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 1st Quarter 2011 sampling event was conducted by Battelle and Insight Environmental, Inc.

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: G005862
Navy Contract No:
Sampled By: David Loera
Date: 3-2-11
Weather: over cast / cool

PURGE VOLUME CALCULATION (casing volume):

(155' (TD feet) - 43.21 (WL feet)) X 4² (D inches) X 3 (# Vols) X 0.0408 = 218.93 Gallons (Calculated Purge Volume)

111.79

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
1617		water	to	surface					Flow rate 4.6 GPM
1622	43.36	23	6.75	0.440	0.51	3.98	19.81	174	
1632	43.36	64	6.91	0.440	0.28	3.88	19.86	232	
1644	43.36	124.2	6.92	0.440	0.00	3.86	19.87	272	
1650	43.36	151.8	6.90	0.440	0.00	3.87	19.88	284	
1702	43.36	207	6.92	0.439	0.00	3.85	19.88	297	

Total Purge Volume: 250 (Gallons) /72.477
Total Discharge: 3.43 (Casing Volumes)
Approx. Purge Rate: 4.6 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: Purge time start:
Meters: QED MP 20, Oakton T-100 controller: Max stop flow 1720

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: DUPE-7-1Q11	Type:	Type:
Sample Time: 1705	Sample Time: 1710	Sample ID:	Sample ID:
No. of Containers: Alpha 7	No. of Containers: Alpha 7	Sample Time:	Sample Time:
No. of Containers: CAS 1	No. of Containers: CAS 1		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: 600586 2
Navy Contract No:
Sampled By: David Loera
Date: 3-2-11
Weather: over cast / warm

PURGE VOLUME CALCULATION (casing volume):

(74' (TD feet) - 29.5 (WL feet)) X 4² (D inches) X 3 (# Vols) X 0.0408 = 87.15 (Calculated Purge Volume) Gallons

(44.5)

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
1514		water	to	surface					Flow rate 5.6 GPM
1520	31.15	33.6	7.07	0.409	0.45	1.63	16.23	188	
1523	31.21	50.4	7.20	0.418	0.25	1.23	16.23	174	
1526	31.24	67.2	7.25	0.420	0.18	1.04	16.23	164	
1529	31.26	84	7.27	0.419	0.19	0.97	16.23	161	

Total Purge Volume: 95 (Gallons) 87.15
Total Discharge: 3.27 (Casing Volumes)
Approx. Purge Rate: 5.6 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: Purge time start:
Meters: QED MP 20, Oakton T-100 Controller: Stop flow 1533

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:	Type:	Type:
Sample Time: 1530	Sample Time:	Sample ID:	Sample ID:
No. of Containers: Alpha 1	No. of Containers:	Sample Time:	Sample Time:
No. of Containers: CAS 1	No. of Containers:		No. of Containers

ORIGINAL FIELD RECORD

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: G005862
Navy Contract No:
Sampled By: David Loera
Date: 3-3-11
Weather: overcast/cool

PURGE VOLUME CALCULATION (casing volume):

(140' - 23.78) X 4² X 3 X 0.0408 = 116.22 227.60 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): 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
0929	~~24.11~~	Water	to	surface	±				Flow rate 4.0 GPM
0934	24.11	20	6.58	0.302	1.25	0.17	17.36	217	
0941	24.14	48	6.77	0.306	0.83	0.09	17.36	196	
0948	24.17	76	6.83	0.306	0.59	0.07	17.37	153	
0958	24.21	114	6.85	0.307	0.48	0.05	17.36	128	
1009	24.23	158	6.86	0.307	0.37	0.04	17.38	105	
1024	24.28	218	6.87	0.307	0.16	0.04	17.35	98	

Total Purge Volume: 240 (Gallons) / 75.87
Total Discharge: 3.16 (Casing Volumes)
Approx. Purge Rate: 4.0 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 0929 Purge time start: 0929
Meters: MP 20 QED, Oakton T-100 Controller: Max stop flow 1030

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: 1026	Sample Time:	Sample ID:	Sample ID:
No. of Containers: Alpha 7	No. of Containers:	Sample Time:	Sample Time:
No. of Containers: CAS 1	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: G005862-2
Navy Contract No:
Sampled By: David Loera
Date: 3-1-11
Weather: Overcast/cool

PURGE VOLUME CALCULATION (casing volume):

(285' - 191.01) X 4² X 3 X 0.0408 = 184.07 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): 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
1534	191.01	water	to	surface					
1551	191.10	31.45	7.14	0.650	0.18	1.39	23.59	704	Flow rate 1.85 GPM
1609	191.09	64.75	7.17	0.650	0.09	1.34	23.58	723	
1624	191.06	92.5	7.16	0.650	0.02	1.33	23.61	727	
1636	191.05	114.7	7.17	0.650	0.00	1.33	23.61	728	
1650	191.03	140.6	7.16	0.650	0.00	1.33	23.61	731	
1702	191.02	162.8	7.17	0.650	0.00	1.32	23.61	732	
1713	191.02	185.15	7.17	0.650	0.00	1.32	23.59	733	

Total Purge Volume: 196.1 (Gallons) 161.357
Total Discharge: 3.20 (Casing Volumes)
Approx. Purge Rate: 1.85 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1534 Purge time start: 1534
Meters: QED MP20 Oakton T-100 Stop flow: 1720

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
Sample ID: MW-16
Sample Time: 1715
No. of Containers: Alpha 9
No. of Containers: CAS 1

Duplicate
Sample ID:
Sample Time:
No. of Containers:
No. of Containers:

Blank
Type:
Sample ID:
Sample Time:

Other (Trip/Source/)
Type:
Sample ID:
Sample Time:
No. of Containers

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: G005862
Navy Contract No:
Sampled By: David Leera
Date: 3-2-11
Weather: Overcast / cool

PURGE VOLUME CALCULATION (casing volume):

(245' - 145.46) X 4² X 3 X 0.0408 = 194.94 Gallons
(49.54)
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
0821		Water	to	surface					Flow rate 2.5 GPM
0839	146.25	45	6.71	1.196	3.49	5.86	20.28	240	
0851	146.26	75	6.74	1.197	1.32	5.86	20.30	261	
0903	146.28	105	6.75	1.195	0.76	5.86	20.31	272	
0915	146.30	135	6.76	1.194	0.33	5.85	20.31	282	
0927	146.30	165	6.76	1.196	0.37	6.01	20.31	291	
0938	146.30	192.5	6.77	1.196	0.35	5.96	20.31	296	

Total Purge Volume: 222.5 (Gallons) / 64.98
Total Discharge: 3.42 (Casing Volumes)
Approx. Purge Rate: 2.5 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 0821 Purge time start: 0821
Meters: QED MP20, Dakton T-100 Stop flow: 0950

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
Sample ID: MW-6
Sample Time: 0940
No. of Containers: Alpha 7
No. of Containers: CAS 1

Duplicate
Sample ID: MW-6-MS/MSD
Sample Time: 0945
No. of Containers: Alpha 7
No. of Containers: CAS 1

Blank
Type:
Sample ID:
Sample Time:

Other (Trip/Source/)
Type:
Sample ID:
Sample Time:
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: G005862
Navy Contract No:
Sampled By: David Loera
Date: 3-2-11
Weather: Sunny/Cool

PURGE VOLUME CALCULATION (casing volume):

(205' - 91.41 [113.59]) X 4^2 X 3 X 0.0408 = 222.45 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): 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
1323		water	to	surface					Flow rate 3.43 GPM
1338	91.68	51.45	7.14	0.432	0.25	3.85	17.19	176	
1348	91.69	85.75	7.15	0.432	0.24	3.90	17.21	202	
1359	91.68	123.48	7.15	0.432	0.19	3.88	17.23	218	
1409	91.67	157.78	7.15	0.431	0.19	3.94	17.23	232	
1422	91.69	202.37	7.16	0.432	0.13	3.90	17.23	245	

Total Purge Volume: 240 (Gallons) / 74.15
Total Discharge: 3.24 (Casing Volumes)
Approx. Purge Rate: 3.43 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1323 Purge time start: 1323
Meters: QED MP 20, Oakton T-100 controller: Max stop flow 1435

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
Sample ID: MW-8
Sample Time: 1428
No. of Containers: Alpha 9
No. of Containers: CAS 1

Duplicate
Sample ID:
Sample Time:
No. of Containers:
No. of Containers:

Blank
Type:
Sample ID:
Sample Time:

Other (Trip/Source/)
Type:
Sample ID:
Sample Time:
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: 60058662-2
Navy Contract No:
Sampled By: David Loera
Date: 3-1-11
Weather: Sunny / Cool

PURGE VOLUME CALCULATION (casing volume):

(275' - 166.57') X 4² X 3 X 0.0408 = 212.35 Gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

108.43

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
1233	166.57	-	-	Water to surface					
1245	167.11	21	7.05	0.671	15.08	1.55	23.54	66	
1258	166.97	48.3	7.09	0.672	18.12	1.47	23.64	69	
1317	166.90	88.2	7.11	0.673	4.14	1.42	23.66	70	
1333	166.90	121.8	7.11	0.673	62.0	1.34	23.62	68	
1349	166.81	144.2	7.11	0.673	0.61	1.39	23.75	74	decreased flow to 1.4 GPM
1407	166.82	169.4	7.11	0.673	0.54	1.41	23.76	79	
1423	167.10	191.8	7.11	0.673	0.13	1.41	23.76	83	
1439	167.21	214.2	7.11	0.673	0.59	1.42	23.79	83	

Total Purge Volume: 222.6 (Gallons) / 70, 783
Total Discharge: 3.14 (Casing Volumes)
Approx. Purge Rate: 2.1 / 1.4 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1232 Purge time start: 1235
Meters: QED MP 20, Dakton T-100 Controller: Max 1445-Stop flow

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: 1440	Sample Time:	Sample ID:	Sample ID:
No. of Containers: Alpha 9	No. of Containers:	Sample Time:	Sample Time:
No. of Containers: CAS 1	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: G005862
Navy Contract No:
Sampled By: David Loera
Date: 3-2-11
Weather: Overcast/warm

PURGE VOLUME CALCULATION (casing volume):

(235' (TD feet) - 138.58 (WL feet)) X 4² (D (inches)) X 3 (# Vols) X 0.0408 = 188.83 Gallons (Calculated Purge Volume)

96.42

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
1055		Water	at	surface					Flow rate 2.9 GPM
1112	138.74	49.3	6.98	0.584	0.37	6.95	21.43	249	
1122	138.73	78.3	6.99	0.585	0.08	6.87	21.43	249	
1132	138.69	107.3	6.98	0.584	0.09	6.97	21.43	252	
1140	138.68	130.5	6.99	0.585	0.03	6.88	21.43	258	
1146	138.65	147.9	6.98	0.585	0.02	6.86	21.45	257	
1159	138.63	185.6	6.99	0.585	0.02	6.89	21.46	260	

Total Purge Volume: 217.5 (Gallons) / 62.94
Total Discharge: 3.46 (Casing Volumes)
Approx. Purge Rate: 2.9 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1055 Purge time start: 1055
Meters: QED MP20, Oakton T-100 controller: Max Stop flow: 1210

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
Sample ID: MW-13
Sample Time: 1201
No. of Containers: Alpha 9
No. of Containers: CAS 1

Duplicate
Sample ID: MW-13-MS/MSD
Sample Time: 1205
No. of Containers: Alpha 9
No. of Containers: CAS 1

Blank
Type: _____
Sample ID: _____
Sample Time: _____

Other (Trip/Source/ _____)
Type: _____
Sample ID: _____
Sample Time: _____
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): ~~658~~, 558, 346, 252, ~~172~~
Beginning of Session: 14.23 psia
End of Session: 14.21 psia

Start Time: 1057
Finish Time: 1210

Date: 03/07/11
Page: 1 of 1

Water Pressure Inside Casing: ~~11~~

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	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	197.64	✓	224.12	✓	224.13	✓	✓	197.63	1120	5.93	2.62	47.7	4.92	18.6	110
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	105.27	✓	135.70	✓	135.70	✓	✓	105.26	1142	6.13	3.88	49.1	4.93	17.3	78
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	64.33	✓	95.34	✓	95.35	✓	✓	64.32	1200	6.24	5.09	64.1	4.73	17.6	103

Notes:

Total Volume: ~~11~~

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

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

INSIGHT
Environmental Engineering and Construction, Inc.

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~~, ~~302~~, 322, 240, 150
Beginning of Session: 14.21 psia
End of Session: 14.23 psia

Start Time: 0810
Finish Time: 1005

Date: 03/02/11
Page: 1 of 1

Water Pressure Inside Casing: ~~H~~

	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
pe-04-1211	3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	67.39	✓	133.40	✓	133.39	✓	✓	67.38	0846	5.52	4.21	41.5	4.57	16.8	128
	2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	32.11	✓	98.50	✓	98.51	✓	✓	33.10	0917	5.20	7.87	— *	4.83	16.7	226
	1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.34	✓	64.13	✓	64.13	✓	✓	14.36	0953	5.76	0.73	51.0	4.94	14.8	99

Notes:
port 5: NOT SAMPLED. port 4: NOT SAMPLED. port 3: CLEAR, FAINT ODOR
port 2: CLEAR, NO ODOR port 1: CLEAR, NO ODOR
* COND. READ 0.999

Total Volume: ~~H~~

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: 14.16 psia
End of Session: 14.19 psia

Start Time: 1034
Finish Time: 1245

Date: 3/3/11
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	✓	✓	✓	✓	✓	✓	✓	✓	✓	186.67	✓	197.22	✓	197.16	✓	✓	186.68	1058	6.13	0.19	22.8	4.67	18.0	34
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	146.16	✓	156.05	✓	155.98	✓	✓	146.14	1125	6.17	2.02	39.0	4.77	18.8	93
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	72.38	✓	84.22	✓	84.16	✓	✓	72.39	1149	6.29	1.71	53.2	4.84	17.8	96
1	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	25.53	✓	43.27	✓	43.27	✓	✓	25.54	1217	6.31	-0.07	64.8	5.02	19.6	101
1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	25.49	✓	43.21	✓	43.21	✓	✓	25.50	—	6.48	0.06	64.8	5.34	19.8	107

MS/MSD

MS/MSD

Notes:
port 5: NOT SAMPLED port 4: CLEAR STRONG ODOR port 3: CLEAR STRONG ODOR
port 2: CLEAR STRONG ODOR port 1: CLEAR FAINT 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: 14.08 psia
End of Session: 14.09 psia

Start Time: 0800
Finish Time: 1045

Date: 03/07/11
Page: 1 of 1

Water Pressure Inside Casing: ~4

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	✓	✓	✓	✓	✓	✓	✓	✓	✓	215.65	✓	221.31	✓	221.25	✓	✓	215.65	0842	5.24	3.47	45.9	5.74	18.7	185
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	167.32	✓	174.79	✓	174.70	✓	✓	167.32	0914	5.39	0.09	52.7	6.84	19.9	151
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	119.55	✓	126.04	✓	125.83	✓	✓	119.57	0949	5.56	-0.11	46.3	6.65	18.8	142
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	83.15	✓	91.80	✓	91.67	✓	✓	83.13	1017	5.79	2.31	57.4	6.35	19.2	143
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	38.15	✓	52.81	✓	52.93	✓	✓	36.16	1042	5.79	37.9	51.2	5.12	18.1	153

Dupe-01-R11 - MS/MSD -

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

Total Volume: ~4

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: 14.11 psia
End of Session: 14.11 psia

Start Time: 0900
Finish Time: 1210

Date: 02/23/11
Page: 1 of 1

Water Pressure Inside Casing: ~4

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	✓	✓	✓	✓	✓	✓	✓	✓	✓	186.95	✓	191.69	✓	191.67	✓	✓	186.92	0940	5.07	0.13	38.7	4.22	18.7	168
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	149.79	✓	155.30	✓	155.33	✓	✓	149.77	1006	4.97	0.07	76.0	4.45	17.7	140
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	118.52	✓	123.24	✓	123.26	✓	✓	118.48	1042	5.34	0.63	0.1	3.45	16.4	214
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	72.71	✓	77.66	✓	77.67	✓	✓	72.72	1120	5.67	0.34	0.1	4.29	16.5	114
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	43.63	✓	47.12	✓	47.13	✓	✓	43.62	1205	5.94	1.98	0.999	4.31	16.4	150

PE-02-1211-

Notes:
port 5: Clean, strong odor port 4: Clean faint odor port 3: Clean, faint odor
port 2: Clean, no odor port 1: Clean faint odor

Total Volume: ~4

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: 14.12 psia
End of Session: 14.11 psia

Start Time: 0847
Finish Time: 1040

Date: 7/25/11
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	✓	✓	✓	✓	✓	✓	✓	✓	✓	140.44	✓	193.35	✓	193.34	✓	✓	180.49	915	5.13	0.09	45.2	4.24	13.4	133
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	130.98	✓	142.36	✓	142.35	✓	✓	130.99	0948	5.38	14.7	70.4	4.27	13.7	97
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	89.04	✓	102.74	✓	102.75	✓	✓	89.03	1034	5.58	0.00	0.1	3.95	13.6	106

MS/MSD - 2

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

Total Volume: --

INSIGHT

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-18
Sampling Zone No.: 5+2
Depth (ft): 684, 564, 424, 330, 270
Beginning of Session: 14.15 psia
End of Session: 14.13 psia

Start Time: 0855
Finish Time: 1210

Date: 02/24/11
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	✓	✓	✓	✓	✓	✓	✓	✓	✓	164.39	✓	221.22	✓	221.20	✓	✓	164.37	1008	5.62	0.03	>6.2	5.51	17.5	181
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	113.05	✓	170.75	✓	170.74	✓	✓	113.07	1045	5.67	1.34	47.5	5.81	18.9	150
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	53.57	✓	110.51	✓	110.45	✓	✓	53.56	1126	5.80	0.11	57.6	4.60	14.8	141
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.33	✓	70.40	✓	70.38	✓	✓	14.36	1204	6.00	0.71	52.8	4.82	16.8	141

Notes:

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

port 2: CLEAR, SLIGHT ODOR port 1: THIS PORT WILL NOT BE SAMPLED THIS QUARTER

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: 14.14 psia
End of Session: 14.16 psia

Start Time: 0820
Finish Time: 1020

Date: 3/8/11
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	✓	✓	✓	✓	✓	✓	✓	✓	✓	172.35	✓	178.64	✓	178.03	✓	✓	172.34	0845	5.11	-0.05	63.8	4.07	15.2	189
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	149.32	✓	152.71	✓	152.31	✓	✓	149.32	0912	5.15	-0.14	61.5	4.51	15.1	174
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	126.30	✓	131.24	✓	131.13	✓	✓	126.30	0938	5.20	000	69.6	4.04	14.7	161
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	92.41	✓	96.65	✓	96.59	✓	✓	92.41	0951	5.44	17.1	0.1	4.30	14.8	164
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	61.12	✓	67.90	✓	67.89	✓	✓	61.14	1015	5.67	3.83	65.5	4.44	15.1	146

15/MSD

Notes:

Total Volume: —

port 5: CLEAR, NO ODOR port 4: CLEAR SLIGHT ODOR port 3: CLEAR NO ODOR

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

INSIGHT

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-20
Sampling Zone No.: 5+1
Depth (ft): 900, 700, 562, 392, 230
Beginning of Session: 14.14 psia
End of Session: 14.13 psia

Start Time: 0755
Finish Time: 1030

Date: 03/01/11
Page: 1 of 1

Water Pressure Inside Casing: 71

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	✓	✓	✓	✓	✓	✓	✓	✓	✓	322.29	✓	336.76	✓	336.76	✓	✓	322.29	0820	5.55	-1.03	32.0	4.39	14.5	-8
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	235.47	✓	252.17	✓	252.12	✓	✓	235.50	0900	5.82	1.34	33.8	4.09	14.7	-50
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	175.60	✓	191.39	✓	191.37	✓	✓	175.62	0925	6.90	-0.65	39.9	4.64	16.3	-29
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	101.85	✓	117.32	✓	117.33	✓	✓	101.82	0949	6.76	-1.09	61.1	4.49	14.9	29
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	31.46	✓	46.68	✓	46.69	✓	✓	31.44	1023	6.35	2.03	46.7	4.35	16.0	45

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: ~11

INSIGHT

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-21
Sampling Zone No.: 5+1
Depth (ft): 372, 310, 240, 161, 90
Beginning of Session: 14.14 psia
End of Session: 14.13 psia

Start Time: 1115
Finish Time: 1345

Date: 2/22/11
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	✓	✓	✓	✓	✓	✓	✓	✓	✓	127.63	✓	165.87	✓	165.88	✓	✓	127.58	1137	5.08	0.35	98.3	5.83	20.5	228
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	102.01	✓	138.95	✓	138.97	✓	✓	102.04	1211	5.95	0.64	88.6	5.25	20.1	195
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	70.39	✓	109.10	✓	109.11	✓	✓	70.40	1235	6.14	0.73	99.8	5.07	18.4	283
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	35.91	✓	75.04	✓	75.06	✓	✓	35.94	1300	6.43	0.93	0.999	4.64	18.1	275
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.22	✓	44.05	✓	44.05	✓	✓	14.23	1337	6.59	4.26	0.105	4.52	19.5	277

pe-01-1211.

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

Total Volume: —

INSIGHT
Environmental Engineering and Consulting, Inc.

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: 14.15 psia
End of Session: 14.17 psia

Start Time: 0800
Finish Time: 0945

Date: 3/3/11
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
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	115.38	✓	124.92	✓	124.91	✓	✓	115.39	0825	5.15	0.00	63.0	4.50	17.6	137
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	89.32	✓	98.83	✓	98.80	✓	✓	89.31	0909	5.52	0.24	66.4	4.26	17.8	90
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	52.40	✓	62.81	✓	62.81	✓	✓	52.40	0919	5.52	4.44	97.9	4.59	17.7	102

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

Total Volume: --

INSIGHT

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-23
Sampling Zone No.: 4 to 1
Depth (ft): ~~542~~, 445, 319, 254, 174
Beginning of Session: 14.19 psia
End of Session: 14.22 psia

Start Time: 0752
Finish Time: 0945

Date: 3/4/11
Page: 1 of 1

Water Pressure Inside Casing: ~~44~~

	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
MPS.05-1011	4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	163.15	✓	175.63	✓	175.62	✓	✓	163.13	0813	5.70	0.36	41.1	4.47	16.2	148
	3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	108.50	✓	122.82	✓	122.77	✓	✓	108.49	0839	5.62	0.64	42.9	4.58	17.3	121
	2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	80.28	✓	94.61	✓	94.53	✓	✓	80.26	0905	5.77	0.23	— *	4.40	18.8	224
	1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	45.75	✓	61.71	✓	61.72	✓	✓	45.76	0938	6.14	3.26	75.4	4.73	19.9	119

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

Total Volume: ~~4~~

INSIGHT
Environmental Engineering and Consulting

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-24
Sampling Zone No.: 4 to 1
Depth (ft): ~~676~~, 554, 435, 373, 279
Beginning of Session: 14.15 psia
End of Session: 1416 psia

Start Time: 0830
Finish Time: 1050

Date: 2/28/11
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	✓	✓	✓	✓	✓	✓	✓	✓	✓	178.59	✓	183.02	✓	183.00	✓	✓	178.86	0856	5.52	0.70	28.8	4.58	17.5	-38
MS/MSD — 3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	128.11	✓	132.80	✓	132.78	✓	✓	128.09	0929	5.74	0.31	42.8	5.00	17.1	62
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	100.57	✓	106.43	✓	106.41	✓	✓	100.57	0957	5.59	0.54	57.4	4.26	16.9	16
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	60.23	✓	67.81	✓	67.82	✓	✓	60.21	1044	5.89	3.17	76.4	3.92	20.2	118

Notes:
port 5: THIS PORT WILL NOT BE SAMPLED. port 4: CLEAR, STRONG ODOR port 3: CLEAR STRONG ODOR
port 2: CLEAR STRONG ODOR port 1: CLEAR, STRONG ODOR.

Total Volume: —

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: 14.30 psia
End of Session: 14.32 psia

Start Time: 0930
Finish Time: 1140

Date: 03/09/11
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	✓	✓	✓	✓	✓	✓	✓	✓	✓	214.30	✓	208.22	✓	208.21	✓	✓	214.31	0956	6.06	0.37	49.7	4.76	21.7	31
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	178.69	✓	172.36	✓	172.37	✓	✓	178.71	1023	6.13	0.61	78.8	4.82	20.8	137
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	123.29	✓	119.18	✓	119.18	✓	✓	123.28	1050	6.15	-0.03	74.5	5.04	21.2	140
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	88.45	✓	87.16	✓	87.15	✓	✓	88.45	1112	6.14	1.04	77.9	5.59	21.4	156
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	60.12	✓	59.95	✓	59.83	✓	✓	60.14	1132	6.25	19.0	91.0	4.57	22.3	165

Notes:
port 5: CLEAR STRONG ODOR port 4: CLEAR NO ODOR 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-26
Sampling Zone No.: 2 to 1
Depth (ft): 215, 135
Beginning of Session: 14.22 psia
End of Session: 14.23 psia

Start Time: 0750
Finish Time: 0850

Date: 3/9/11 ~~0750~~
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	✓	✓	✓	✓	✓	✓	✓	✓	✓	73.78	✓	84.06	✓	84.04	✓	✓	73.79	0813	5.28	3.76	52.2	4.74	20.9	183
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	38.94	✓	45.23	✓	45.22	✓	✓	38.95	0837	5.31	0.00	0.1	5.42	21.2	274

Notes:

Total Volume: —

port 2: clear, no odor port 1: clear no odor

ATTACHMENT 5: WATER LEVEL MEASUREMENTS

This attachment contains water level measurements for the Westbay™ multiport JPL monitoring wells and the relatively shallow standpipe monitoring wells obtained during the 1st Quarter 2011. Water level measurements were recorded before the sampling event on February 21, 2011 and after the sampling event on March 10, 2011. 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, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 2/21/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: sunny and clear

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	1227	1246
Pressure (psia)	14.16	14.11
Temperature (°C)	20.94	18.62

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	236.37	262.76	236.38	23.06	1233		
							79.48	1020.86
4	558	195.10	220.64	195.10	23.14	1239		
							81.65	1018.69
3	346	102.90	131.47	102.94	22.51	1242		
							75.37	1024.97
2	252	62.11	91.97	62.10	21.48	1243		
							72.49	1027.85
1	172	27.37	60.99	27.38	20.21	1245		
							63.96	1036.38

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 2/21/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (ft. +MSL): 1,082.84
Weather: partly cloudy and cool

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

Ambient Readings	Start	Finish
Time	0843	0855
Pressure (psia)	14.13	14.13
Temperature (°C)	17.23	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	513	148.25	215.78	148.23	20.34	847		
							47.79	1035.05
4	392	95.62	163.41	95.62	20.97	0848		
							47.61	1035.23
3	322	65.15	133.07	65.14	21.00	0850		
							47.61	1035.23
2	240	29.45	97.99	29.47	20.74	0852		
							46.53	1036.31
1	150	14.21	63.20	14.21	19.86	0854		
							36.80	1046.04

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 2/21/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: Sunny and cool

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	0906	0929
Pressure (psia)	14.10	14.09
Temperature (°C)	18.29	18.07

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	234.29	242.12	234.29	20.53	913		
							112.96	1026.34
4	524	184.76	196.79	184.76	21.00	0918		
							102.53	1036.77
3	429	142.92	155.51	142.88	20.73	0922		
							102.77	1036.53
2	259	70.22	83.86	70.25	19.68	0925		
							98.06	1041.24
1	149	22.99	42.06	22.99	18.91	0927		
							84.50	1054.80

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 2/21/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,102.14
Weather: sunny and cool

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

Ambient Readings	Start	Finish
Time	1012	1024
Pressure (psia)	14.16	14.15
Temperature (°C)	19.78	18.15

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	213.95	220.23	213.92	19.63	1015		
							72.60	1029.54
4	436	165.19	173.77	165.21	20.77	1017		
							67.78	1034.36
3	323	116.05	124.97	116.04	20.40	1018		
							67.36	1034.78
2	243	81.21	91.14	81.21	19.56	1020		
							65.41	1036.73
1	140	36.36	51.61	36.37	19.90	1022		
							53.60	1048.54

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 2/21/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,173.47
Weather: partly cloudy and cool

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

Ambient Readings	Start	Finish
Time	1050	1103
Pressure (psia)	14.14	14.11
Temperature (°C)	20.52	19.30

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	540	185.11	191.59	185.12	20.58	1054		
							130.62	1042.85
4	456	148.66	155.19	148.59	20.80	1056		
							130.60	1042.87
3	382	116.42	123.12	116.39	20.61	1058		
							130.58	1042.89
2	277	70.72	77.53	70.69	20.15	1059		
							130.76	1042.71
1	207	40.22	47.01	40.21	19.59	1101		
							131.17	1042.30

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 2/21/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,191.21
Weather: sunny and warm

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

Ambient Readings	Start	Finish
Time	1354	1412
Pressure (psia)	14.06	14.05
Temperature (°C)	19.82	15.61

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	726	241.80	252.98	241.79	19.71	1402		
							174.81	1016.40
4	582	179.42	189.01	179.42	19.79	1404		
							178.39	1012.82
3	468	129.98	139.59	129.96	18.84	1406		
							178.40	1012.81
2	370	87.45	99.60	87.46	18.14	1408		
							172.66	1018.55
1	250	35.31	53.12	35.32	17.28	1410		
							159.89	1031.32

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 2/21/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Well ID: MW-18
Probe Type: Westbay
Serial No.:
Casing Size/Type: 1.5" Westbay
Elevation of Datum (Ft. + MSL): 1,225.41
Weather: sunny and warm

Ambient Readings	Start	Finish
Time	1425	1441
Pressure (psia)	14.50	14.04
Temperature (°C)	17.20	17.20

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	163.00	221.12	163.01	20.80	1429		
							207.33	1018.08
4	564	110.77	169.45	110.85	21.01	1435		
							206.53	1018.88
3	424	50.03	109.36	50.02	20.27	1436		
							205.16	1020.25
2	330	14.23	70.01	14.20	19.26	1437		
							201.94	1023.47
1	270	14.16	44.59	14.16	18.41	1439		
							200.58	1024.83

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 2/21/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (ft. +MSL): 1,142.94
Weather: clear and sunny

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

Ambient Readings	Start	Finish
Time	1306	1327
Pressure (psia)	14.11	14.07
Temperature (°C)	20.29	17.09

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	498	171.73	169.49	171.73	19.42	1320		
							139.54	1003.40
4	444	148.35	146.03	148.32	19.56	1321		
							139.66	1003.28
3	392	125.74	128.04	125.77	19.52	1322		
							129.16	1013.78
2	314	91.93	94.32	91.91	19.42	1324		
							128.96	1013.98
1	242	60.67	66.73	60.66	18.98	1326		
							120.61	1022.33

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 2/21/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,165.05
Weather: clear and sunny

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

Ambient Readings	Start	Finish
Time	1455	1511
Pressure (psia)	14.07	14.07
Temperature (°C)	18.43	17.27

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	321.10	336.16	321.11	20.11	1500		
							156.94	1008.11
4	700	234.34	251.40	234.38	21.60	1503		
							152.48	1012.57
3	562	174.53	190.40	174.55	21.33	1505		
							155.21	1009.84
2	392	100.83	116.48	100.87	20.35	1507		
							155.74	1009.31
1	230	30.54	46.08	30.53	17.91	1510		
							156.15	1008.90

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 2/21/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,059.10
Weather: clear and sunny

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

Ambient Readings	Start	Finish
Time	1119	1129
Pressure (psia)	14.18	14.13
Temperature (°C)	20.00	18.89

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	125.42	166.08	125.42	19.91	1121		
							21.57	1037.53
4	310	98.49	139.26	98.47	20.09	1122		
							21.44	1037.66
3	240	68.45	109.42	68.44	19.97	1124		
							20.28	1038.82
2	161	34.06	75.31	34.06	19.50	1125		
							19.97	1039.13
1	90	14.19	44.17	14.19	18.96	1128		
							20.81	1038.29

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 2/21/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: partly cloudy and cool

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	0756	0809
Pressure (psia)	14.06	14.08
Temperature (°C)	16.83	20.25

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	200.58	208.26	200.60	19.27	759		
							139.98	1037.00
4	467	148.19	156.67	148.17	20.85	0802		
							138.00	1038.98
3	389	114.39	124.06	114.39	21.05	0804		
							135.23	1041.75
2	329	88.39	98.04	88.36	20.98	0806		
							135.26	1041.72
1	245	51.53	61.82	51.49	20.69	0807		
							134.82	1042.16

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 2/21/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,108.84
Weather: partly cloudy and cool

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

Ambient Readings	Start	Finish
Time	0732	0740
Pressure (psia)	14.18	14.15
Temperature (°C)	11.85	19.30

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	542	204.18	217.35	204.17	16.92	738		
							73.29	1035.55
4	445	162.17	175.54	162.17	18.28	0739		
							72.74	1036.10
3	319	107.59	122.20	107.56	19.13	0741		
							69.80	1039.04
2	254	79.39	94.18	79.36	19.36	0742		
							69.44	1039.40
1	174	44.63	60.83	44.65	19.37	0743		
							66.38	1042.46

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 2/21/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,200.94
Weather: sunny and cool

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

Ambient Readings	Start	Finish
Time	0941	1000
Pressure (psia)	14.07	14.18
Temperature (°C)	17.71	21.42

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	678	231.64	235.10	231.66	20.73	947		
							168.08	1032.86
4	554	177.95	182.39	177.99	21.36	0949		
							165.69	1035.25
3	435	126.43	131.99	126.43	21.44	0952		
							162.96	1037.98
2	373	99.56	105.58	99.55	21.41	0955		
							161.89	1039.05
1	279	58.84	66.96	58.85	21.52	0957		
							156.98	1043.96

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 2/21/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (ft. + MSL): 934.52
Weather: sunny and cool

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

Ambient Readings	Start	Finish
Time	1529	1545
Pressure (psia)	14.22	14.20
Temperature (°C)	17.54	19.82

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	212.05	208.23	212.03	19.74	1532		
							265.42	669.10
4	633	177.50	172.33	177.54	20.57	1534		
							268.24	666.28
3	503	121.28	119.14	121.27	20.79	1536		
							260.95	673.57
2	423	86.55	87.12	86.56	20.57	1538		
							254.82	679.70
1	358	58.30	59.80	58.31	20.09	1540		
							252.85	681.67

INSIGHT, Inc.
Piezometric Pressure/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 2/21/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (ft. + MSL): 1,059.08
Weather: sunny and cool

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

Ambient Readings	Start	Finish
Time	1556	1604
Pressure (psia)	14.17	14.16
Temperature (°C)	18.23	18.44

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings: Inside Casing (psia)	Fluid Pressure Readings: Outside Casing (psia)	Fluid Pressure Readings: Inside Casing (psia)	Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
2	215	71.68	83.25	71.65	18.32	1602	55.63	1003.45
1	135	36.89	44.58	36.89	18.63	1603	64.84	994.24

INSIGHT
Environmental, Engineering and Construction, Inc.

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

Pre-Event Shallow Well Sounding Log

Project Name: JPL GW Monitoring 1Q11 | **Project No.: 4-73805**

WELL #	*DATE*	*TIME*	*DEPTH (FT.)*
MW-1	2/21/2011	1215	26.80
MW-5	2/21/2011	642	25.61
MW-6	2/21/2011	626	146.61
MW-7	2/21/2011	608	168.13
MW-8	2/21/2011	620	93.73
MW-9	2/21/2011	1210	16.21
MW-10	2/21/2011	551	44.98
MW-13	2/21/2011	616	140.34
MW-15	2/21/2011	603	30.42
MW-16	2/21/2011	612	192.57

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73803
Date: 3/10/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Well ID: MW-3
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay
Elevation of Datum (ft. + MSL): 1,100.34
Weather: sunny and warm

Ambient Readings	Start	Finish
Time	1133	1143
Pressure (psia)	14.11	14.15
Temperature (°C)	25.73	19.18

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	236.25	260.65	236.34	23.60	1136		
							84.23	1016.11
4	558	195.10	219.58	195.15	23.60	1138		
							83.98	1016.36
3	346	102.96	131.95	103.00	22.94	1140		
							74.14	1026.20
2	252	62.12	92.62	62.14	21.91	1141		
							70.88	1029.46
1	172	27.38	61.86	27.40	20.67	1142		
							61.84	1038.50

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

Project Name: JPL Pasadena
Project No: 4-73803
Date: 3/10/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (ft. +MSL): 1,082.84
Weather: sunny and warm

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

Ambient Readings	Start	Finish
Time	1525	1540
Pressure (psia)	14.10	14.11
Temperature (°C)	20.84	19.10

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	148.30	209.91	148.31	21.30	1529		
							61.27	1021.57
4	392	95.67	157.56	95.68	21.83	1532		
							61.04	1021.80
3	322	65.20	127.23	65.21	21.19	1536		
							61.01	1021.83
2	240	29.47	93.14	29.48	20.78	1537		
							57.65	1025.19
1	150	14.23	63.35	14.24	20.23	1539		
							36.38	1046.46

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73803
Date: 3/10/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: sunny and warm

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	1048	1059
Pressure (psia)	14.13	14.18
Temperature (°C)	26.53	18.96

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	639	234.04	239.38	234.02	23.51	1053		
							119.35	1019.95
4	524	184.56	196.68	184.59	23.18	1054		
							102.86	1036.44
3	429	143.21	155.60	143.68	22.45	1055		
							102.63	1036.67
2	259	70.11	84.24	70.11	20.98	1057		
							97.26	1042.04
1	149	22.84	43.55	22.85	19.74	1058		
							81.13	1058.17

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

Project Name: JPL Pasadena
Project No: 4-73803
Date: 3/10/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,102.14
Weather: sunny and warm

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

Ambient Readings	Start	Finish
Time	1504	1518
Pressure (psia)	14.13	14.12
Temperature (°C)	22.81	17.86

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	548	213.95	210.46	213.96	21.75	1510		
							95.07	1007.07
4	436	165.31	168.75	165.30	21.55	1511		
							79.29	1022.85
3	323	116.20	120.16	116.13	20.59	1514		
							78.39	1023.75
2	243	81.29	87.48	81.29	19.69	1515		
							73.78	1028.36
1	140	36.39	52.01	36.36	18.66	1517		
							52.61	1049.53

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

Project Name: JPL Pasadena | Well ID: MW-14
Project No: 4-73803 | Probe Type: Westbay
Date: 3/10/11 | Serial No.: 2508
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC | Casing Size/Type: 1.5" Westbay
Elevation of Datum (Ft. + MSL): 1,173.47
Weather: sunny and warm

Ambient Readings	Start	Finish
Time	0805	0818
Pressure (psia)	14.15	14.18
Temperature (°C)	20.21	19.64

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	185.02	192.49	185.01	21.49	810		
							128.57	1044.90
4	456	148.47	156.15	148.47	21.47	0812		
							128.41	1045.06
3	382	116.30	124.09	116.27	20.98	0813		
							128.37	1045.10
2	277	70.61	78.55	70.59	20.53	0815		
							128.43	1045.04
1	207	40.11	48.07	40.10	20.06	0816		
							128.75	1044.72

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

Project Name: JPL Pasadena
Project No: 4-73803
Date: 3/10/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,191.21
Weather: sunny and warm

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

Ambient Readings	Start	Finish
Time	1236	1248
Pressure (psia)	14.08	14.09
Temperature (°C)	22.31	16.03

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	241.77	251.89	241.73	20.73	1240		
							177.37	1013.84
4	582	179.48	187.31	179.46	20.75	1242		
							182.36	1008.85
3	468	129.98	139.79	130.01	19.84	1243		
							177.99	1013.22
2	370	87.48	99.14	87.48	18.88	1245		
							173.77	1017.44
1	250	35.29	54.19	35.29	17.89	1246		
							157.47	1033.74

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73803
Date: 3/10/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Well ID: MW-18
Probe Type: Westbay
Serial No.:
Casing Size/Type: 1.5" Westbay
Elevation of Datum (Ft. + MSL): 1,225.41
Note: sunny and warm

Ambient Readings	Start	Finish
Time	1311	1323
Pressure (psia)	14.07	14.06
Temperature (°C)	23.91	17.45

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	684	162.92	220.98	162.92	22.44	1315		
							206.66	1018.75
4	564	110.81	169.40	110.83	21.78	1317		
							205.65	1019.76
3	424	49.91	108.26	49.96	20.94	1319		
							206.70	1018.71
2	330	14.22	70.62	14.26	18.92	1320		
							199.54	1025.87
1	270	14.18	45.59	14.21	18.17	1322		
							197.28	1028.13

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

Project Name: JPL Pasadena
Project No: 4-73803
Date: 3/10/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (ft. +MSL): 1,142.94
Weather: sunny and warm

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

Ambient Readings	Start	Finish
Time	1214	1224
Pressure (psia)	14.04	14.13
Temperature (°C)	24.06	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	498	171.71	168.64	171.77	21.93	1216		
							141.34	1001.60
4	444	148.32	145.19	147.36	21.40	1218		
							141.44	1001.50
3	392	125.78	128.36	125.78	20.43	1220		
							128.26	1014.68
2	314	91.93	94.75	91.94	20.03	1222		
							127.80	1015.14
1	242	60.64	67.41	60.65	19.52	1223		
							118.88	1024.06

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

Project Name: JPL Pasadena
Project No: 4-73803
Date: 3/10/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,165.05
Weather: sunny and warm

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

Ambient Readings	Start	Finish
Time	1332	1348
Pressure (psia)	14.06	14.06
Temperature (°C)	21.79	17.59

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	320.99	336.85	320.99	21.58	1336		
							155.32	1009.73
4	700	234.07	252.08	234.41	22.32	1338		
							150.89	1014.16
3	562	174.54	190.83	174.63	21.14	1341		
							154.19	1010.86
2	392	100.93	117.18	100.89	20.10	1343		
							154.10	1010.95
1	230	30.44	46.83	30.49	18.55	1345		
							154.40	1010.65

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

Project Name: JPL Pasadena | Well ID: MW-21
Project No: 4-73803 | Probe Type: Westbay
Date: 3/10/11 | Serial No.: 2508
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC | Casing Size/Type: 1.5" Westbay
Elevation of Datum (Ft. + MSL): 1,059.10
Weather: sunny and warm

Ambient Readings	Start	Finish
Time	0831	0838
Pressure (psia)	14.04	14.22
Temperature (°C)	20.31	19.27

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	125.35	167.04	125.34	20.22	832		
							19.03	1040.07
4	310	98.39	140.19	98.38	20.36	0834		
							18.97	1040.13
3	240	68.37	110.30	68.38	20.12	0835		
							17.93	1041.17
2	161	33.99	76.17	33.98	19.76	0836		
							17.67	1041.43
1	90	14.31	49.93	14.28	19.33	0837		
							7.20	1051.90

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

Project Name: JPL Pasadena
Project No: 4-73803
Date: 3/10/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,176.98
Weather: sunny and warm

Well ID: MW-22
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	0739	0750
Pressure (psia)	14.17	14.16
Temperature (°C)	18.55	20.26

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	588	200.59	208.19	200.60	19.92	741		
							140.40	1036.58
4	467	148.19	156.92	148.20	20.79	0743		
							137.68	1039.30
3	389	114.39	124.90	114.39	20.99	0744		
							133.55	1043.43
2	329	88.38	98.93	88.38	20.94	0747		
							133.46	1043.52
1	245	52.39	68.95	52.37	20.65	0749		
							118.62	1058.36

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

Project Name: JPL Pasadena
Project No: 4-73803
Date: 3/10/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,108.84
Weather: sunny and warm

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

Ambient Readings	Start	Finish
Time	0718	0731
Pressure (psia)	14.17	14.22
Temperature (°C)	17.65	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	204.10	217.02	204.09	19.13	720		
							74.03	1034.81
4	445	162.09	175.51	162.10	20.13	0724		
							72.79	1036.05
3	319	107.51	122.95	107.52	20.40	0726		
							68.04	1040.80
2	254	79.31	95.01	79.30	20.36	0728		
							67.50	1041.34
1	174	44.61	61.89	44.60	20.07	0730		
							63.91	1044.93

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73803
Date: 3/10/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,200.94
Weather: sunny and warm

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

Ambient Readings	Start	Finish
Time	0903	1023
Pressure (psia)	14.15	14.18
Temperature (°C)	19.43	21.69

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	231.70	234.65	231.71	20.85	905		
							169.31	1031.63
4	554	178.02	182.36	178.02	21.49	0907		
							165.94	1035.00
3	435	126.48	132.23	126.48	21.50	0908		
							162.59	1038.35
2	373	99.60	105.49	99.57	21.84	1021		
							162.28	1038.66
1	279	58.90	68.08	58.89	21.72	1022		
							154.58	1046.36

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73803
Date: 3/10/11
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (ft. + MSL): 934.52
Weather: sunny and warm

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

Ambient Readings	Start	Finish
Time	1359	14.16
Pressure (psia)	14.20	14.20
Temperature (°C)	21.05	20.08

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	211.59	208.33	211.71	22.20	1407		
							265.14	669.38
4	633	177.25	172.45	177.24	22.22	1409		
							267.92	666.60
3	503	121.22	119.28	121.04	21.48	1411		
							260.58	673.94
2	423	86.26	87.25	86.30	20.97	1413		
							254.47	680.05
1	358	58.14	59.90	58.04	20.55	1415		
							252.57	681.95

INSIGHT, Inc.
Piezometric Pressure/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Well ID: MW-26
Project No: 4-73803
Probe Type: Westbay
Date: 3/10/11
Serial No.: 2508
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Casing Size/Type: 1.5" Westbay
Elevation of Datum (ft. + MSL): 1,059.08
Weather: sunny and warm

Ambient Readings	Start	Finish
Time	1440	1445
Pressure (psia)	14.12	14.15
Temperature (°C)	24.46	19.78

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings: Inside Casing (psia)	Fluid Pressure Readings: Outside Casing (psia)	Fluid Pressure Readings: Inside Casing (psia)	Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
2	215	71.63	83.87	71.63	22.87	1442	54.09	1004.99
1	135	36.82	45.24	36.82	20.77	1443	63.21	995.87

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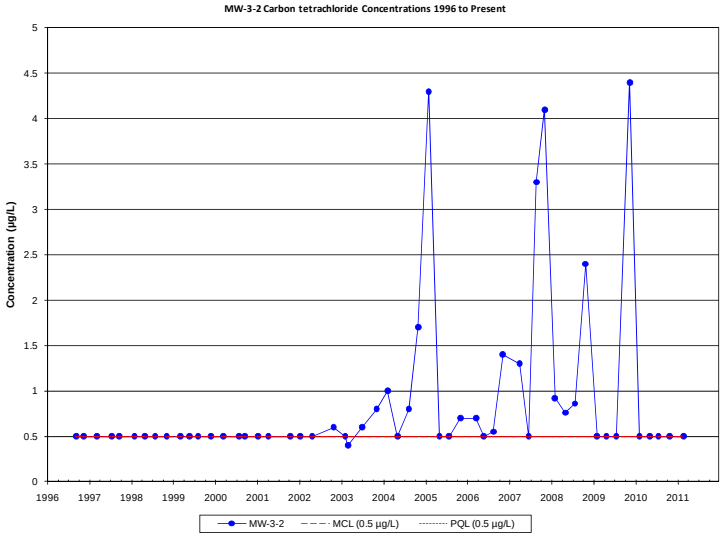
Post-Event Shallow Well Sounding Log

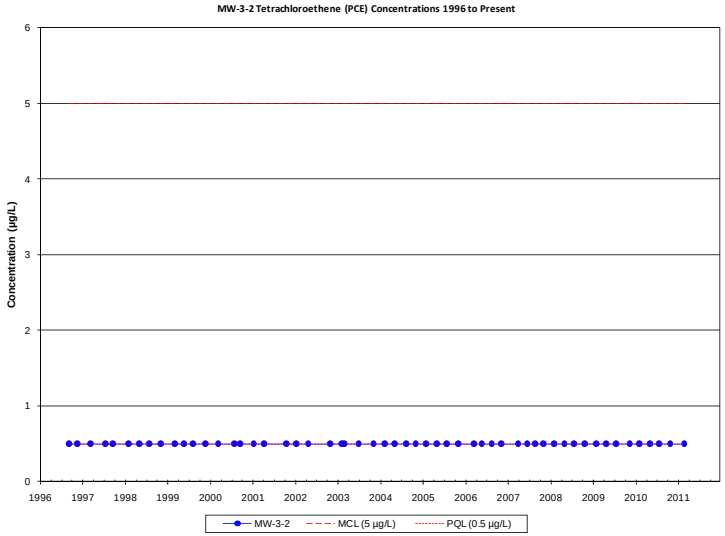
Project Name: JPL GW Monitoring 1Q11

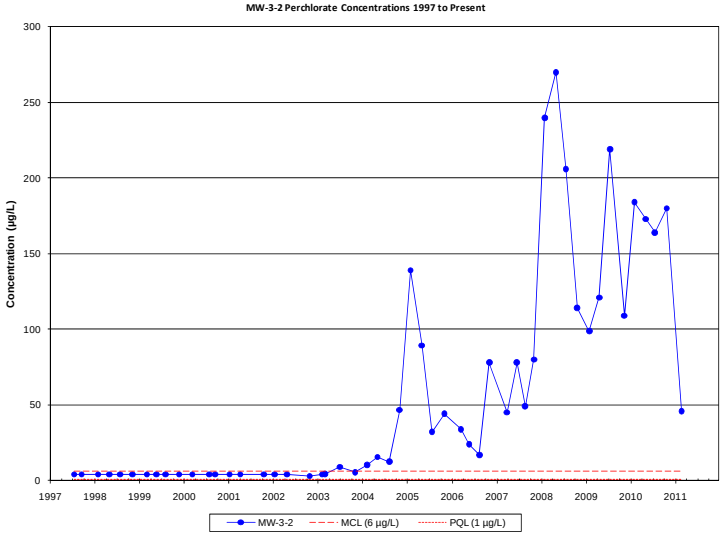
Project No.: 4-73805

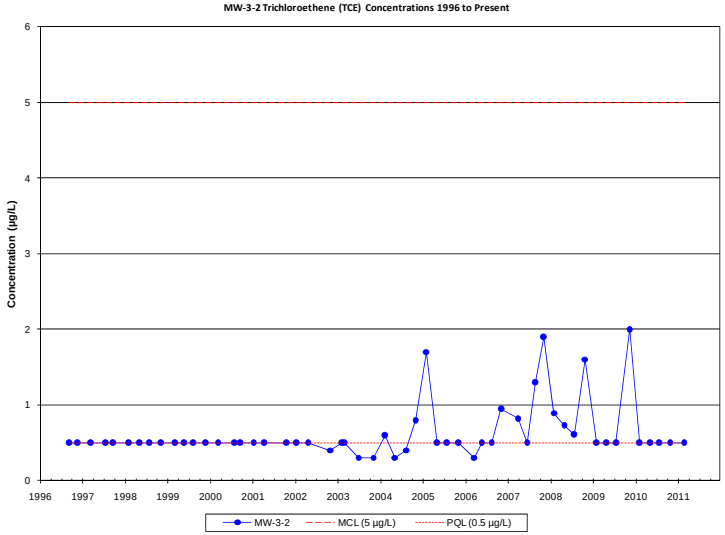
WELL #	*DATE*	*TIME*	*DEPTH (FT.)*
MW-1	3/10/2011	1112	26.00
MW-5	3/10/2011	632	23.82
MW-6	3/10/2011	624	144.25
MW-7	3/10/2011	612	165.06
MW-8	3/10/2011	602	90.74
MW-9	3/10/2011	1102	16.27
MW-10	3/10/2011	629	42.98
MW-13	3/10/2011	557	137.48
MW-15	3/10/2011	606	29.99
MW-16	3/10/2011	617	189.32

ATTACHMENT 6: TIME SERIES PLOTS

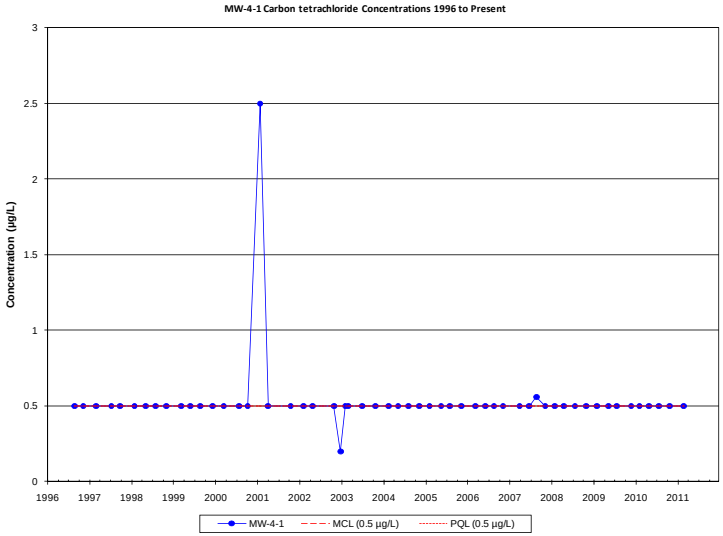


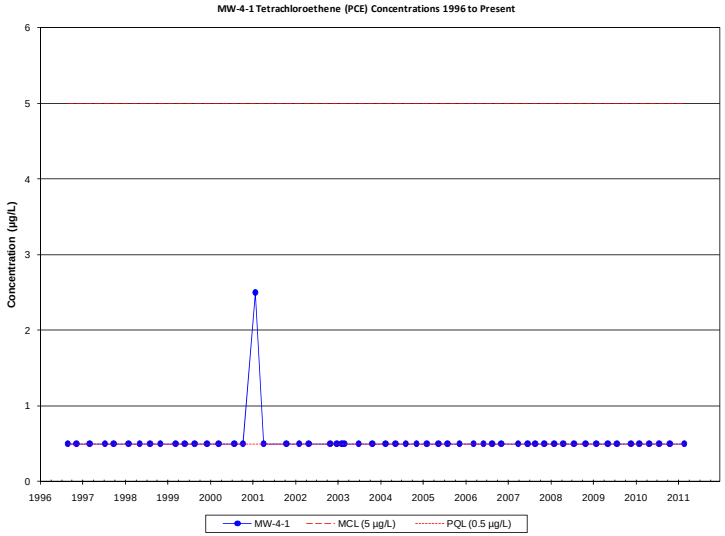


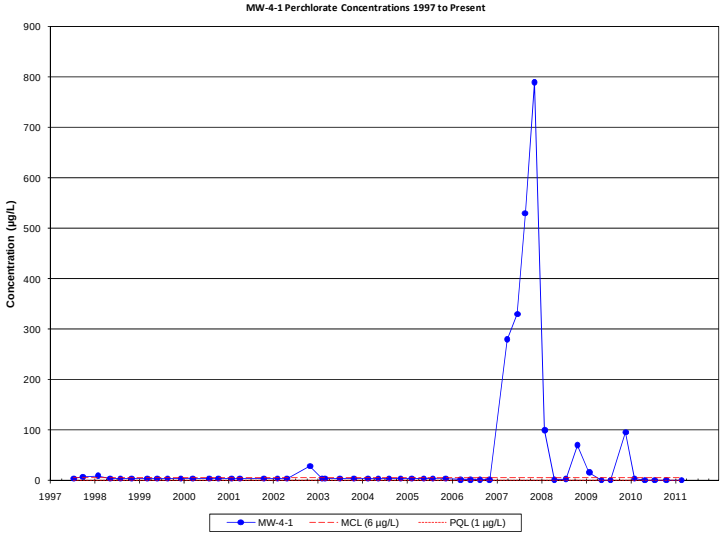


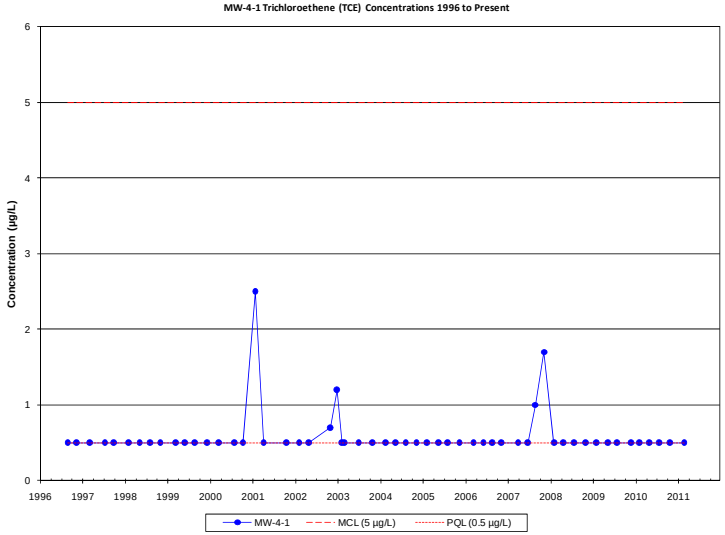


VOCs and Perchlorate Time Series Plots for MW-3-2

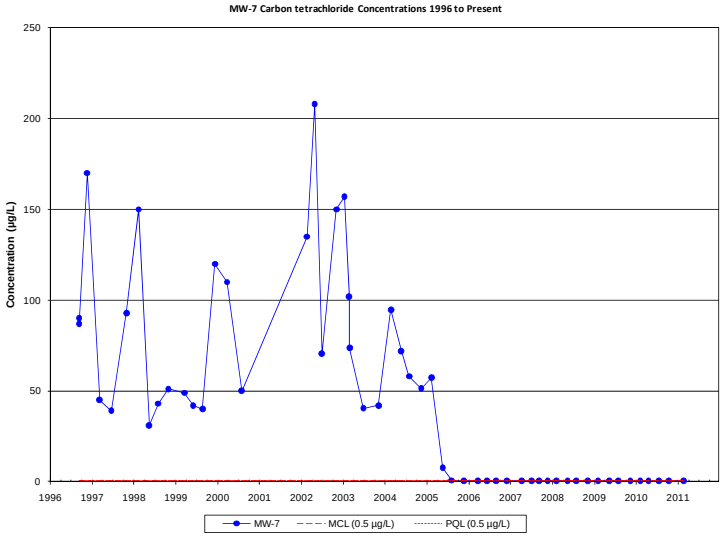


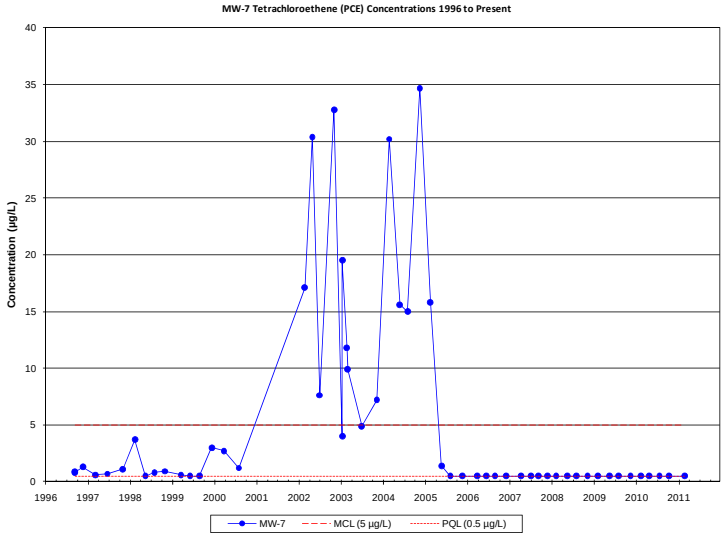


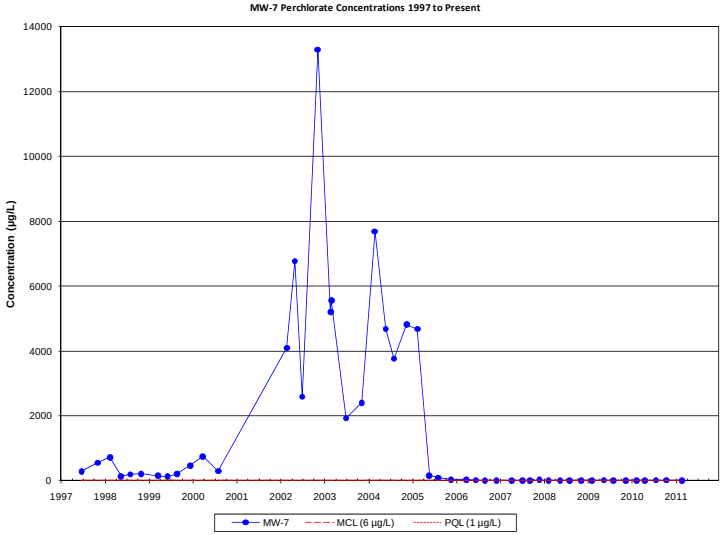


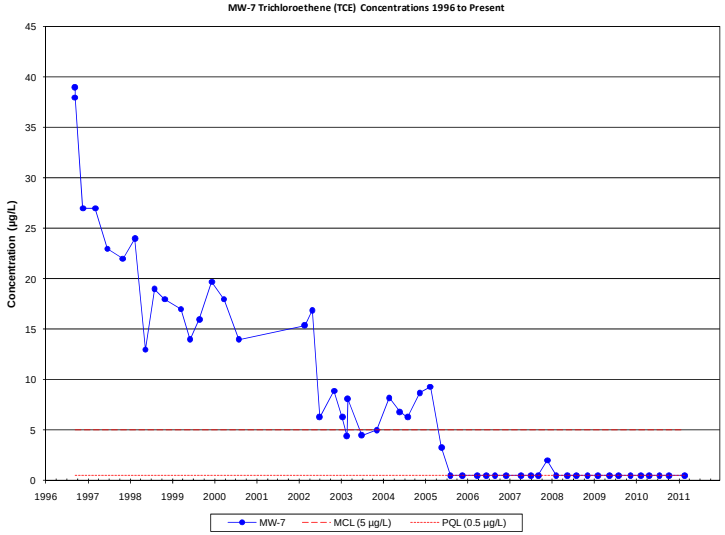


VOCs and Perchlorate Time Series Plots for MW-4-1

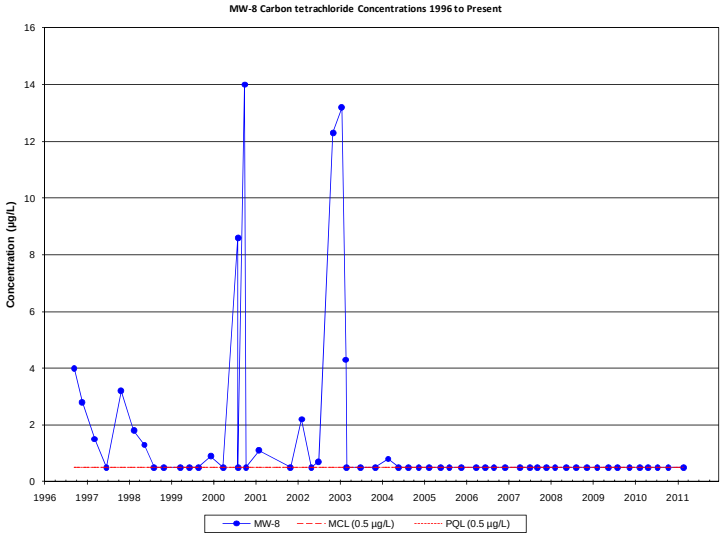


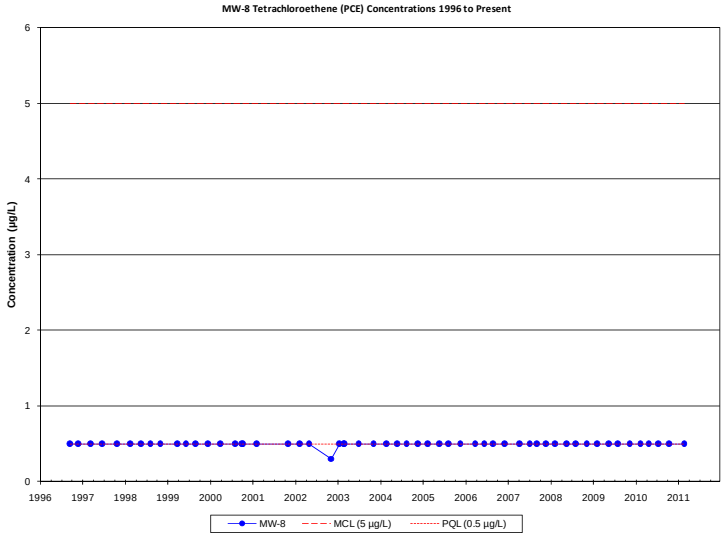


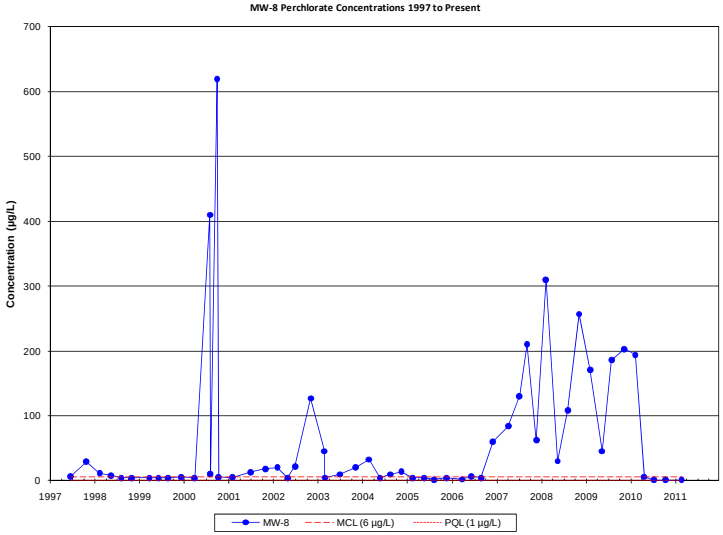


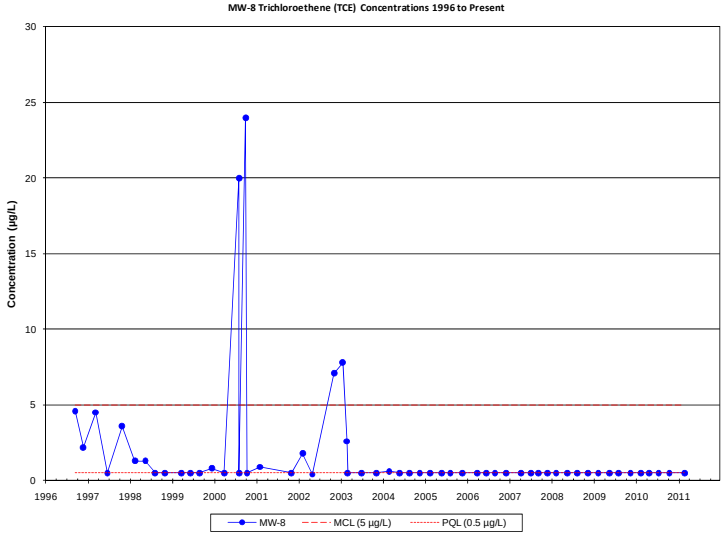


VOCs and Perchlorate Time Series Plots for MW-7

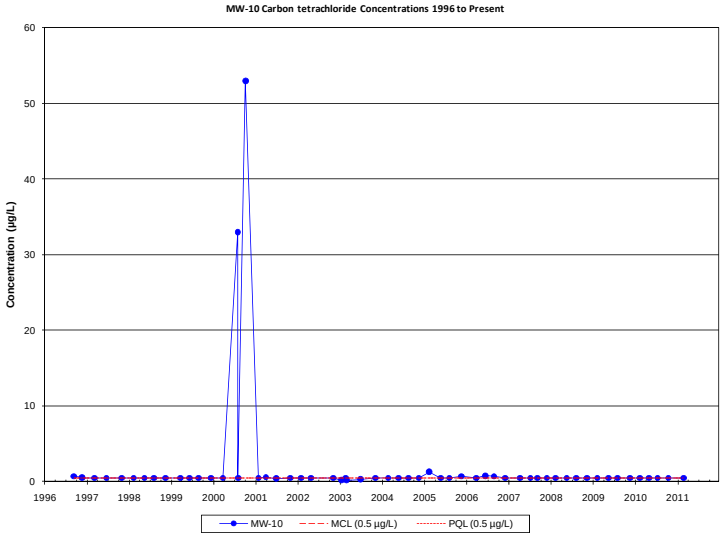


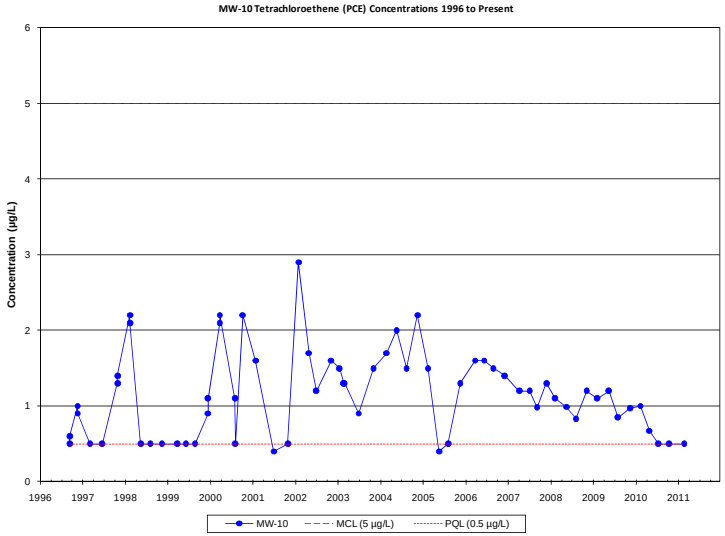


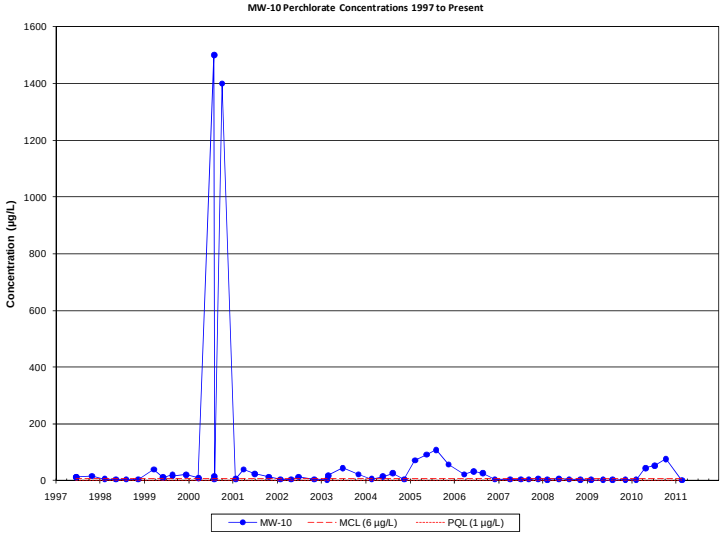


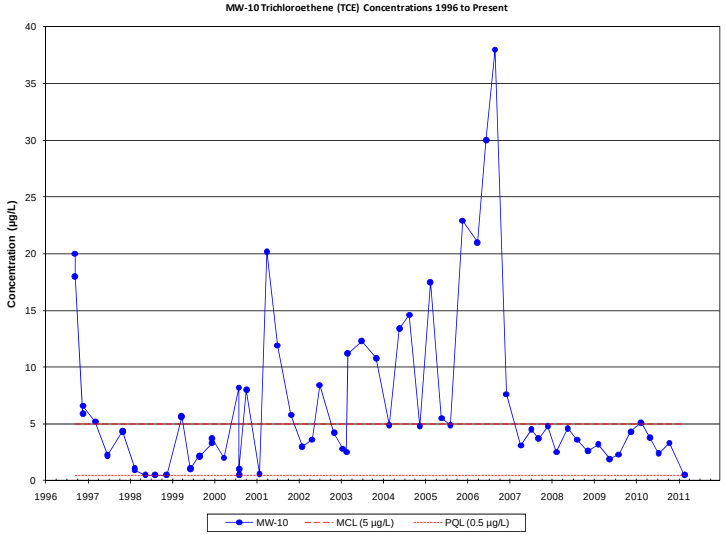


VOCs and Perchlorate Time Series Plots for MW-8

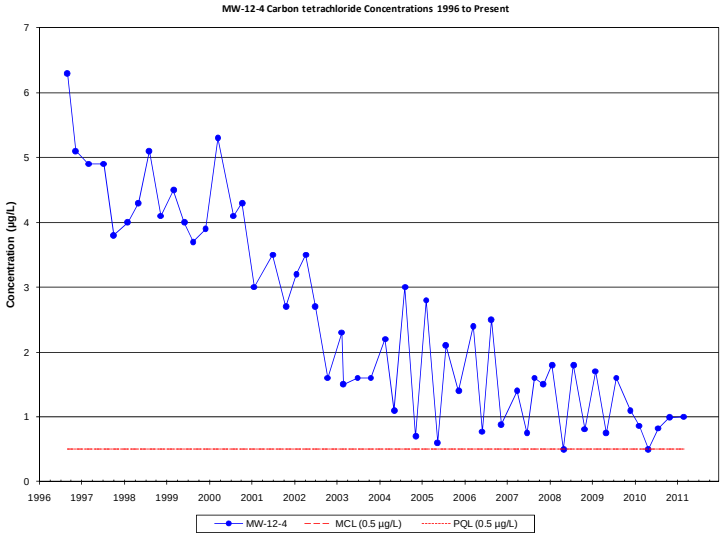


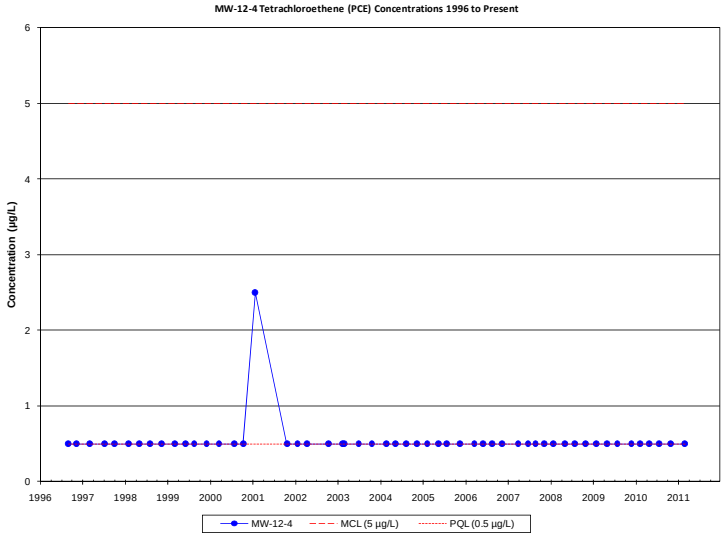


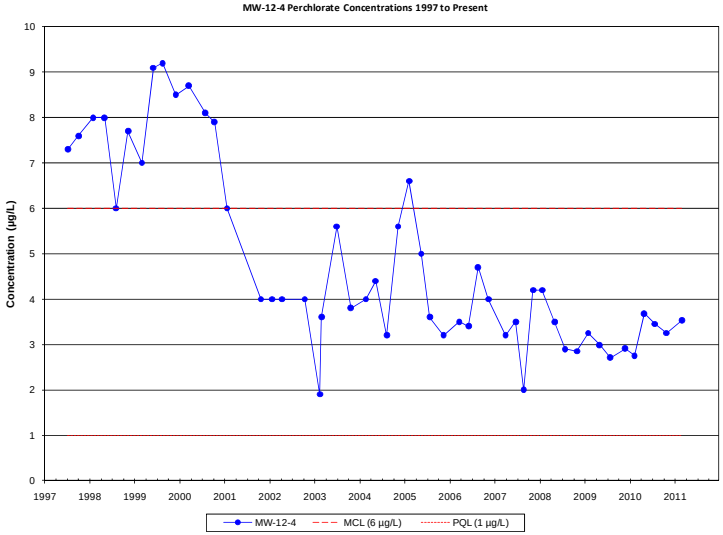


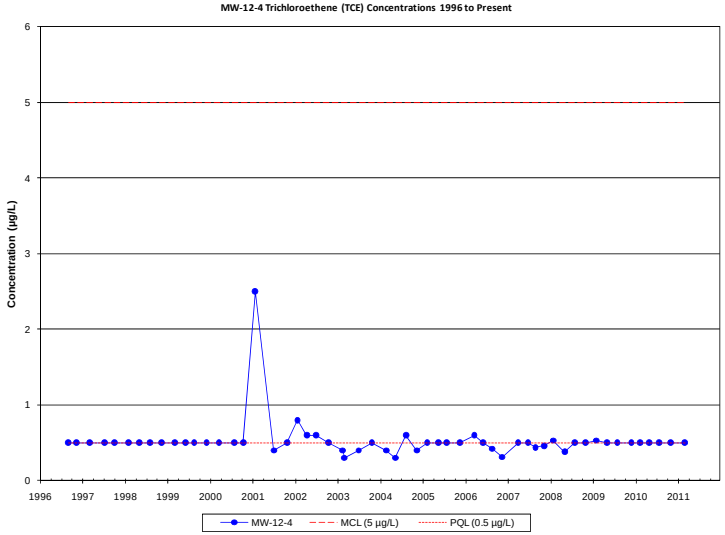


VOCs and Perchlorate Time Series Plots for MW-10

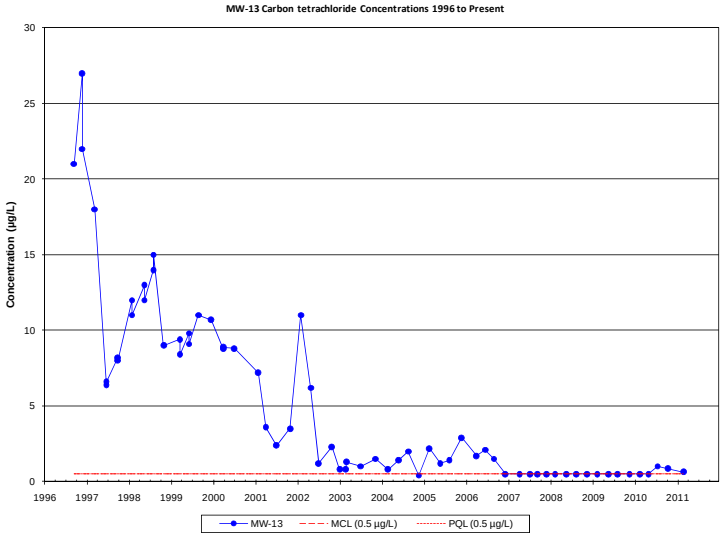


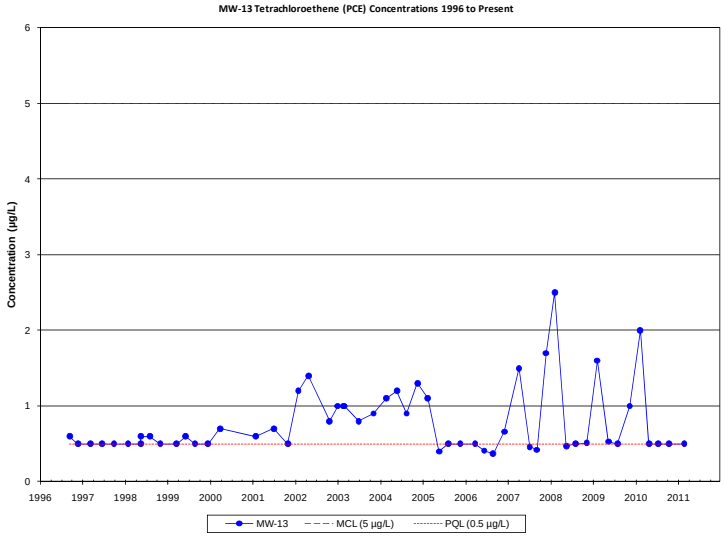


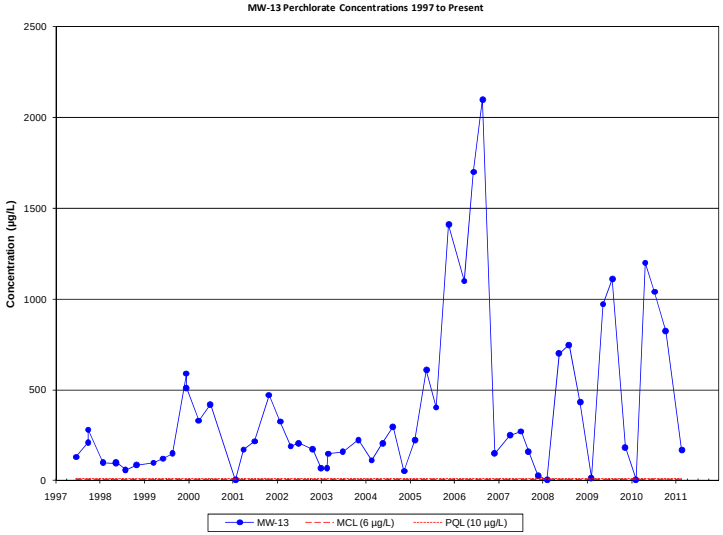


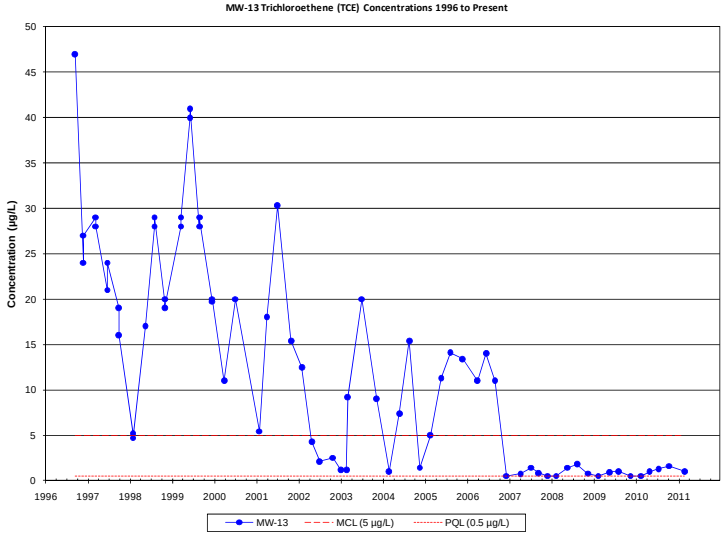


VOCs and Perchlorate Time Series Plots for MW-12-4

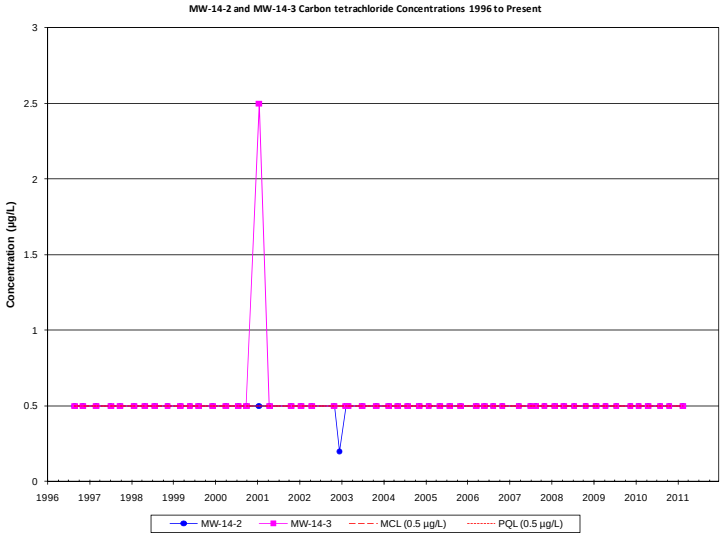


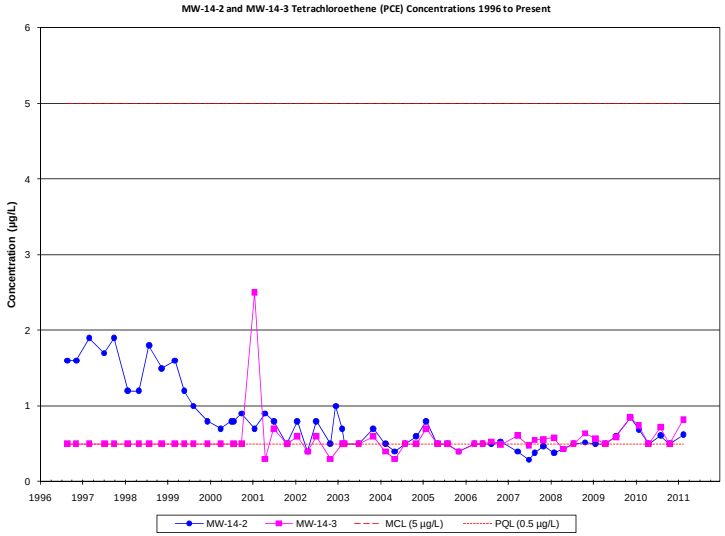


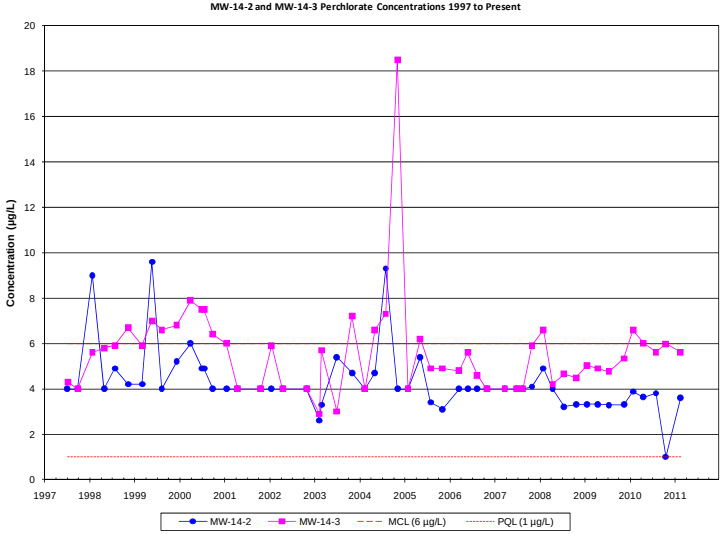


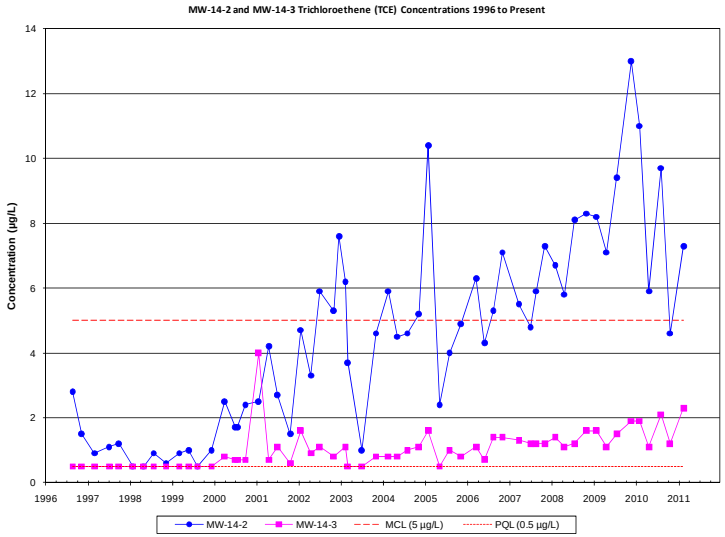


VOCs and Perchlorate Time Series Plots for MW-13

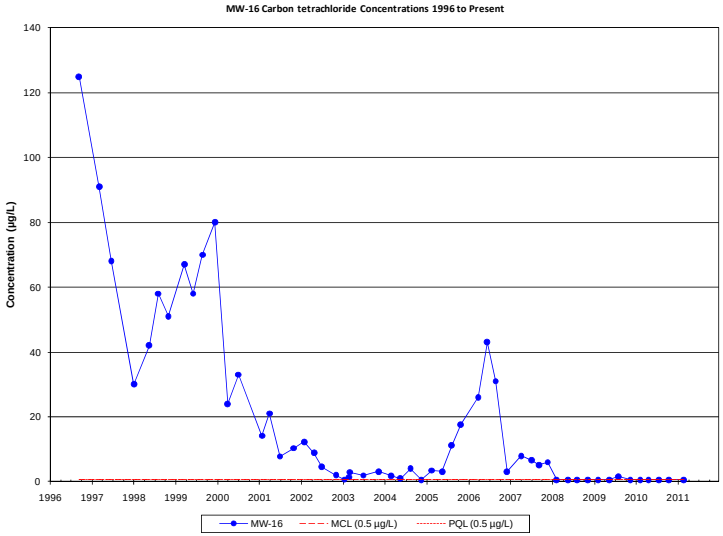


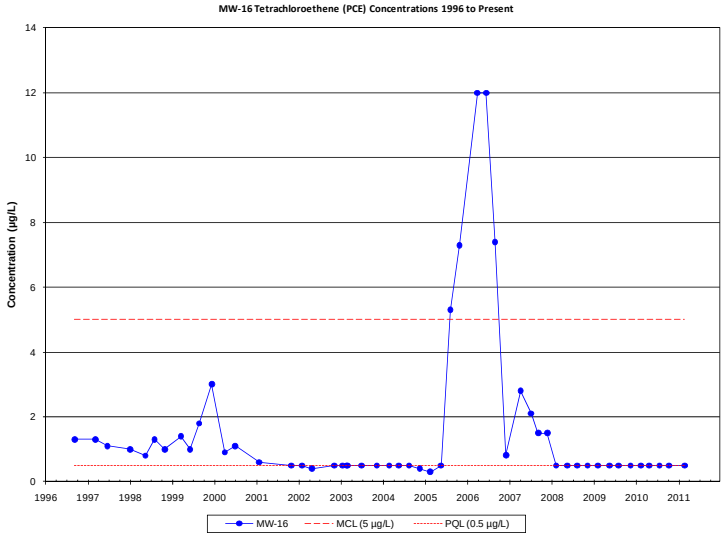


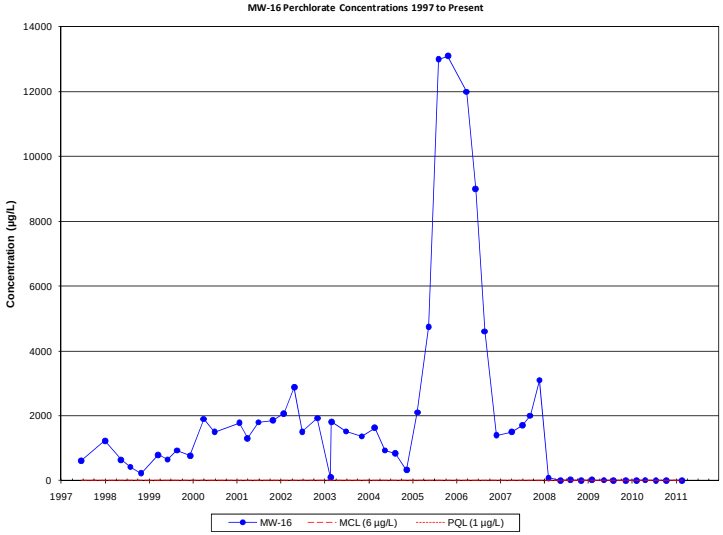


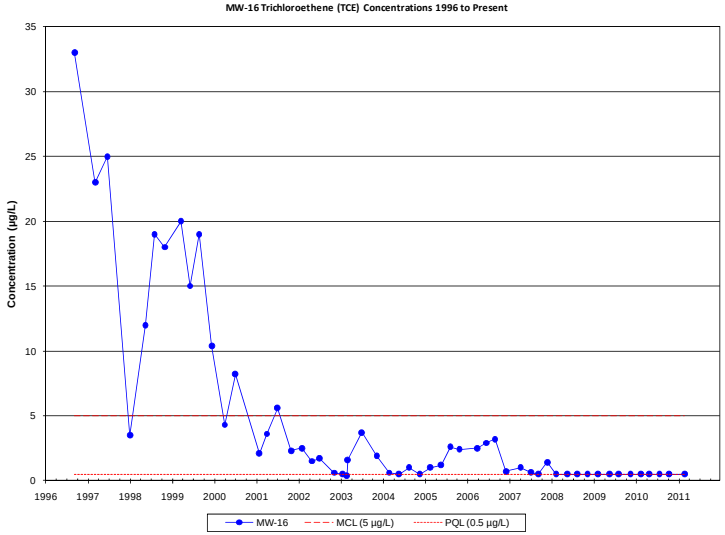


VOCs and Perchlorate Time Series Plots for MW-14-2 and MW-14-3

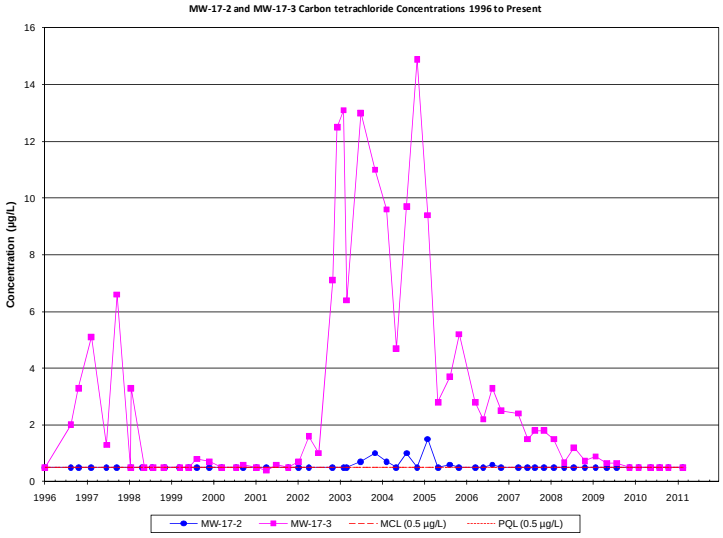


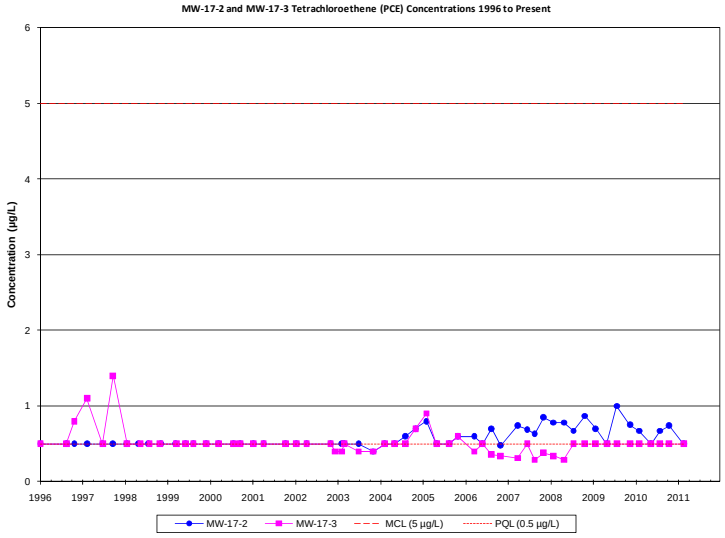


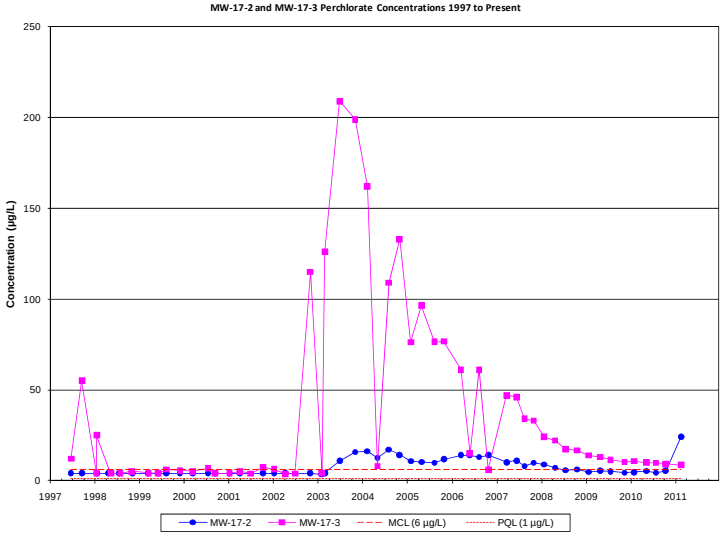


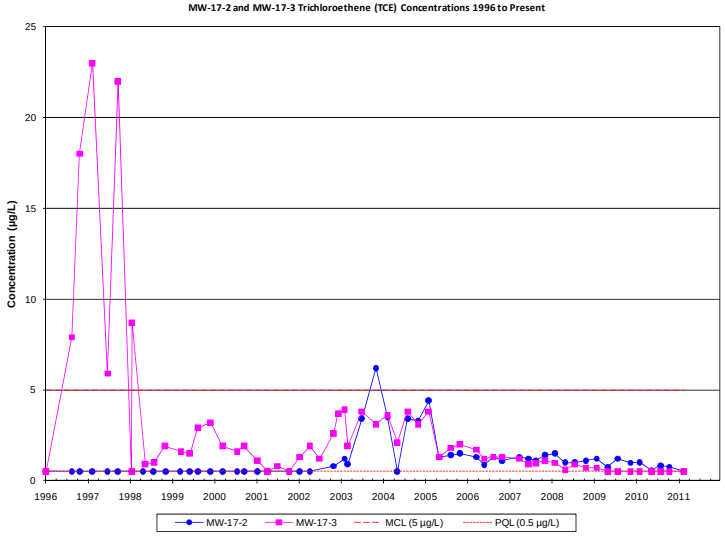


VOCs and Perchlorate Time Series Plots for MW-16

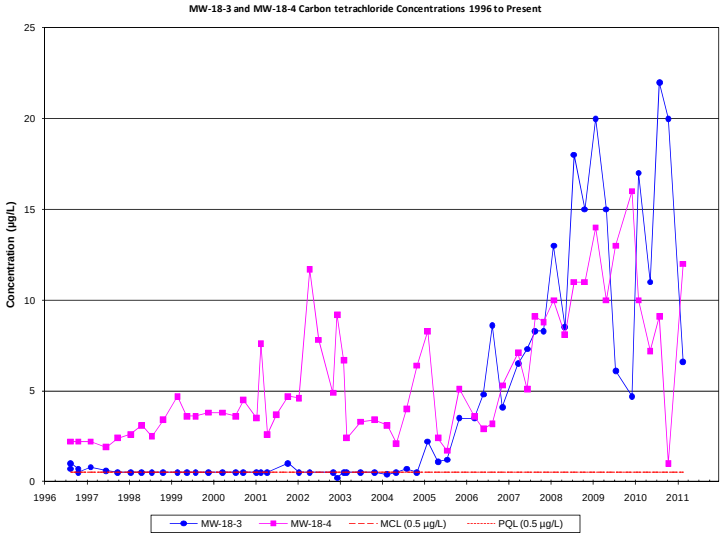


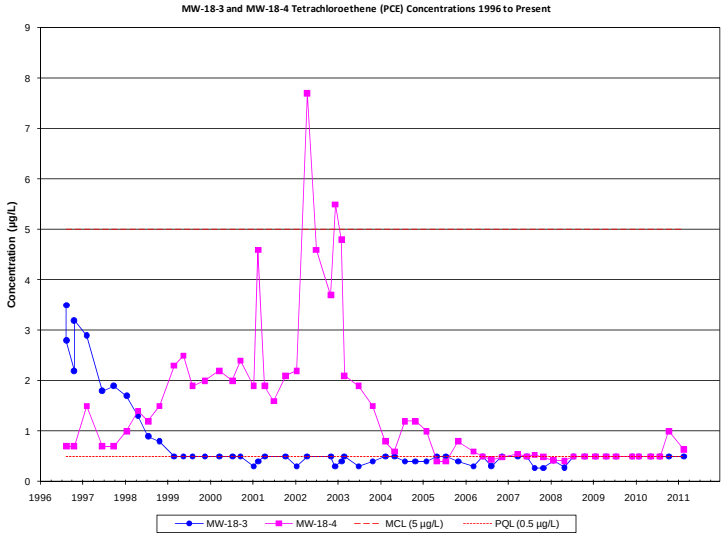


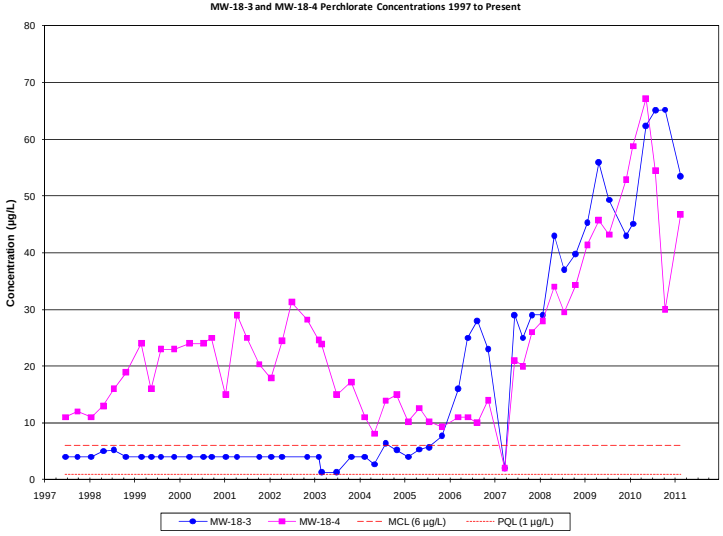


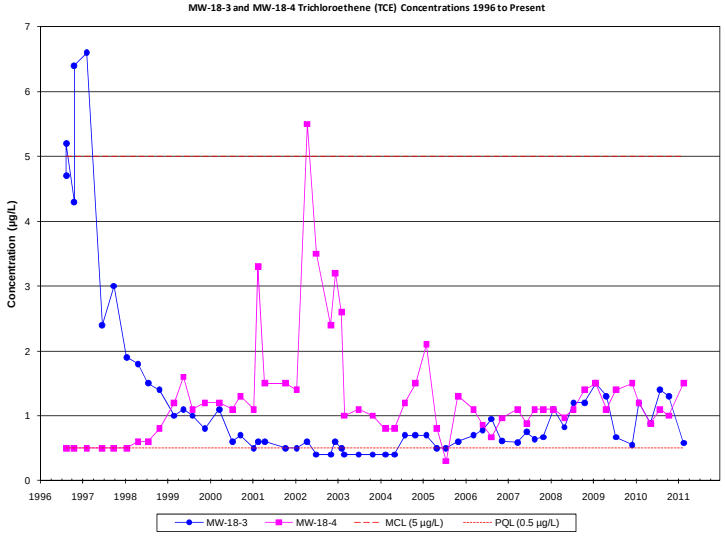


VOCs and Perchlorate Time Series Plots for MW-17-2 and MW-17-3

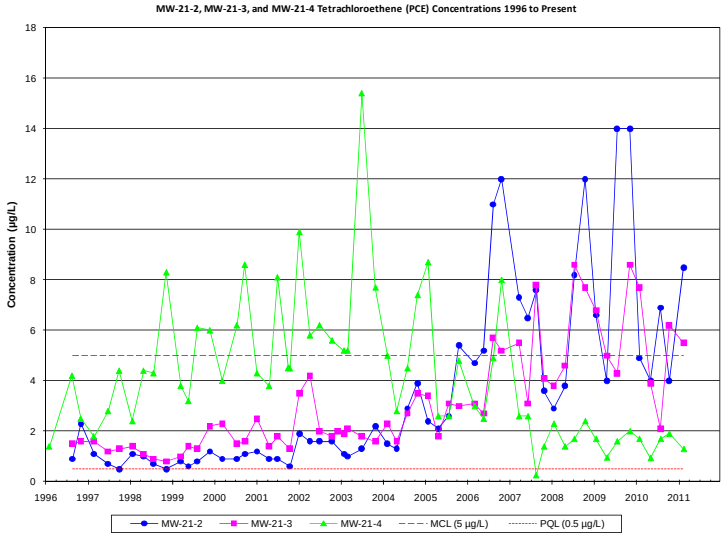


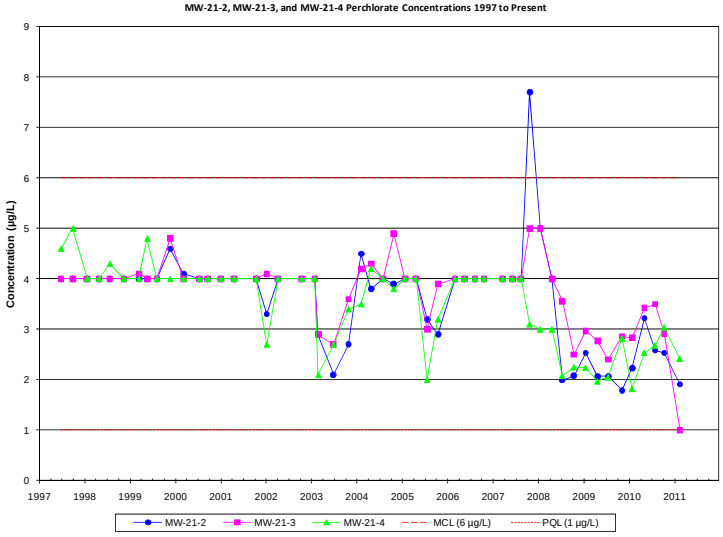


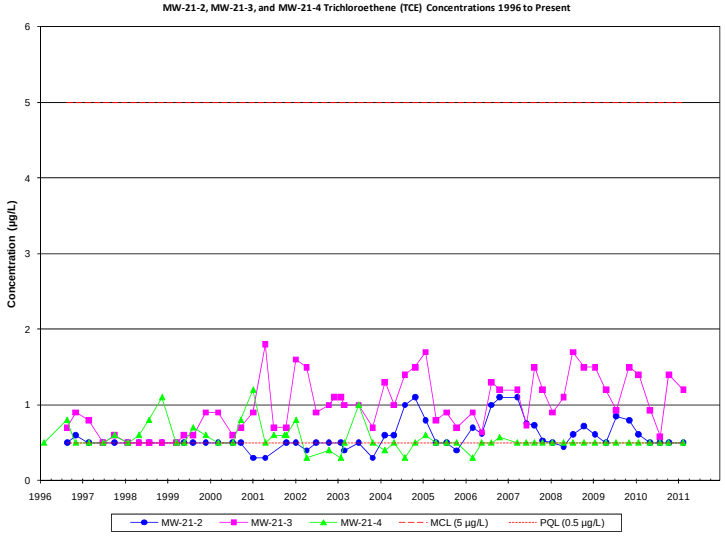




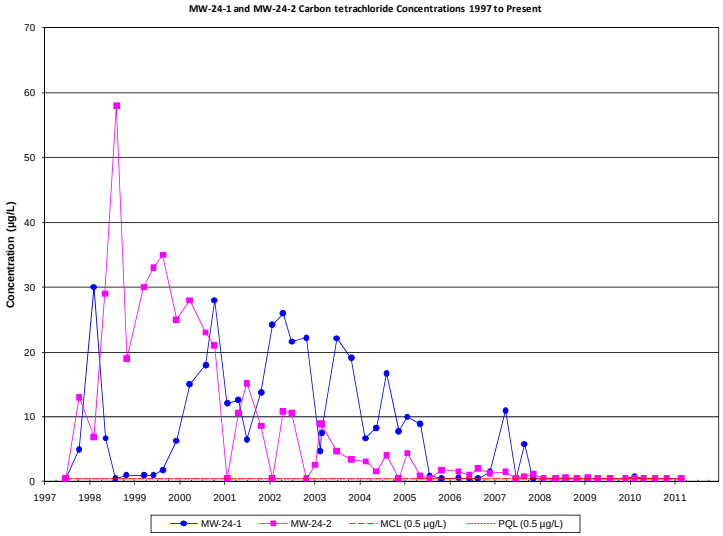
VOCs and Perchlorate Time Series Plots for MW-18-3 and MW-18-4

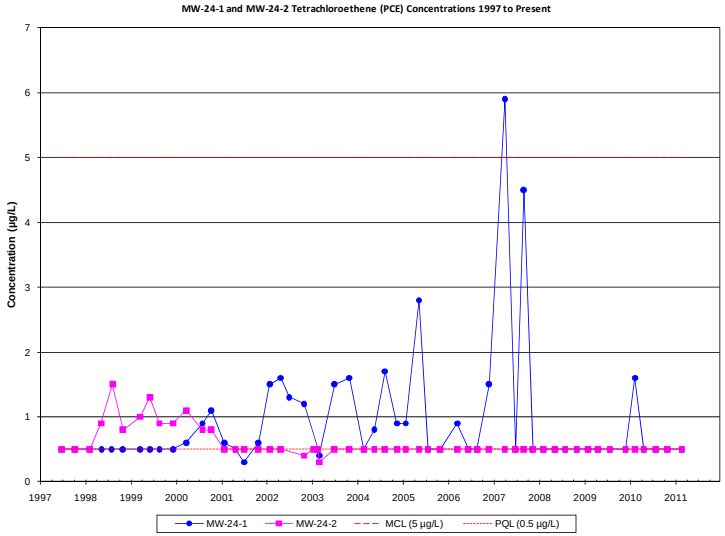


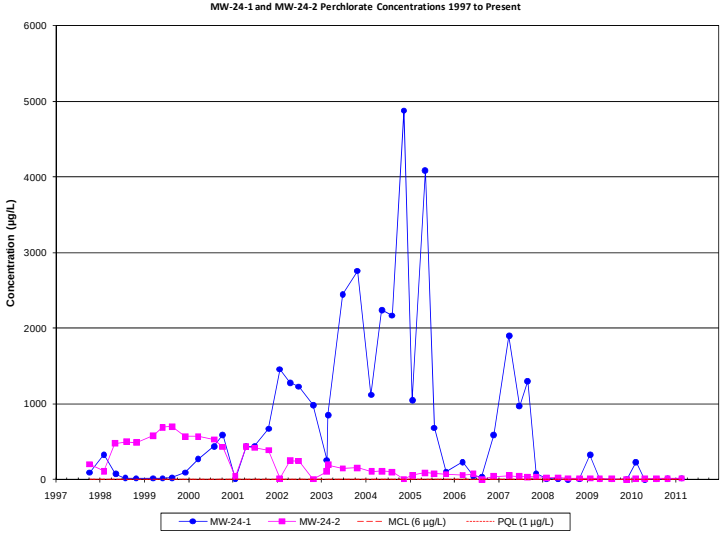


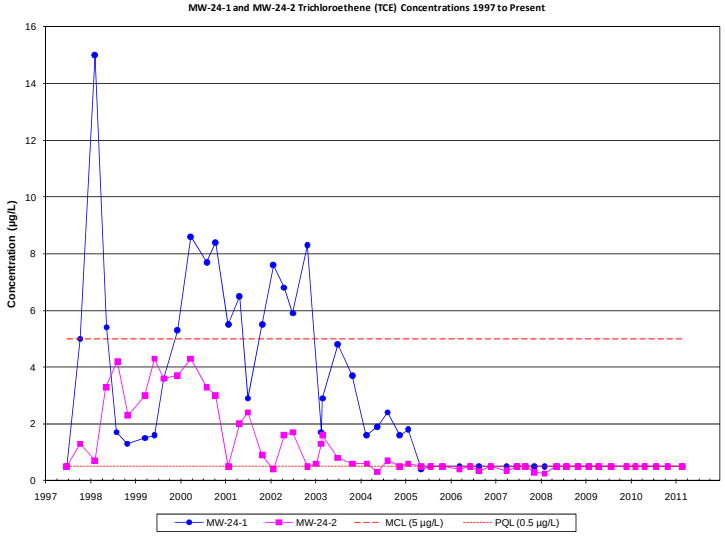


VOCs and Perchlorate Time Series Plots for MW-21-2 and MW-21-3 and MW-21-4









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