Date: 8/29/11
Page: 1 of 1

Water Pressure Inside Casing: —

Port #	Run #	Surface Function Checks: Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Position Sampler: Deactivate Set Arm Locate Port	Arm out	Sample Collection Checks: Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Water Quality Parameters: Time	PH	Turb. (NTU)	Cond (mmhos)	Dissolved Oxygen	Temp. (oC)	ORP
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	179.75	✓	173.60	✓	173.61	✓	✓	179.73	0958	5.62	0.35	26.1	5.15	23.3	58
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	128.59	✓	125.21	✓	125.22	✓	✓	128.61	1020	5.76	0.43	39.2	4.10	23.6	130
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	101.70	✓	99.14	✓	99.13	✓	✓	101.70	1045	5.67	0.75	52.7	3.96	23.5	146
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	61.10	✓	61.90	✓	61.92	✓	✓	61.12	1111	5.67	3.73	68.4	4.21	24.5	165

Notes:
port 5: NOT SAMPLED. port 4: CLEAR, STRONG ODOR port 3: CLEAR, STRONG ODOR
port 2: CLEAR, STRONG ODOR port 1: CLEAR, STRONG ODOR

Total Volume: —

EB: 1059

INSIGHT

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-25
Sampling Zone No.: 5 to 1
Depth (ft): 713, 633, 503, 423, 358
Beginning of Session: 14.06 psia
End of Session: 14.09 psia

Start Time: 1030
Finish Time: 1245

Date: 09/06/11
Page: 1 of 1

Water Pressure Inside Casing: —

Port #	Run #	Surface Function Checks: Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Position Sampler: Deactivate Set Arm Locate Port	Arm out	Sample Collection Checks: Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Water Quality Parameters: Time	PH	Turb. (NTU)	Cond (mmhos)	Dissolved Oxygen	Temp. (oC)	ORP
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	213.51	✓	209.98	✓	209.99	✓	✓	213.51	1050	5.98	0.18	45.4	9.73	24.9	209
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	178.89	✓	174.28	✓	174.29	✓	✓	178.90	1117	6.02	1.02	72.7	9.91	24.1	301
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	122.51	✓	120.95	✓	120.95	✓	✓	122.53	1142	6.16	0.19	67.5	5.31	24.5	301
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	89.11	✓	88.79	✓	88.79	✓	✓	89. 11	1210	6.40	0.28	68.3	6.63	26.6	309
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	59.27	✓	61.38	✓	61.37	✓	✓	59.29	1231	6.51	13.8	84.3	5.41	25.4	314

Notes:

port 5: CLEAR, STRONG ODOR port 4: CLEAR, FAINT ODOR port 3: CLEAR, FAINT ODOR

port 2: CLEAR, SLIGHT ODOR port 1: CLEAR, NO ODOR

Total Volume: —

INSIGHT

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-26
Sampling Zone No.: 2 to 1
Depth (ft): 215, 135
Beginning of Session: 14.03 psia
End of Session: 14.01 psia

Start Time: 0845
Finish Time: 0955

Date: 09/06/11
Page: 1 of 1

Water Pressure Inside Casing: —

Port #	Run #	Function Checks							Position Sampler	Sample Collection Checks								Water Quality Parameters							
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Deactivate Set Arm Locate Port	Arm out	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)	Cond (mmhos)	Dissolved Oxygen	Temp. (oC)	ORP
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	73.47	✓	61.22	✓	61.21	✓	✓	73.49	917	5.50	10.68	49.5	4.57	23.0	274
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	38.59	✓	44.45	✓	44.44	✓	✓	38.57	936	5.44	0.31	99.6	7.88	22.8	384

Notes:

Total Volume: —

port 2: clear, strong odor port 1: clear, strong odor

GB: 0945

ATTACHMENT 5: WATER LEVEL MEASUREMENTS

This attachment contains water level measurements for the JPL relatively shallow standpipe monitoring wells (MW-5 through MW-8, MW-10, MW-13, MW-15, and MW-16) and the Westbay™ multiport wells (MW-3, MW-4, MW-11, MW-12, MW-14, and MW-17 through MW-26) obtained during the 3rd Quarter 2011. Water level measurements were recorded before the sampling event on August 20, 2011 for the relatively shallow standpipe monitoring wells and on August 22, 2011 for the Westbay™ multiport wells. Water level measurements were recorded after the sampling event on September 8, 2011 for the relatively shallow standpipe monitoring wells and the Westbay™ multiport wells. Water levels for the shallow wells were measured using a Solinst™ water level meter. In the deep multiport wells, the hydraulic head at each sampling port was measured with a Westbay™ MOSDAX sampling probe. Water level measurements were conducted by Insight Environmental, Inc.

INSIGHT
Environmental, Engineering and Construction, Inc.

3010 E. Miraloma Avenue
Anaheim, CA 92806
Telephone (714) 678-6700 Fax (714) 678-6711

Pre-Event Shallow Well Sounding Log

Project Name: JPL GW Monitoring 3Q11 | **Project No.: 4-73806**

WELL #	*DATE*	*TIME*	*DEPTH (FT.)*
MW-1	8/20/2011	1037	25.35
MW-5	8/20/2011	720	39.41
MW-6	8/20/2011	708	153.83
MW-7	8/20/2011	654	177.61
MW-8	8/20/2011	649	104.36
MW-9	8/20/2011	1033	18.10
MW-10	8/20/2011	715	56.26
MW-13	8/20/2011	645	150.04
MW-15	8/20/2011	702	30.55
MW-16	8/20/2011	657	202.40

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 8/22/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: sunny and hot

Well ID: MW-3
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay
Elevation of Datum (ft. + MSL): 1,100.34

Ambient Readings	Start	Finish
Time	1047	1123
Pressure (psia)	14.10	14.10
Temperature (°C)	21.84	18.92

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	653	237.17	251.76	237.18	22.10	1113		
							104.72	995.62
4	558	195.92	210.70	195.93	22.68	1115		
							104.44	995.90
3	346	103.77	125.48	103.78	22.37	1117		
							89.05	1011.29
2	252	62.94	85.04	62.95	21.69	1119		
							88.34	1012.00
1	172	28.20	55.49	28.19	20.54	1121		
							76.51	1023.83

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 8/22/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (ft. +MSL): 1,082.84
Weather: sunny and hot

Well ID: MW-4
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1300	1310
Pressure (psia)	13.98	14.08
Temperature (°C)	23.60	20.58

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	513	148.22	208.10	148.21	23.43	1302		
							65.17	1017.67
4	392	95.55	155.79	95.56	23.02	1304		
							64.84	1018.00
3	322	65.13	125.47	65.15	22.29	1305		
							64.79	1018.05
2	240	29.38	90.51	29.40	21.86	1306		
							63.45	1019.39
1	150	14.13	57.18	14.17	21.25	1308		
							50.34	1032.50

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 8/22/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: sunny and hot

Well ID: MW-11
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay
Elevation of Datum (Ft. + MSL): 1,139.30

Ambient Readings	Start	Finish
Time	1015	1025
Pressure (psia)	14.10	14.14
Temperature (°C)	22.48	18.67

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	639	235.98	229.67	235.96	21.23	1017		
							141.68	997.62
4	524	186.48	190.54	186.48	21.60	1019		
							116.95	1022.35
3	429	145.03	148.73	145.59	21.26	1021		
							118.41	1020.89
2	259	72.00	78.00	72.00	20.39	1023		
							111.58	1027.72
1	149	24.72	39.20	24.73	19.31	1024		
							91.09	1048.21

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 8/22/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,102.14
Weather: sunny and hot

Well ID: MW-12
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1315	1325
Pressure (psia)	14.06	14.07
Temperature (°C)	22.29	18.01

Screen No.	Depth (Ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	548	216.79	207.22	216.78	21.29	1317		
							102.38	999.76
4	436	168.14	164.99	168.14	21.49	1319		
							87.80	1014.34
3	323	118.96	117.30	118.95	20.91	1321		
							84.83	1017.31
2	243	84.10	83.94	84.14	19.58	1323		
							81.79	1020.35
1	140	39.19	46.15	39.22	18.82	1324		
							65.97	1036.17

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 8/22/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,173.47
Weather: sunny and hot

Well ID: MW-14
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	0904	917
Pressure (psia)	14.11	14.07
Temperature (°C)	21.38	19.61

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	540	184.69	187.49	184.73	21.11	0907		
							140.01	1033.46
4	456	148.21	151.27	148.19	21.31	0909		
							139.57	1033.90
3	382	115.98	119.25	116.00	21.07	0911		
							139.44	1034.03
2	277	70.33	74.05	70.30	20.50	0913		
							138.72	1034.75
1	207	39.82	44.56	39.83	20.01	0915		
							136.75	1036.72

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 8/22/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,191.21
Weather: sunny and hot

Well ID: MW-17
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1157	1228
Pressure (psia)	14.10	14.08
Temperature (°C)	20.96	16.26

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	726	241.26	245.10	241.31	20.11	1219		
							193.08	998.13
4	582	178.97	179.63	178.96	20.47	1221		
							200.12	991.09
3	468	129.53	134.56	129.50	19.72	1223		
							190.10	1001.11
2	370	86.99	95.24	86.98	18.82	1225		
							182.81	1008.40
1	250	34.88	50.06	34.86	17.75	1227		
							167.04	1024.17

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 8/22/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,225.41
Weather: sunny and hot

Well ID: MW-18
Probe Type: Westbay
Serial No.:
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1338	1348
Pressure (psia)	13.99	14.00
Temperature (°C)	21.94	17.36

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	684	162.52	210.47	162.54	21.69	1340		
							230.72	994.69
4	564	110.39	159.58	110.41	21.59	1342		
							228.12	997.29
3	424	49.50	103.73	49.49	19.81	1344		
							216.97	1008.44
2	330	14.16	67.48	14.15	18.92	1346		
							206.60	1018.81
1	270	14.12	43.01	14.12	18.23	1347		
							203.05	1022.36

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 8/22/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (ft. +MSL): 1,142.94
Weather: sunny and hot

Well ID: MW-19
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1135	1143
Pressure (psia)	14.10	14.10
Temperature (°C)	22.47	17.58

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	498	171.60	168.73	171.59	21.08	1137		
							141.27	1001.67
4	444	148.17	145.39	148.17	20.83	1138		
							141.11	1001.83
3	392	125.63	126.68	125.61	20.50	1139		
							132.28	1010.66
2	314	91.78	92.99	91.78	19.38	1140		
							132.00	1010.94
1	242	60.54	63.56	60.53	19.15	1142		
							127.90	1015.04

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 8/22/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,165.05
Weather: sunny and hot

Well ID: MW-20
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1357	1411
Pressure (psia)	14.00	14.07
Temperature (°C)	22.91	17.65

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	900	320.81	333.57	320.82	22.12	1400		
							162.75	1002.30
4	700	234.20	242.33	234.20	22.76	1403		
							173.24	991.81
3	562	174.41	181.48	174.41	21.66	1405		
							175.62	989.43
2	392	101.66	113.40	100.70	20.42	1407		
							162.68	1002.37
1	230	30.30	43.70	30.33	18.72	1408		
							161.48	1003.57

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 8/22/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,059.10
Weather: sunny and hot

Well ID: MW-21
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	0926	0936
Pressure (psia)	14.14	14.12
Temperature (°C)	20.45	19.29

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	372	125.74	162.25	125.75	20.46	928		
							30.31	1028.79
4	310	98.78	135.40	98.82	20.52	0930		
							30.25	1028.85
3	240	68.75	105.60	68.76	20.27	0932		
							29.00	1030.10
2	161	34.39	71.59	34.90	19.82	0934		
							28.46	1030.64
1	90	14.20	40.67	14.18	19.47	0935		
							28.80	1030.30

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena — Well ID: MW-22
Project No: 4-73806 — Probe Type: Westbay
Date: 8/22/11 — Serial No.: 2508
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC — Casing Size/Type: 1.5" Westbay
Elevation of Datum (Ft. + MSL): 1,176.98
Weather: clear and cool

Ambient Readings	Start	Finish
Time	0845	0858
Pressure (psia)	14.10	14.09
Temperature (°C)	20.57	20.45

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	588	200.64	200.50	200.63	21.06	848		
							157.98	1019.00
4	467	148.29	150.00	148.26	21.62	0850		
							153.48	1023.50
3	389	114.44	119.07	114.44	21.41	0852		
							146.83	1030.15
2	329	88.45	93.05	88.44	21.22	0854		
							146.86	1030.12
1	245	51.56	58.07	51.57	20.89	0856		
							143.56	1033.42

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 8/22/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: clear and cool

Well ID: MW-23
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay
Elevation of Datum (Ft. + MSL): 1,108.84

Ambient Readings	Start	Finish
Time	805	0818
Pressure (psia)	14.06	14.14
Temperature (°C)	21.01	19.86

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	542	203.76	209.95	203.76	21.33	0808		
							90.08	1018.76
4	445	161.76	168.03	161.77	21.38	0810		
							89.79	1019.05
3	319	107.17	116.62	107.20	20.04	0812		
							82.39	1026.45
2	254	78.99	88.70	79.02	20.14	0814		
							81.81	1027.03
1	174	45.17	60.27	45.15	20.00	0816		
							67.39	1041.45

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 8/22/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,200.94
Weather: sunny and hot

Well ID: MW-24
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	0952	1004
Pressure (psia)	14.08	14.07
Temperature (°C)	21.09	21.67

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	678	232.99	225.08	232.97	21.86	0954		
							191.22	1009.72
4	554	179.28	174.27	179.29	22.06	0956		
							184.44	1016.50
3	435	127.78	125.73	127.72	21.94	0958		
							177.42	1023.52
2	373	100.88	99.81	100.87	21.74	1000		
							175.22	1025.72
1	279	60.15	62.76	60.16	21.67	1002		
							166.70	1034.24

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 8/22/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (ft. + MSL): 934.52
Weather: sunny and hot

Well ID: MW-25
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1423	1438
Pressure (psia)	14.12	14.15
Temperature (°C)	23.46	20.09

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	713	211.39	209.92	211.32	22.56	1429		
							261.29	673.23
4	633	176.85	174.19	176.84	22.56	1431		
							263.72	670.80
3	503	120.60	120.89	120.61	22.10	1433		
							256.68	677.84
2	423	85.89	88.72	85.89	21.28	1435		
							250.90	683.62
1	358	57.62	61.31	57.62	20.81	1436		
							249.13	685.39

INSIGHT, Inc.
Piezometric Pressure/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 8/22/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (ft. + MSL): 1,059.08
Weather: sunny and hot

Well ID: MW-26
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time		
Pressure (psia)		
Temperature (°C)		

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
2	215							
							#DIV/0!	#DIV/0!
1	135							
							#DIV/0!	#DIV/0!

WELL BLOCKED BY BUS- COULD NOT RECORD MEASUREMENTS

INSIGHT
Environmental, Engineering and Construction, Inc.

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Anaheim, CA 92806
Telephone (714) 678-6700 Fax (714) 678-6711

Post-Event Shallow Well Sounding Log

Project Name: JPL GW Monitoring 3Q11 | **Project No.: 4-73806**

WELL #	*DATE*	*TIME*	*DEPTH (FT.)*
MW-1	9/8/2011	942	25.20
MW-5	9/8/2011	627	43.80
MW-6	9/8/2011	617	155.48
MW-7	9/8/2011	607	182.14
MW-8	9/8/2011	559	108.97
MW-9	9/8/2011	938	17.72
MW-10	9/8/2011	624	60.07
MW-13	WELL BLOCKED BY VEHICLE ALL DAY		
MW-15	9/8/2011	603	30.46
MW-16	9/8/2011	612	206.05

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 9/8/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: clear and hot

Well ID: MW-3
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay
Elevation of Datum (ft. + MSL): 1,100.34

Ambient Readings	Start	Finish
Time	0953	1003
Pressure (psia)	14.04	14.10
Temperature (°C)	25.54	19.21

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	653	237.05	250.32	237.03	23.81	0955		
							107.90	992.44
4	558	195.82	209.29	195.82	23.70	0957		
							107.56	992.78
3	346	103.67	123.95	103.73	23.07	0959		
							92.44	1007.90
2	252	62.83	83.31	62.85	21.88	1001		
							92.19	1008.15
1	172	28.05	53.50	28.08	20.72	1002		
							80.97	1019.37

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 9/8/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: clear and hot

Well ID: MW-4
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay
Elevation of Datum (ft. +MSL): 1,082.84

Ambient Readings	Start	Finish
Time	1255	1305
Pressure (psia)	14.02	14.08
Temperature (°C)	25.57	20.58

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	513	148.25	206.63	148.27	24.67	1257		
							68.65	1014.19
4	392	95.61	154.29	95.79	23.85	1259		
							68.40	1014.44
3	322	65.17	123.97	65.14	23.01	1301		
							68.35	1014.49
2	240	29.43	88.89	29.45	22.10	1303		
							67.27	1015.57
1	150	14.17	55.20	14.15	21.22	1304		
							55.00	1027.84

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 9/8/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: clear and hot

Well ID: MW-11
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay
Elevation of Datum (Ft. + MSL): 1,139.30

Ambient Readings	Start	Finish
Time	0920	0930
Pressure (psia)	14.05	14.09
Temperature (°C)	22.79	18.58

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	639	235.67	228.24	235.66	21.35	0922		
							144.86	994.44
4	524	186.14	189.24	186.19	21.58	0923		
							119.84	1019.46
3	429	145.31	147.30	145.32	21.19	0925		
							121.59	1017.71
2	259	71.66	76.33	71.71	20.37	0926		
							115.32	1023.98
1	149	24.37	37.81	24.37	19.35	0928		
							94.19	1045.11

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 9/8/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,102.14
Weather: clear and hot

Well ID: MW-12
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1314	1324
Pressure (psia)	14.05	14.07
Temperature (°C)	25.72	18.40

Screen No.	Depth (Ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	548	216.41	205.73	216.43	22.77	1316		
							105.79	996.35
4	436	167.27	163.49	167.78	22.53	1318		
							91.24	1010.90
3	323	118.60	115.69	118.61	21.74	1320		
							88.52	1013.62
2	243	83.70	82.18	83.77	20.49	1322		
							85.82	1016.32
1	140	38.85	44.00	38.87	19.70	1323		
							70.91	1031.23

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 9/8/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,173.47
Weather: clear and hot

Well ID: MW-14
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	0811	0822
Pressure (psia)	14.02	14.04
Temperature (°C)	21.00	19.28

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	540	185.55	186.54	185.58	20.95	0813		
							142.00	1031.47
4	456	148.99	151.37	149.04	21.17	0815		
							139.13	1034.34
3	382	116.85	118.35	116.87	20.52	0817		
							141.31	1032.16
2	277	71.11	73.07	71.14	20.10	0819		
							140.77	1032.70
1	207	40.65	43.55	40.63	19.48	0821		
							138.87	1034.60

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 9/8/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,191.21
Weather: clear and hot

Well ID: MW-17
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1043	1055
Pressure (psia)	13.99	14.03
Temperature (°C)	23.18	16.80

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	726	241.20	243.50	241.21	21.77	1045		
							196.52	994.69
4	582	178.87	178.02	178.90	21.42	1047		
							203.58	987.63
3	468	129.45	132.84	129.47	20.48	1049		
							193.81	997.40
2	370	86.93	93.47	86.94	19.42	1051		
							186.64	1004.57
1	250	34.76	47.89	34.75	18.46	1053		
							171.79	1019.42

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 9/8/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,225.41
Weather: clear and hot

Well ID: MW-18
Probe Type: Westbay
Serial No.:
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1105	1117
Pressure (psia)	14.01	14.01
Temperature (°C)	21.77	17.54

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	684	162.40	208.95	162.38	21.68	1107		
							234.27	991.14
4	564	110.28	157.95	110.29	21.66	1109		
							231.93	993.48
3	424	49.42	101.89	49.44	20.88	1111		
							221.26	1004.15
2	330	14.20	65.39	14.19	19.48	1113		
							211.47	1013.94
1	270	14.14	40.80	14.14	18.55	1115		
							208.20	1017.21

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Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 9/8/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (ft. +MSL): 1,142.94
Weather: clear and hot

Well ID: MW-19
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1020	1028
Pressure (psia)	14.05	14.07
Temperature (°C)	22.51	17.96

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	498	171.48	167.26	171.56	20.90	1022		
							144.54	998.40
4	444	148.07	143.93	148.09	20.35	1023		
							144.37	998.57
3	392	125.55	125.32	125.56	20.10	1024		
							135.30	1007.64
2	314	91.68	91.57	91.70	19.85	1025		
							135.16	1007.78
1	242	60.38	62.05	60.41	19.45	1026		
							131.26	1011.68

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 9/8/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,165.05
Weather: clear and hot

Well ID: MW-20
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1124	1140
Pressure (psia)	13.99	14.04
Temperature (°C)	21.89	17.67

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	900	320.66	332.62	320.69	22.22	1130		
							164.92	1000.13
4	700	234.04	241.41	234.07	22.70	1133		
							175.34	989.71
3	562	174.21	175.24	174.28	22.04	1135		
							190.00	975.05
2	392	100.57	110.82	100.58	20.62	1137		
							168.61	996.44
1	230	30.21	41.39	30.20	18.48	1138		
							166.79	998.26

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 9/8/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,059.10
Weather: clear and hot

Well ID: MW-21
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	0832	0840
Pressure (psia)	14.07	14.09
Temperature (°C)	20.96	19.13

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	372	126.56	198.17	126.57	20.64	0834		
							-52.72	1111.82
4	310	98.71	134.38	98.70	20.50	0835		
							32.44	1026.66
3	240	68.69	104.57	68.69	20.18	0836		
							31.22	1027.88
2	161	34.27	70.49	34.28	19.63	0838		
							30.84	1028.26
1	90	14.18	39.48	14.17	19.27	0839		
							31.38	1027.72

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 9/8/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: clear and hot

Well ID: MW-22
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay
Elevation of Datum (Ft. + MSL): 1,176.98

Ambient Readings	Start	Finish
Time	0747	0756
Pressure (psia)	14.01	14.04
Temperature (°C)	20.87	20.24

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	588	200.62	199.14	200.62	21.55	0749		
							160.91	1016.07
4	467	148.23	148.71	148.23	21.91	0751		
							156.25	1020.73
3	389	114.44	117.79	114.44	21.60	0753		
							149.58	1027.40
2	329	88.44	91.76	88.42	21.38	0754		
							149.63	1027.35
1	245	51.50	56.58	51.52	20.65	0755		
							146.79	1030.19

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 9/8/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,108.84
Weather: clear and hot

Well ID: MW-23
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	0727	0738
Pressure (psia)	14.05	14.08
Temperature (°C)	22.57	20.42

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	542	203.69	208.64	203.70	21.97	0729		
							93.08	1015.76
4	445	161.76	166.72	161.73	22.02	0731		
							92.79	1016.05
3	319	107.15	115.24	107.14	21.66	0733		
							85.55	1023.29
2	254	79.00	87.28	78.96	21.21	0735		
							85.06	1023.78
1	174	44.20	54.84	44.21	20.81	0737		
							79.90	1028.94

INSIGHT, Inc.
Piezometric Pressures/Levels
Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 9/8/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,200.94
Weather: clear and hot

Well ID: MW-24
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	0900	0912
Pressure (psia)	14.01	14.07
Temperature (°C)	21.85	21.73

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	678	232.88	223.66	232.88	22.42	0902		
							194.34	1006.60
4	554	179.20	172.91	179.22	22.40	0904		
							187.42	1013.52
3	435	127.65	124.42	127.67	22.08	0906		
							180.28	1020.66
2	373	100.78	98.23	100.78	21.96	0908		
							178.70	1022.24
1	279	60.05	60.76	60.03	21.74	0910		
							171.15	1029.79

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73806
Date: 9/8/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (ft. + MSL): 934.52
Weather: clear and hot

Well ID: MW-25
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1205	1216
Pressure (psia)	14.14	14.18
Temperature (°C)	25.15	20.30

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	713	210.91	209.99	210.92	23.69	1208		
							261.17	673.35
4	633	176.46	174.29	176.48	22.71	1209		
							263.53	670.99
3	503	120.25	120.97	120.26	22.34	1211		
							256.54	677.98
2	423	85.54	88.82	85.53	21.45	1213		
							250.71	683.81
1	358	57.28	61.41	57.25	20.99	1215		
							248.95	685.57

INSIGHT, Inc.
Piezometric Pressure/Levels

Field Data Sheet for Multi-Port Monitoring Wells

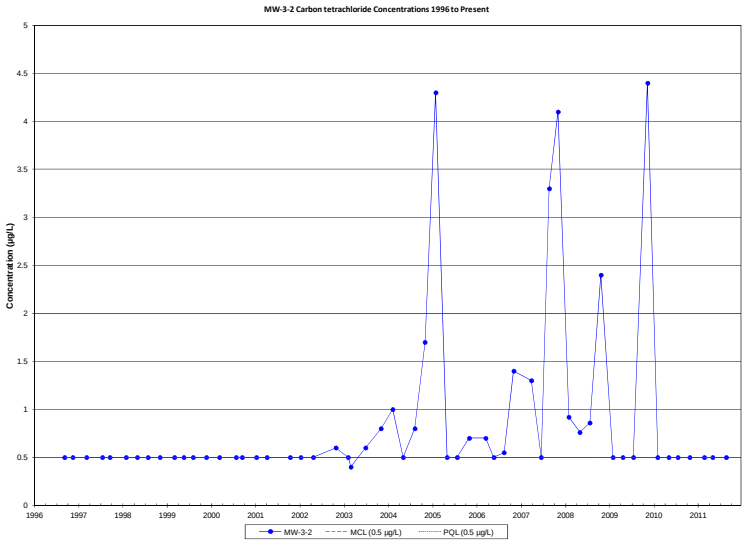
Project Name: JPL Pasadena
Project No: 4-73806
Date: 9/8/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: clear and hot

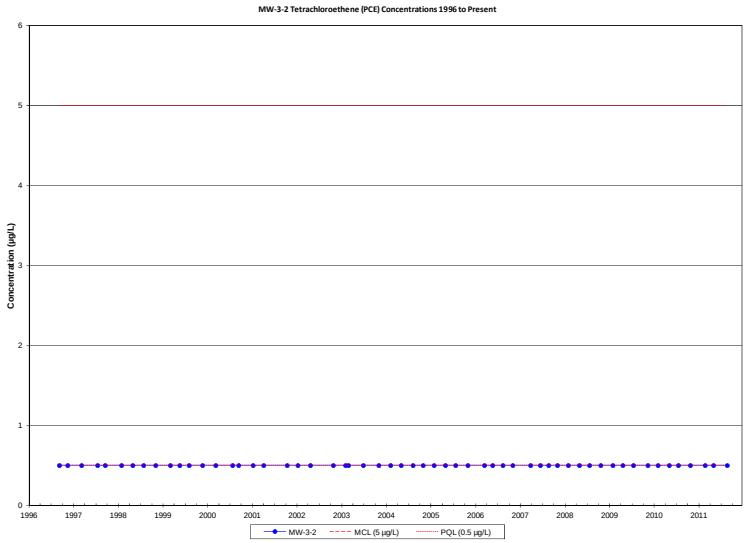
Well ID: MW-26
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay
Elevation of Datum (ft. + MSL): 1,059.08

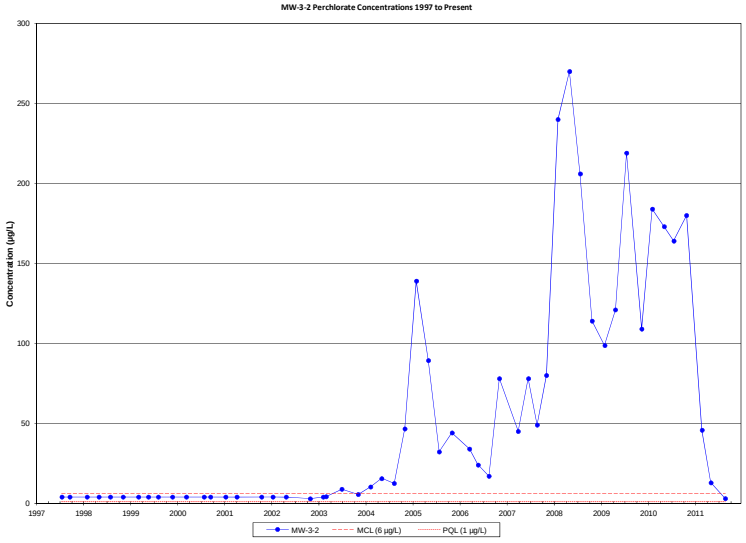
Ambient Readings	Start	Finish
Time	1231	1238
Pressure (psia)	14.05	14.09
Temperature (°C)	23.75	20.45

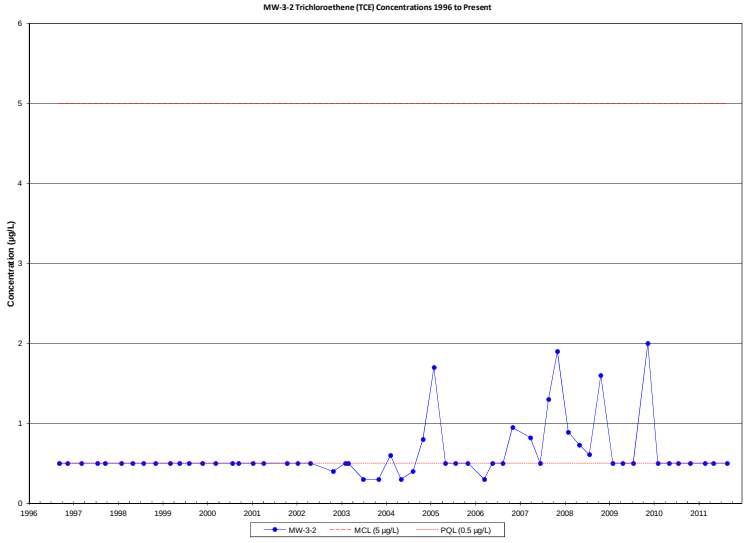
Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
2	215	71.38	81.08					
				71.40	22.50	1233		
							60.36	998.72
1	135	36.57	44.39					
				36.59	21.72	1235		
							65.01	994.07

ATTACHMENT 6: TIME SERIES PLOTS

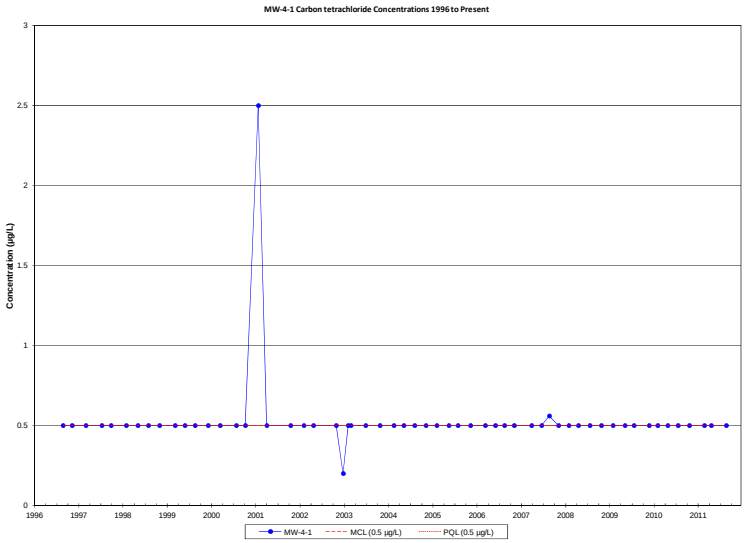


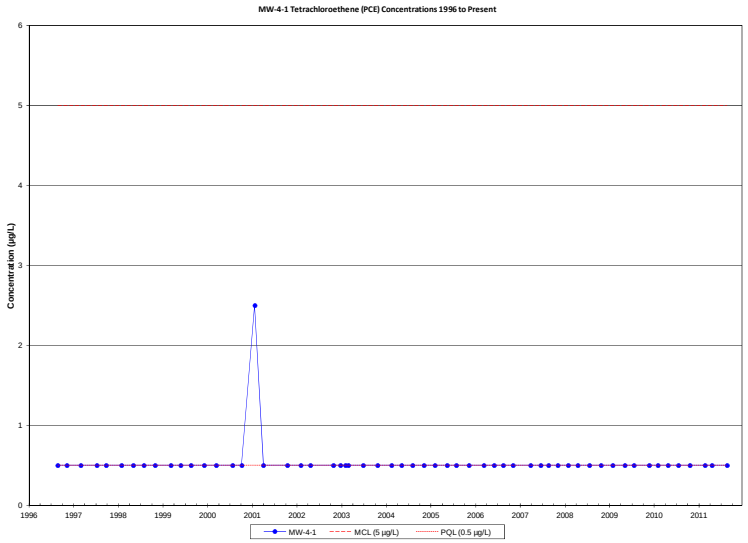


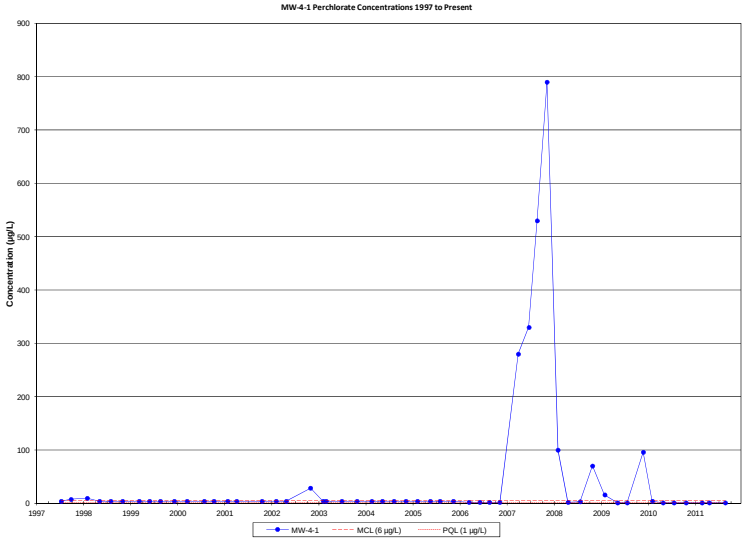


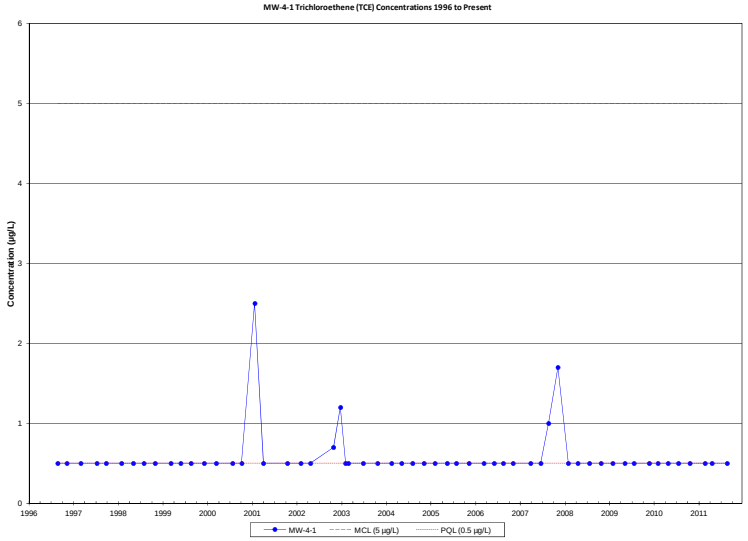


VOCs and Perchlorate Time Series Plots for MW-3-2

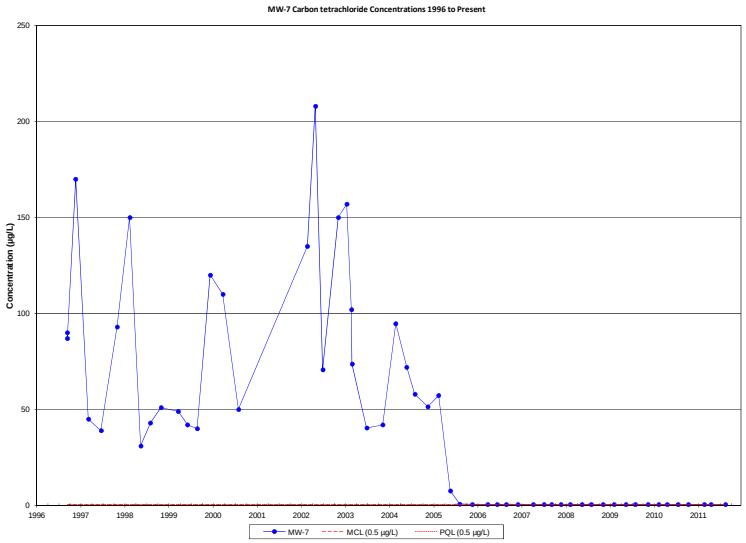


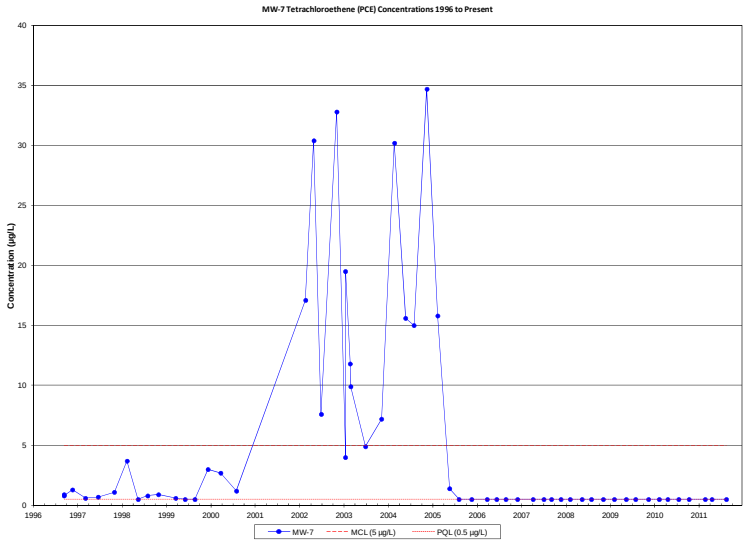


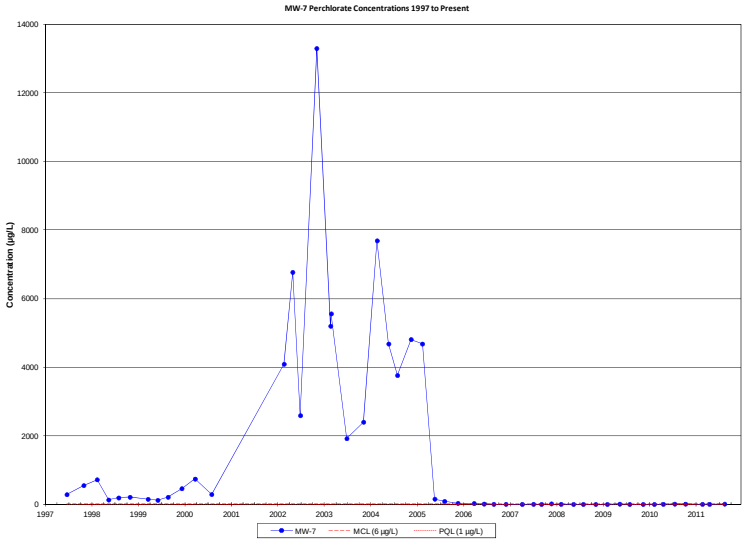


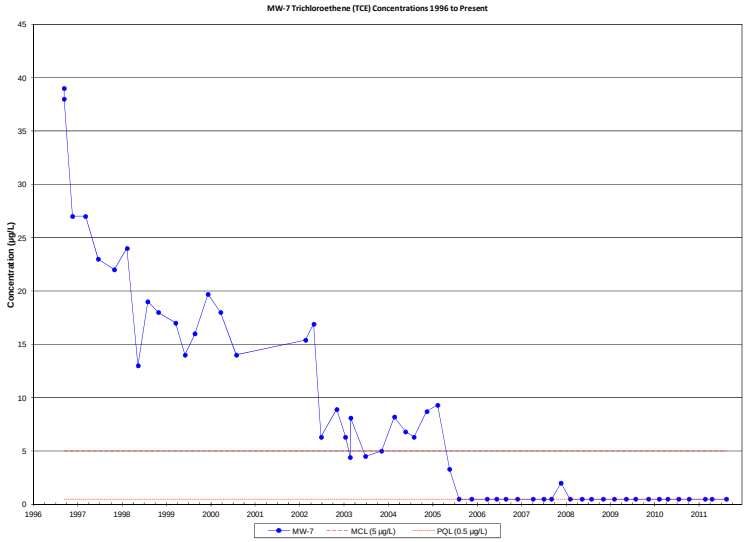


VOCs and Perchlorate Time Series Plots for MW-4-1

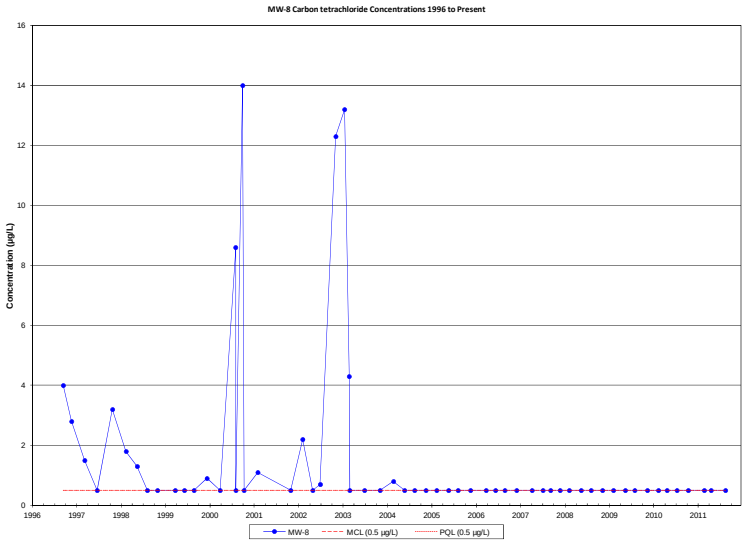


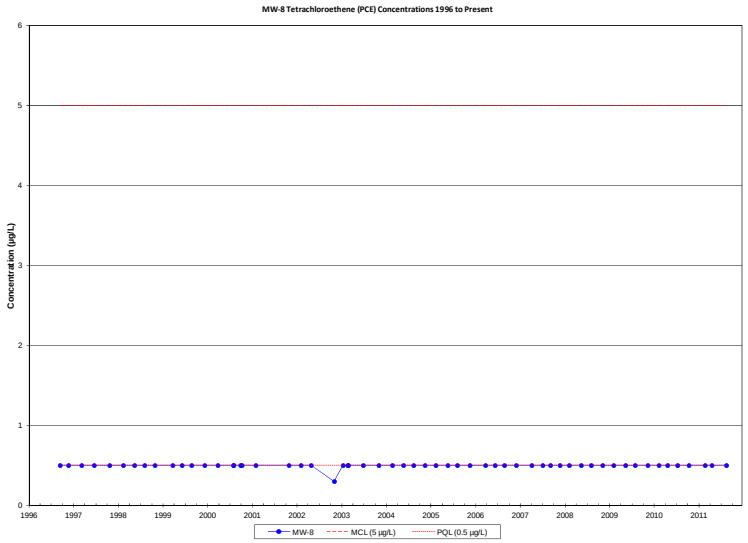


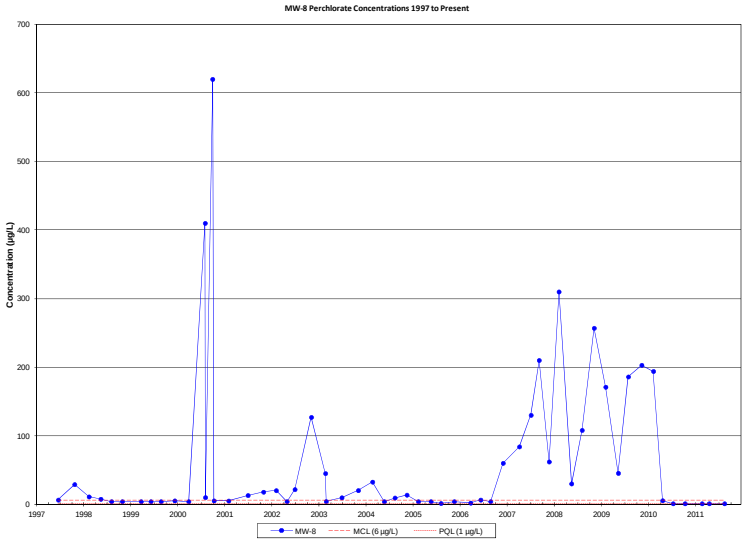


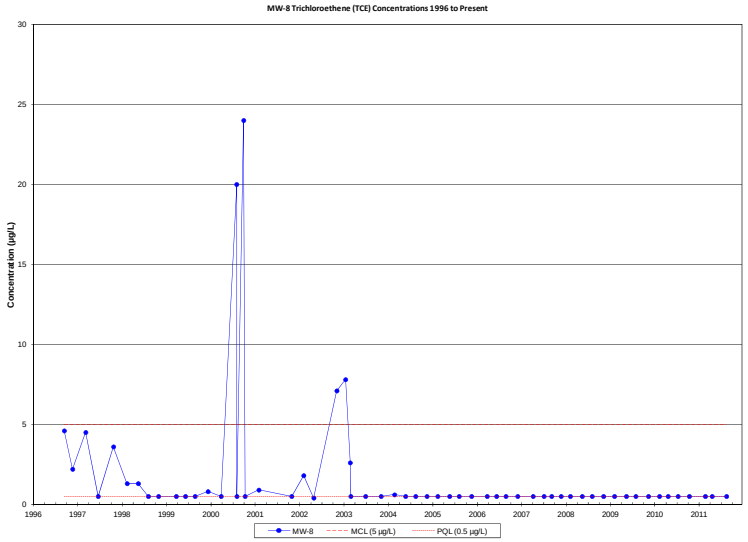


VOCs and Perchlorate Time Series Plots for MW-7

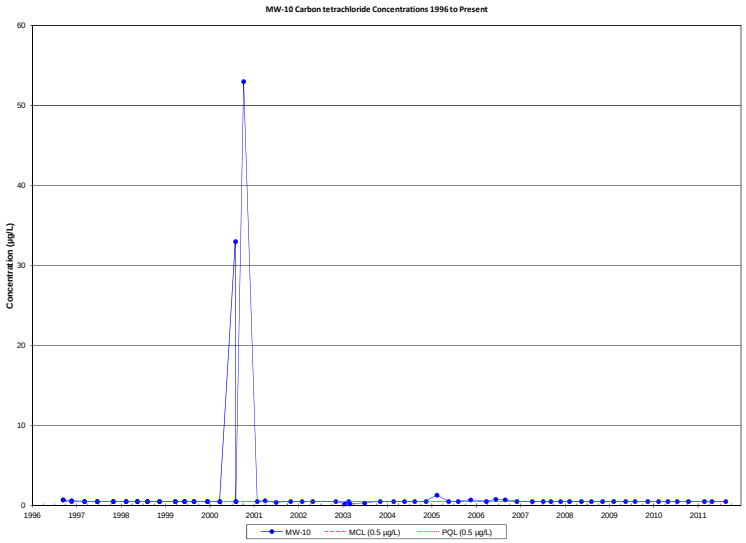


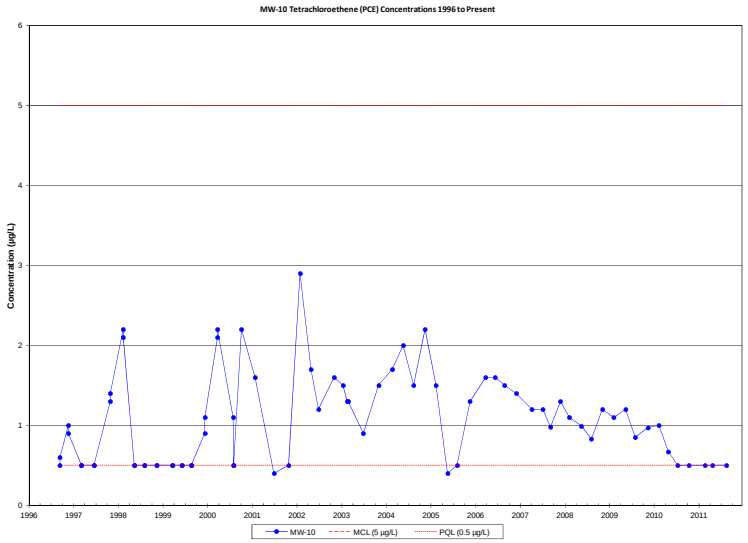


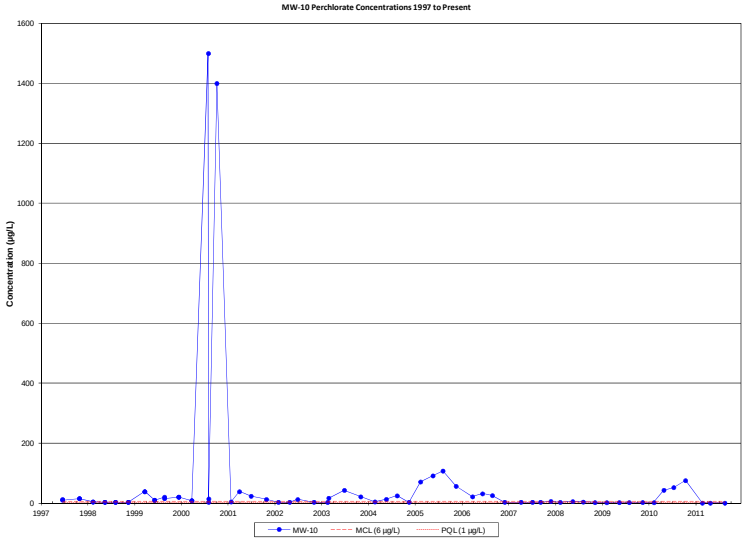


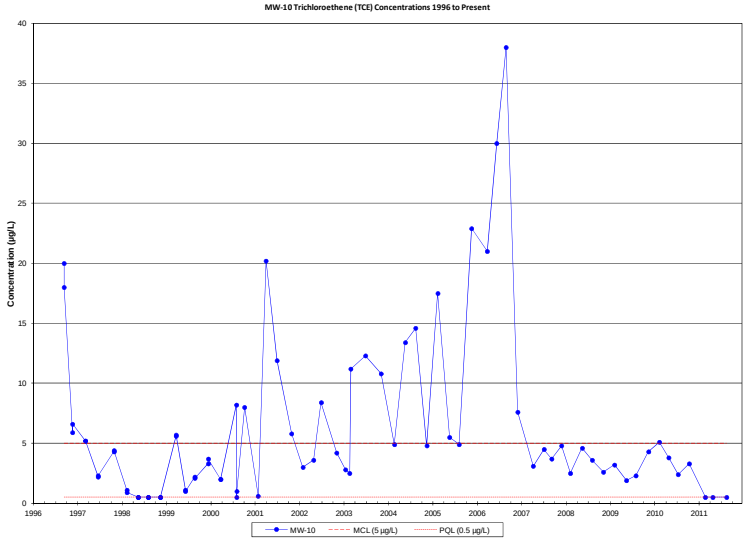


VOCs and Perchlorate Time Series Plots for MW-8

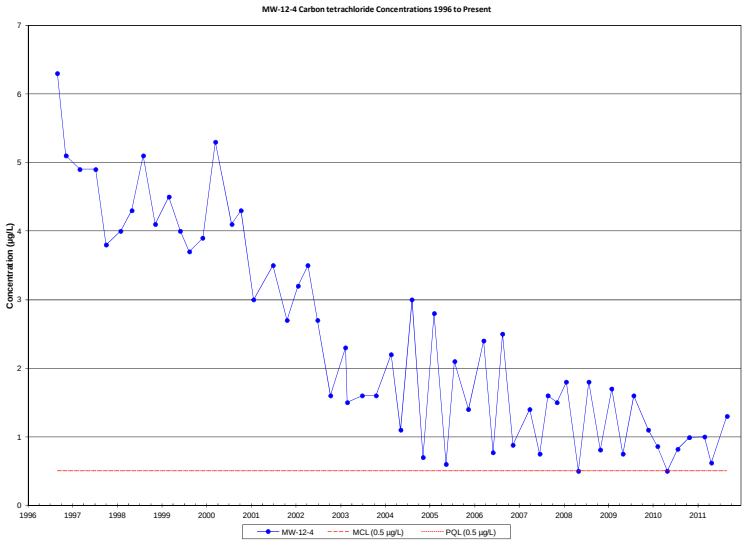


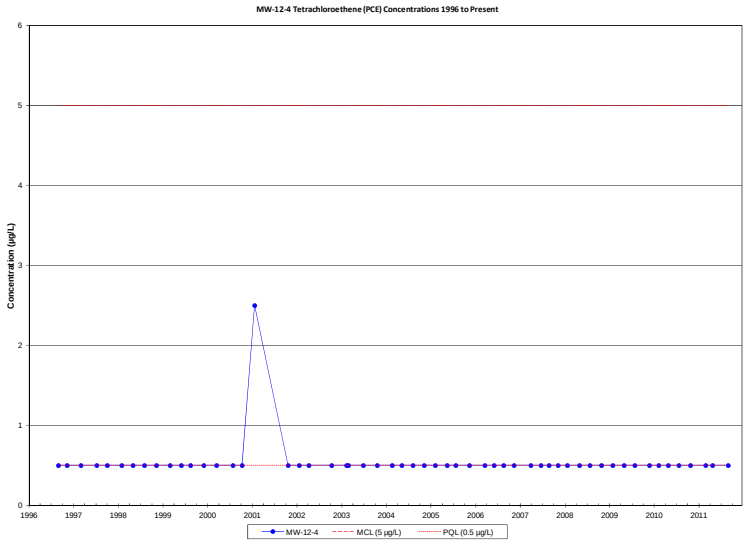


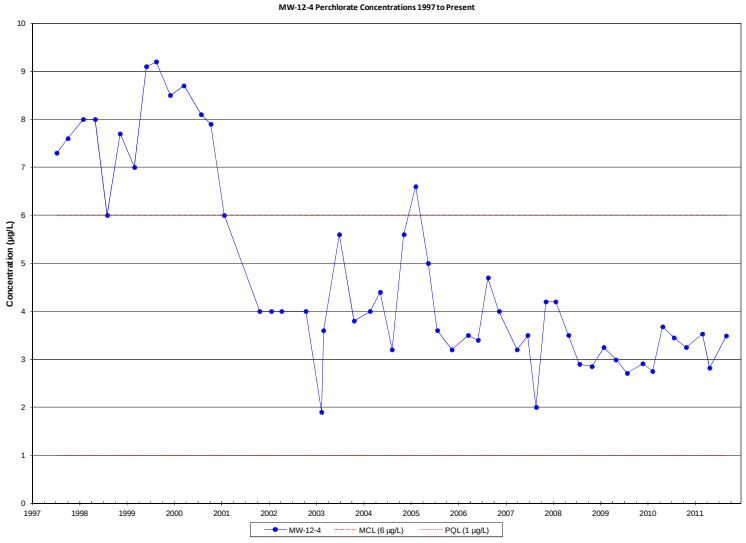


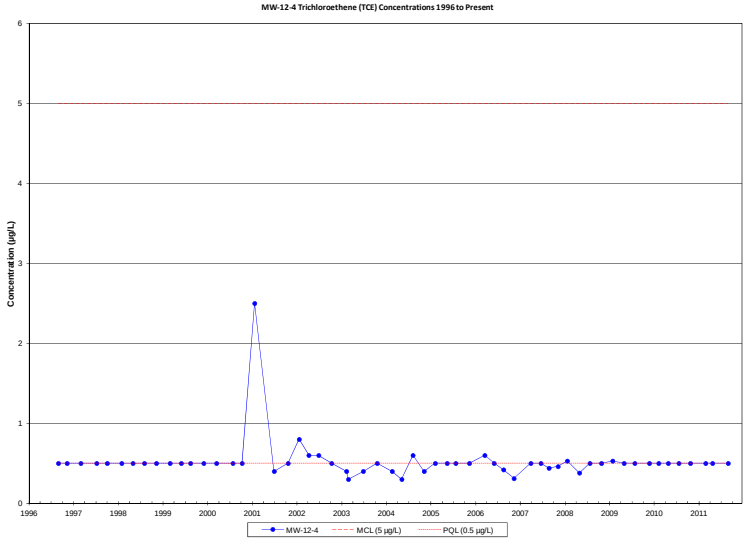


VOCs and Perchlorate Time Series Plots for MW-10

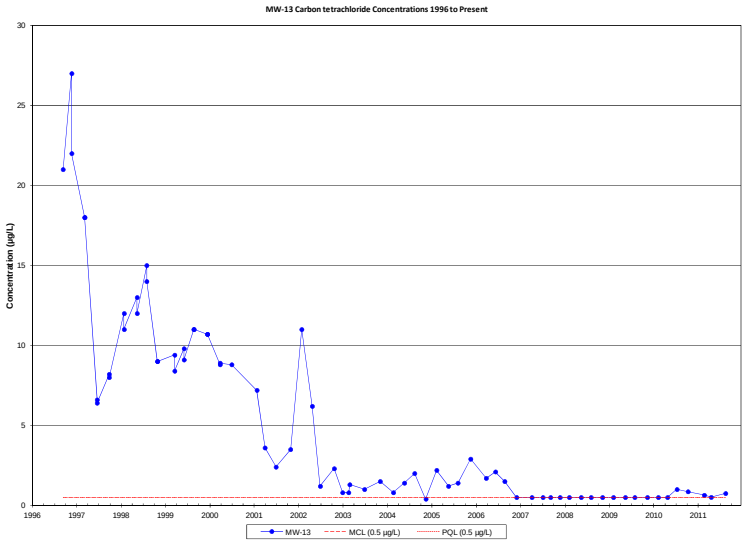


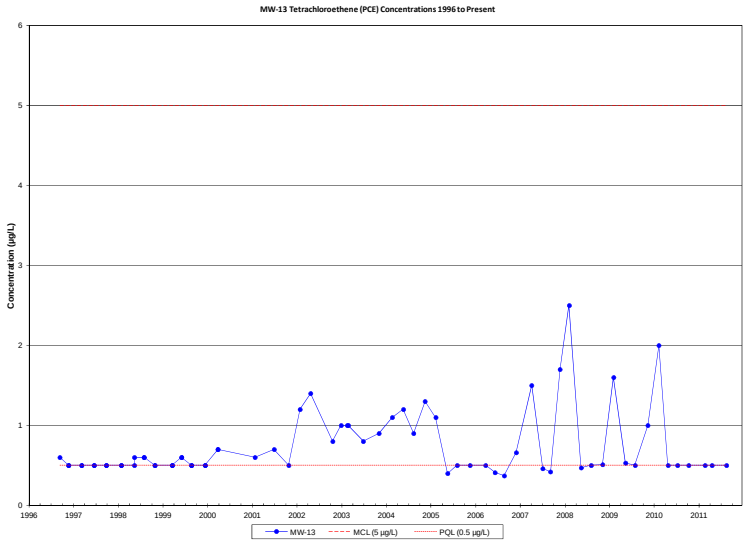


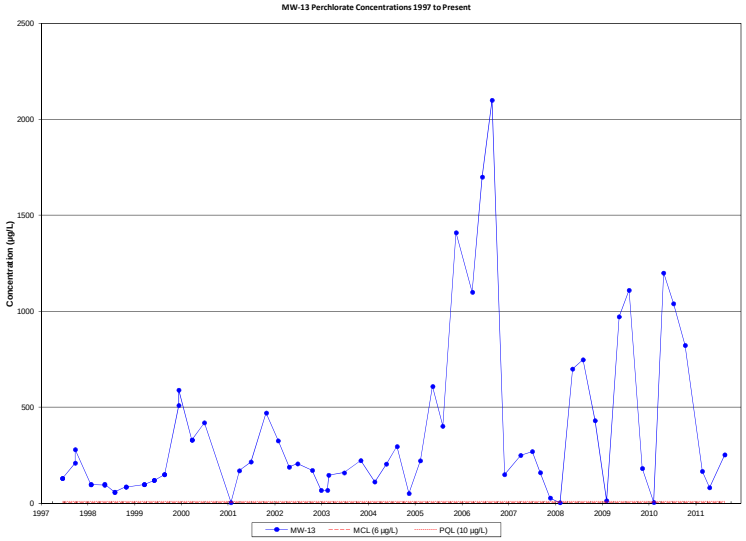


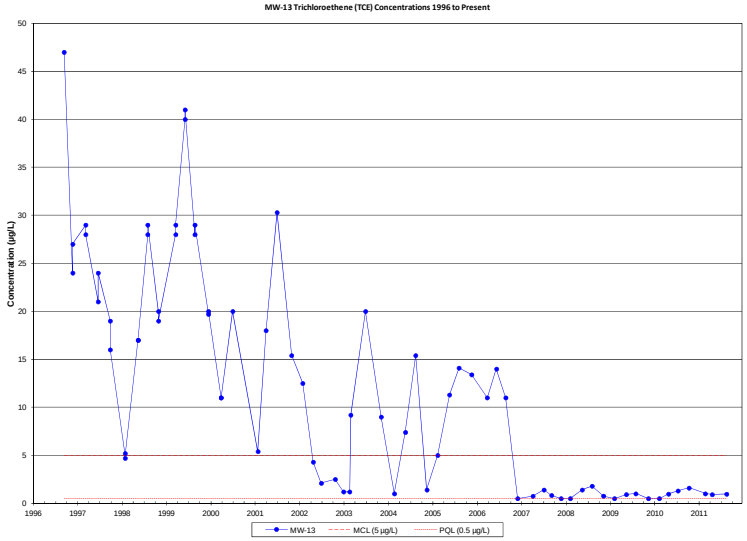


VOCs and Perchlorate Time Series Plots for MW-12-4

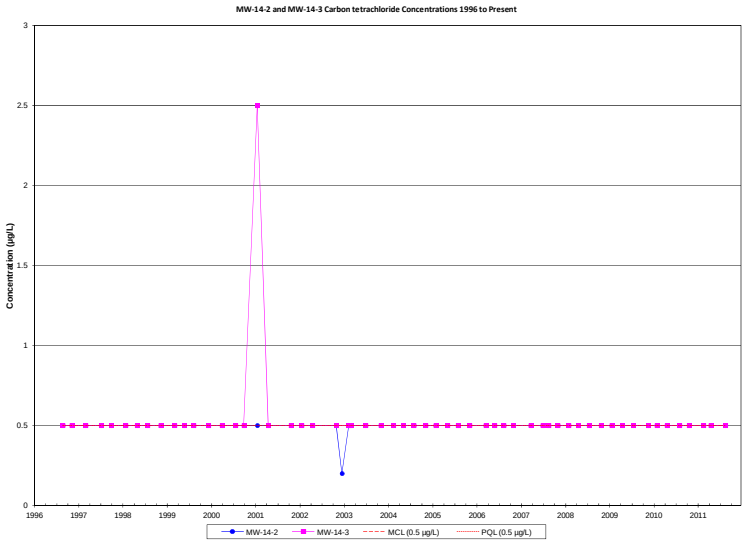


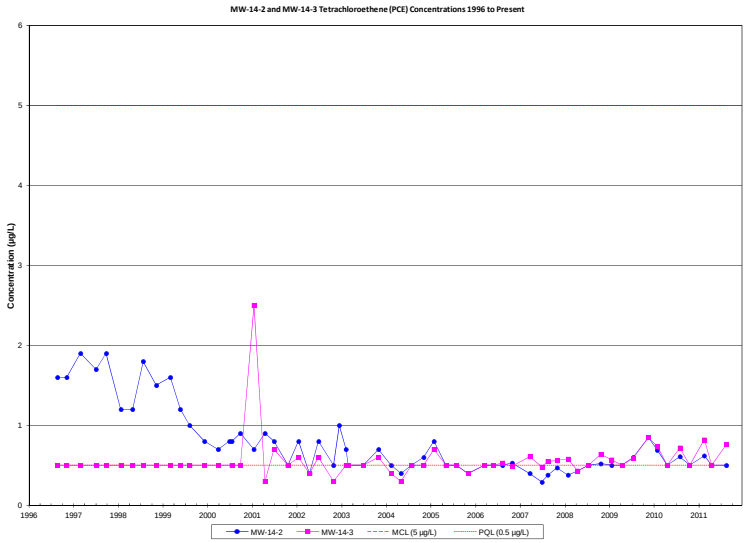


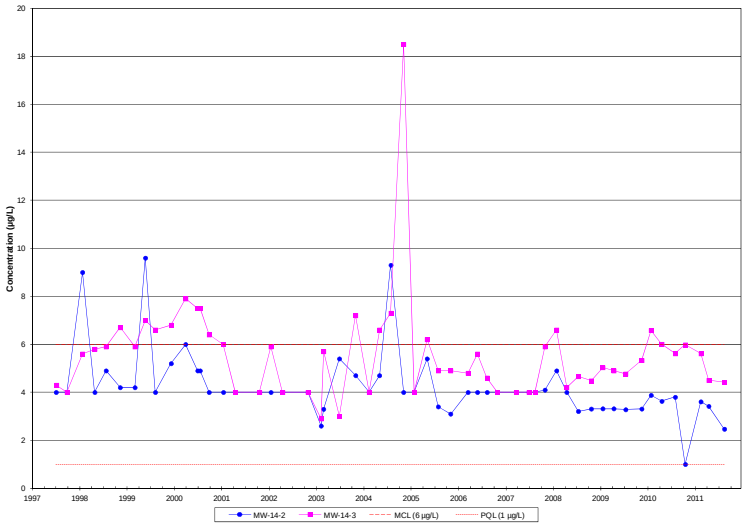


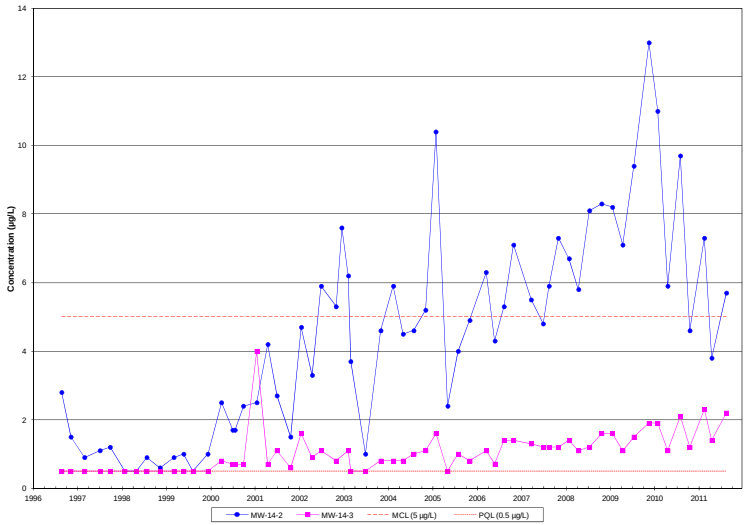


VOCs and Perchlorate Time Series Plots for MW-13

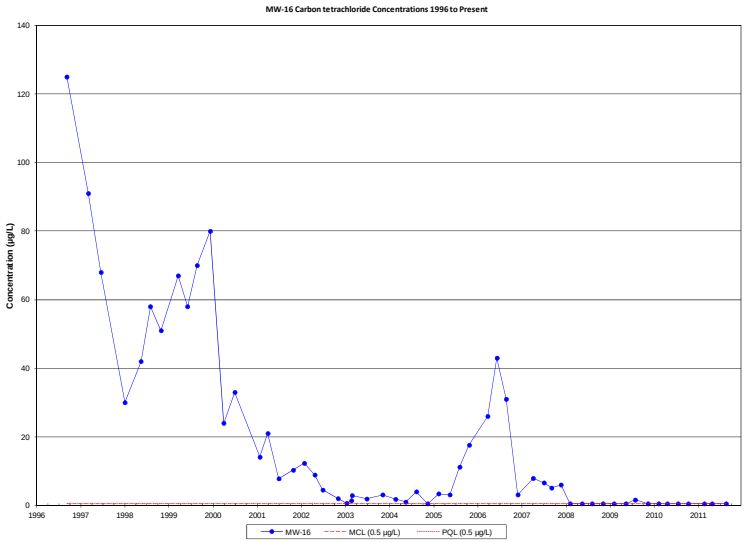


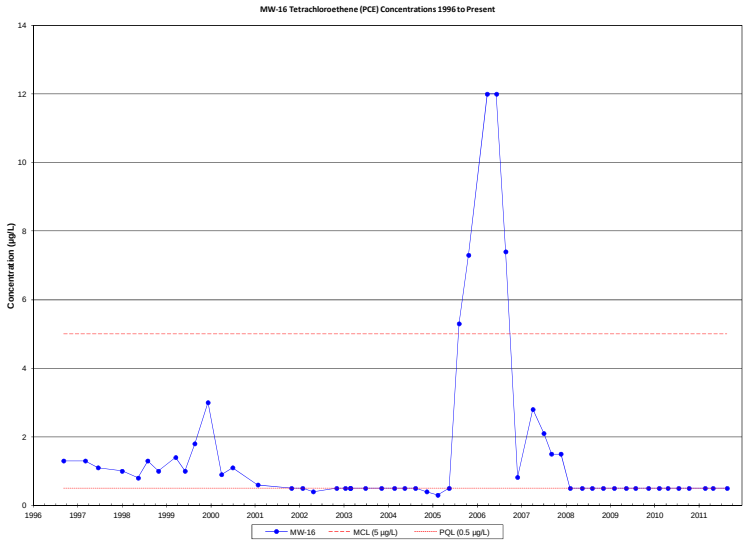


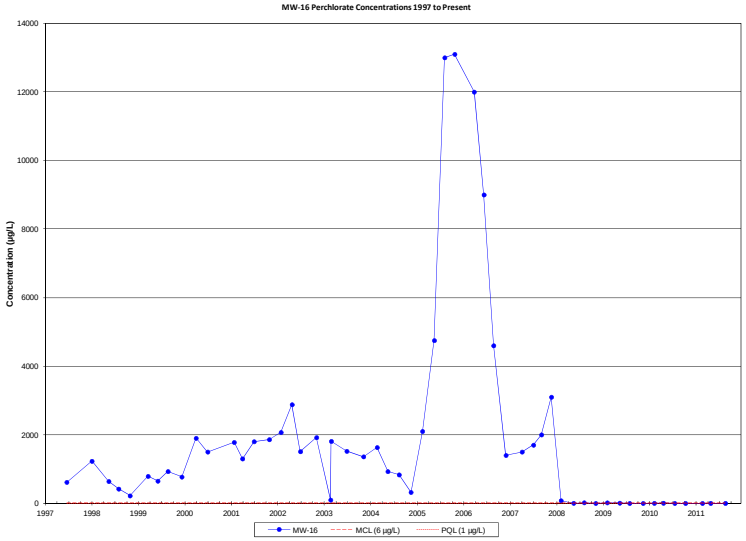


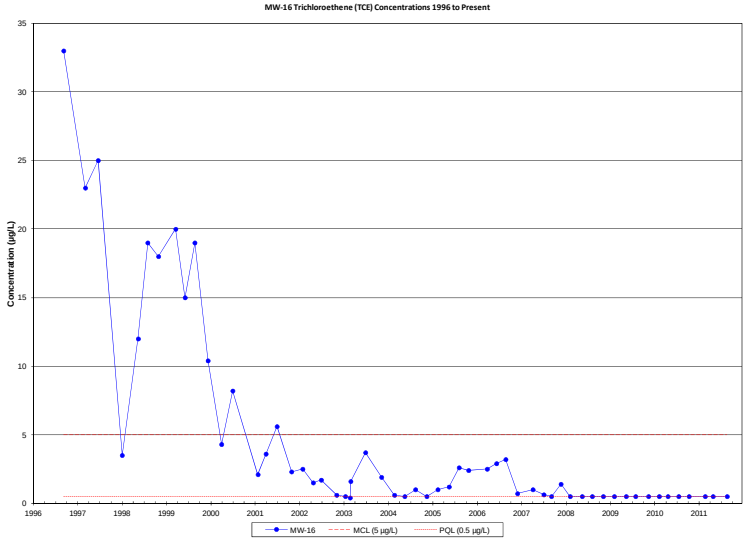


VOCs and Perchlorate Time Series Plots for MW-14-2 and MW-14-3

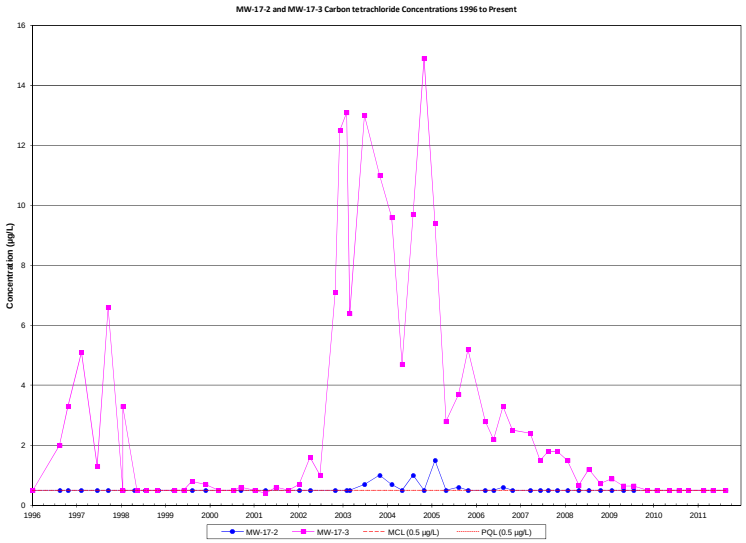


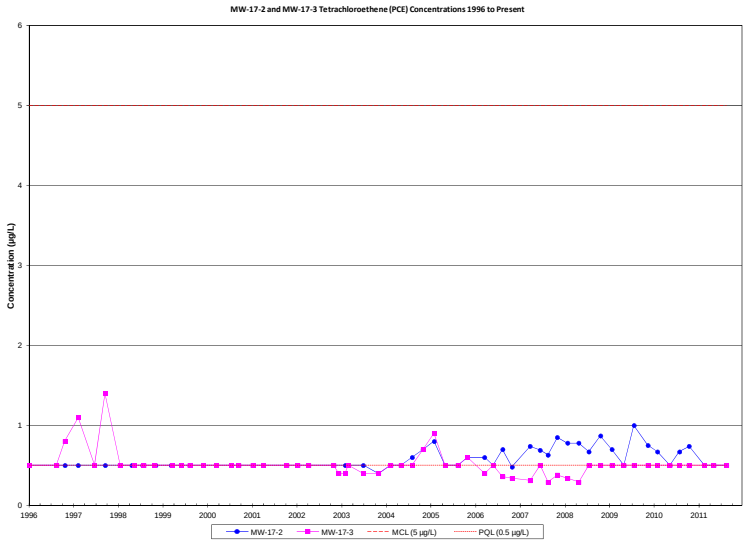


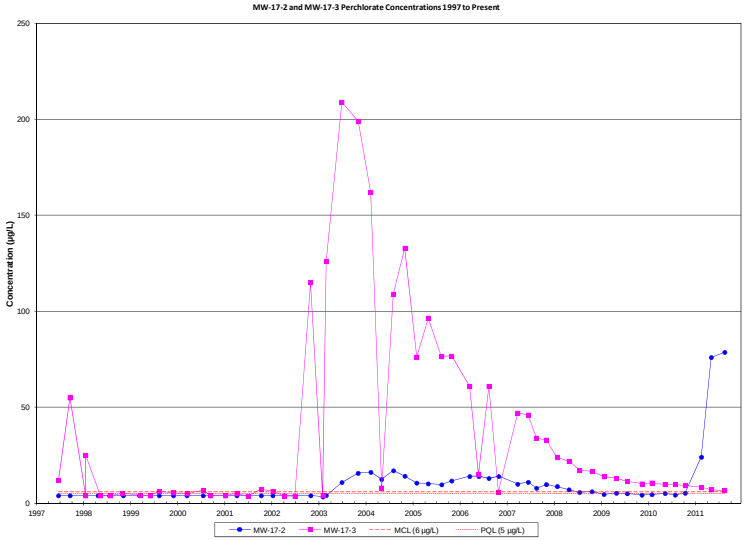


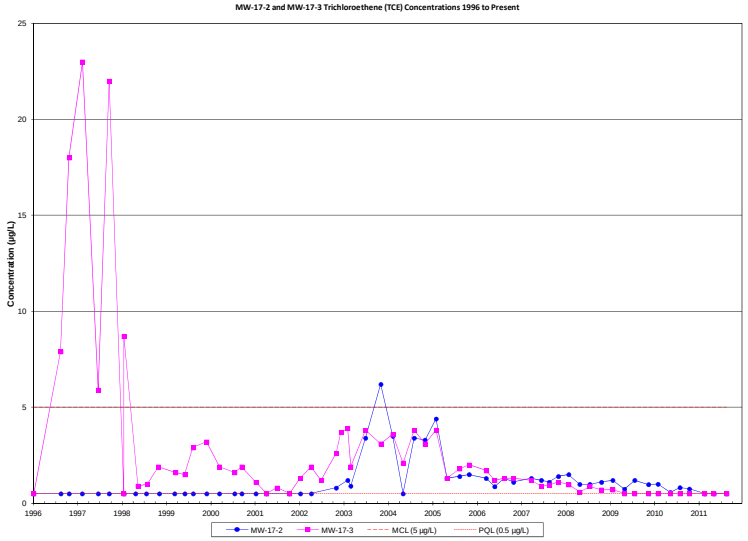


VOCs and Perchlorate Time Series Plots for MW-16

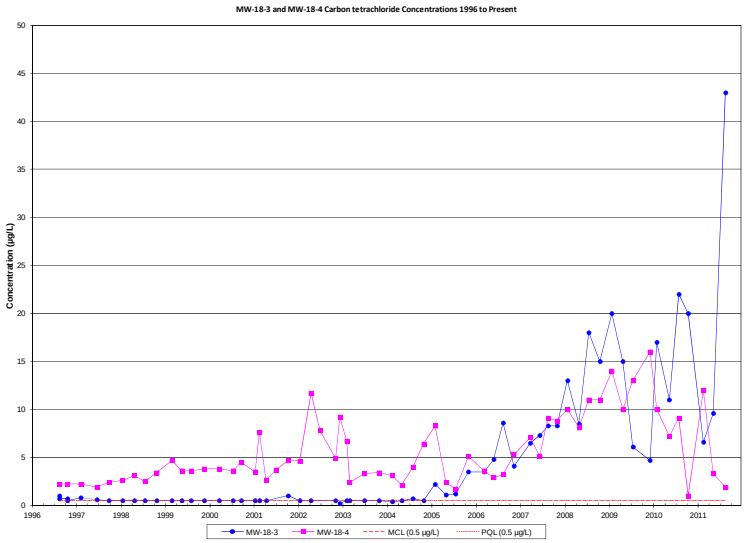


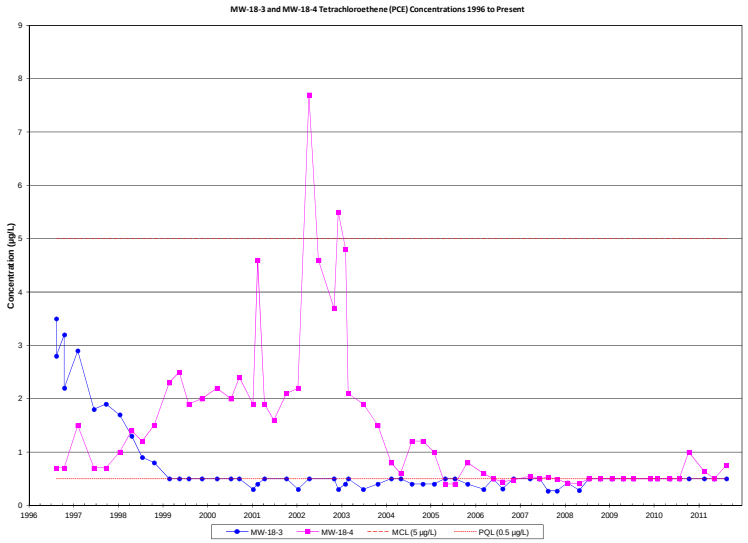


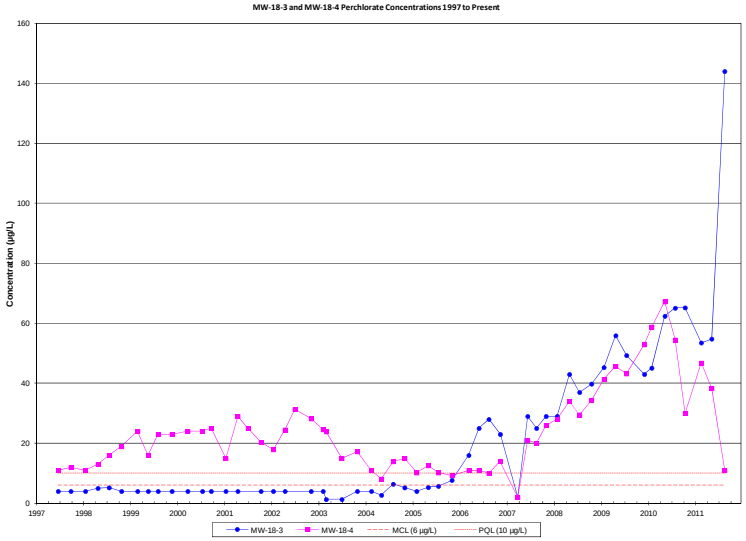


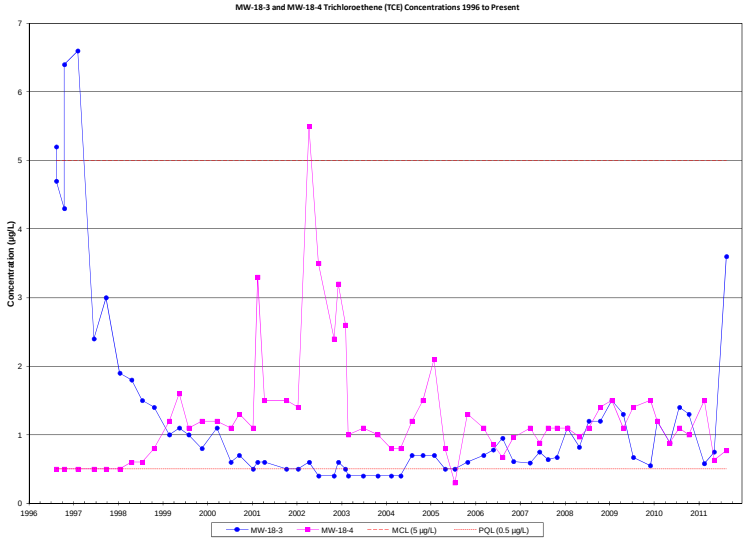


VOCs and Perchlorate Time Series Plots for MW-17-2 and MW-17-3

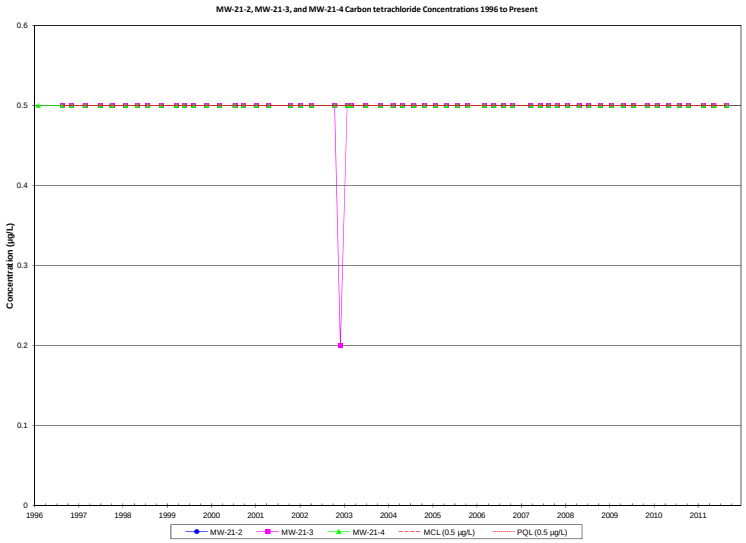


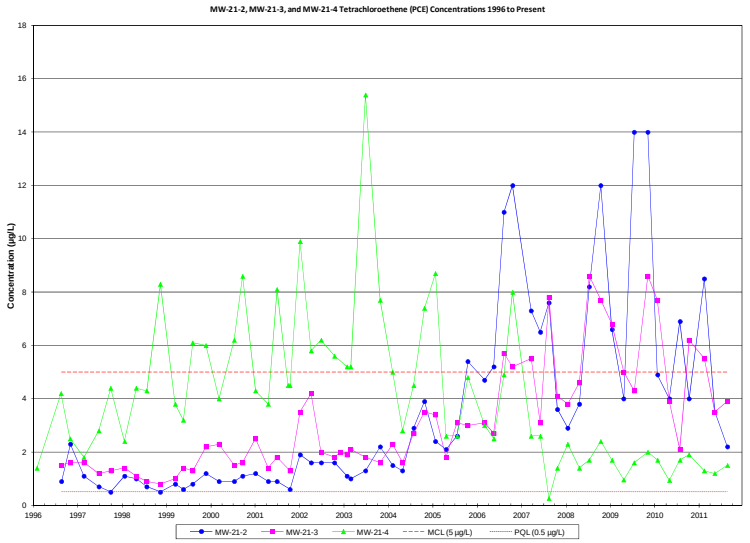


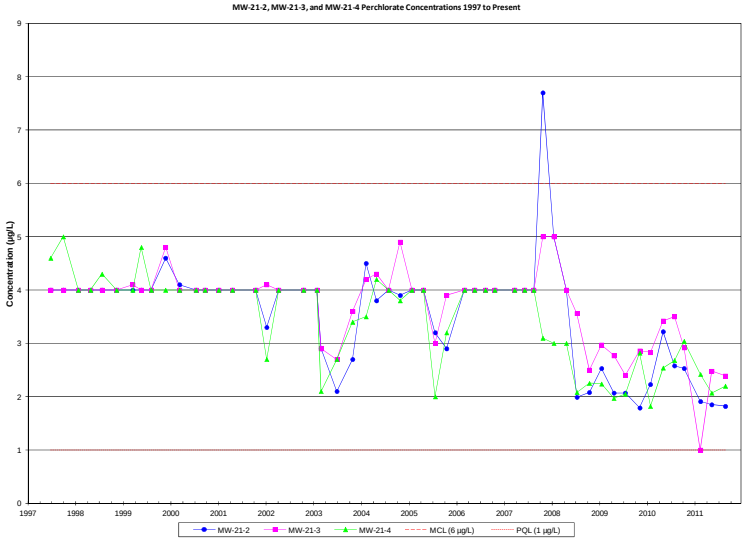


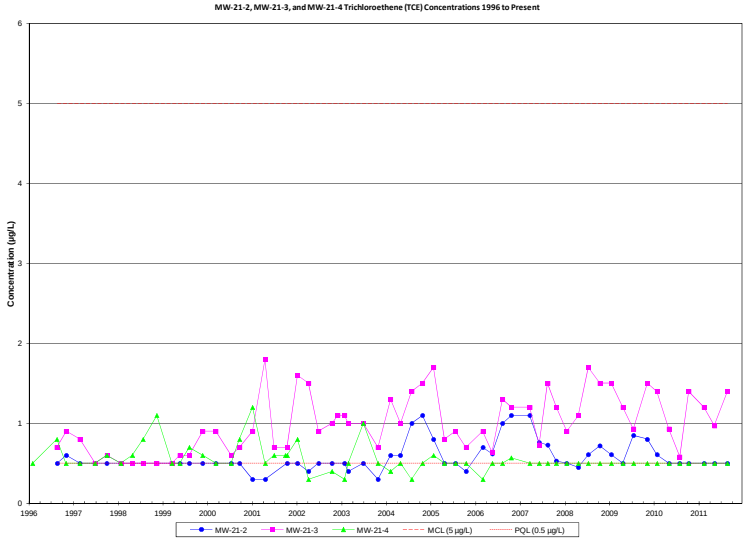


VOCs and Perchlorate Time Series Plots for MW-18-3 and MW-18-4

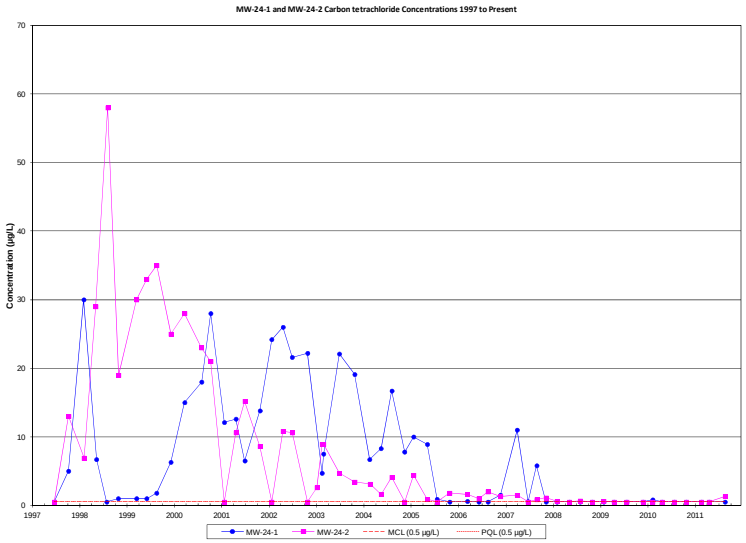


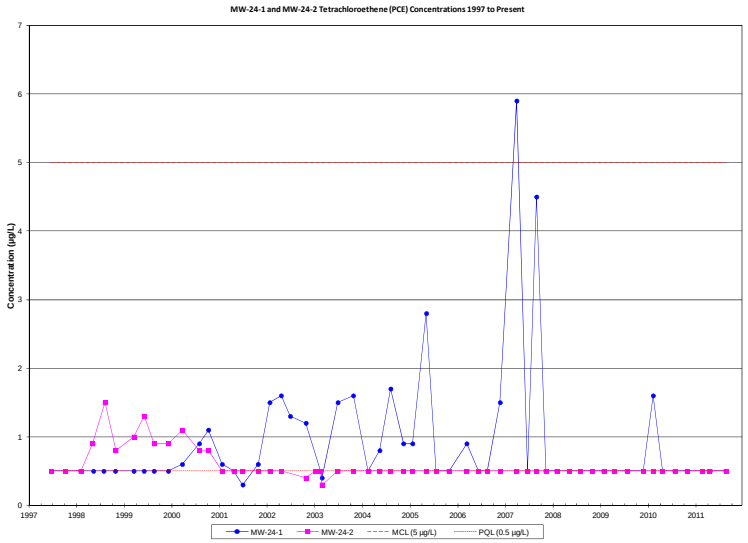


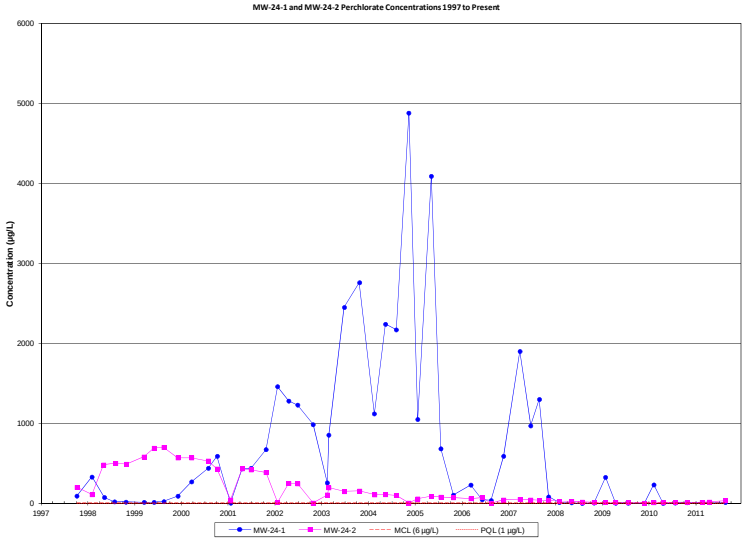


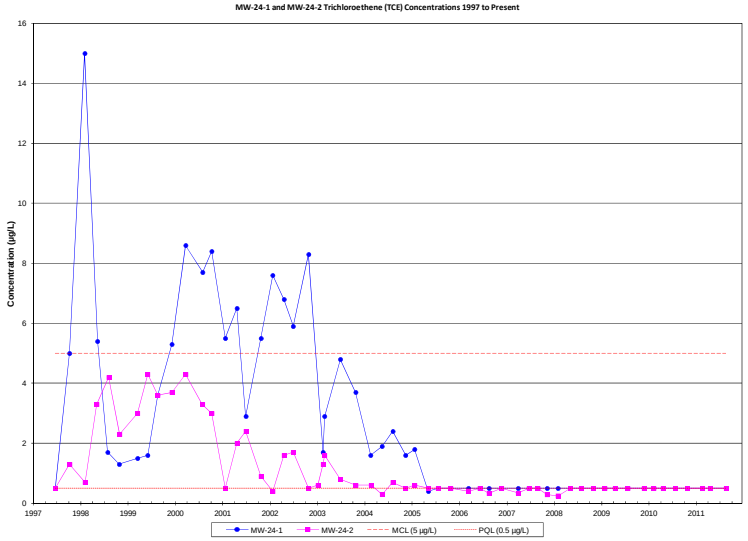


VOCs and Perchlorate Time Series Plots for MW-21-2 and MW-21-3 and MW-21-4









VOCs and Perchlorate Time Series Plots for MW-24-1 and MW-24-2