ATTACHMENT 4: FIELD LOGS

This attachment contains the groundwater sample collection field logs for the relatively shallow standpipe monitoring wells (MW-1, MW-5 through MW-10, MW-13, MW-15, and MW-16), as well as the field data sheets for the Westbay™ multiport wells (MW-3, MW-4, MW-11, MW-12, MW-14, and MW-17 through MW-26). Groundwater sample collection for the 4th Quarter 2010 sampling event was conducted by Battelle and Insight Environmental, Inc.

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-1

Battelle
The Business of Innovation

505 King Avenue
Columbus, Ohio 43201

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: G005862-2
Contract No:
Sampled By: David Loera
Date: 10-26-10
Weather: Sunny / Warm

PURGE VOLUME CALCULATION (casing volume):

(24.120 - 24.45) X 4² X 3 X 0.0408 = 187.13 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): 90'

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
1226	24.45	Water	to	Surface					Flow Rate 3.9 GPM
1241	26.45	58.5	7.47	0.573	8.11	0.51	16.00	57	
1246	26.17	78	7.45	0.576	5.01	0.47	18.22	24	
1251	26.38	97.5	7.46	0.573	2.45	0.39	16.01	51	
1256	26.38	117	7.46	0.573	2.40	0.36	16.01	48	
1301	26.38	136.5	7.46	0.574	2.38	0.35	16.03	47	
1306	26.39	156	7.46	0.574	2.32	0.34	16.04	47	
1311	26.39	175.5	7.46	0.574	2.30	0.33	16.01	49	

Total Purge Volume: 190 (Gallons) 162.36
Total Discharge: 3.05 (Casing Volumes)
Approx. Purge Rate: 3.9 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1226 Purge time ~~start~~ stop: 1320
Motors MP20 QED, Oakton T-100 Controller:

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): 90'

Original	***Duplicate***	***Blank***	***Other (Trip/Source/)***
Sample ID: MW-1	Sample ID:	Type:	Type:
Sample Time: 1314	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-5

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

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: G005862-2
Contract No:
Sampled By: David Loera
Date: 10-21-10
Weather: Cool / Cloudy / light drizzle

PURGE VOLUME CALCULATION (casing volume):

(140' (TD feet) - 49.79 (90.21) (WL feet)) X 4² (D (inches)) X 3 (# Vols) X 0.0408 = 176.67 (Calculated Purge Volume) Gallons

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
1113	49.79	Water	to	surface					Flow Rate 3.5 GPM
1120	50.06	24.5	6.50	0.372	1.15	0.16	13.91	236	
1127	50.06	49	6.71	0.367	0.95	0.07	13.90	136	
1134	50.06	73.5	6.73	0.370	0.94	0.06	13.88	109	
1141	50.06	98	6.74	0.371	0.90	0.06	13.88	96	
1148	50.06	122.5	6.74	0.368	0.88	0.04	13.88	92	
1155	50.06	147	6.75	0.370	0.87	0.04	13.87	87	
1202	50.06	171.5	6.75	0.371	0.85	0.00	13.87	84	

Total Purge Volume: 190 (Gallons) / 58.89
Total Discharge: 3.22 (Casing Volumes)
Approx. Purge Rate: 3.5 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1113 Purge time ~~start~~ stop: 1210
Millers MP20 QED Dakton T-100 Controller: Max

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: 1204	Sample Time:	Sample ID:	Sample ID:
No. of Containers: Alpha-7	No. of Containers:	Sample Time:	Sample Time:
LAS-1		No. of Containers:	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: G005862-2
Contract No:
Sampled By: David Loera
Date: 10-22-10
Weather: cool / cloudy

PURGE VOLUME CALCULATION (casing volume):

(245' (TD feet) - 162.67 (WL feet)) X 82.33 (D (inches)²) X 3 (# Vols) X 0.0408 = 161.24 Gallons (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
0937	162.67	Water	to	Surface					Flow Rate 2.5 GPM
0951	163.50	35	6.68	1.221	5.64	5.31	20.40	169	
1000	163.52	57.5	6.69	1.219	3.18	5.26	20.41	157	
1009	163.51	80	6.69	1.223	2.45	5.31	20.43	156	
1018	163.53	102.5	6.68	1.225	2.11	5.41	20.44	163	
1027	163.53	125	6.68	1.226	1.88	5.43	20.45	162	
1036	163.54	147.5	6.68	1.227	1.67	5.50	20.44	154	
1041	163.54	160	6.68	1.225	1.54	5.47	20.44	153	

Total Purge Volume: 190 (Gallons) / 57.75
Total Discharge: 3.53 (Casing Volumes)
Approx. Purge Rate: 2.5 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 0937 Purge time ~~start~~ stop: 1100
Meters: QED MP 20, T-100 Orbeo Controller: Max

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:	Type:	Type:
Sample Time: 1042	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-7

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

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: G005862-2
Contract No:
Sampled By: David Loerz
Date: 10-19-10
Weather: cool / cloudy

PURGE VOLUME CALCULATION (casing volume):

(275' - 189.97) X 4² X 3 X 0.0408 = 166.52 Gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

85.03

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
0929	189.97	Water at surface							Flow Rate 1.7 GPM
0943	190.27	23.8	7.08	0.662	18.01	0.22	23.64	65	
0958	190.26	49.3	7.09	0.662	11.06	0.18	23.69	46	
1013	190.26	74.8	7.09	0.663	6.18	0.18	23.73	51	
1029	190.26	102	7.09	0.665	3.25	0.25	23.51	48	
1047	190.29	132.6	7.09	0.664	2.11	0.20	23.76	40	
1057	190.41	149.6	7.09	0.664	1.88	0.21	23.74	49	
1105	190.41	163.2	7.09	0.665	1.76	0.21	23.72	58	
1111									Stop

Total Purge Volume: 173.4 (Gallons) / 55.51
Total Discharge: 3.12 (Casing Volumes)
Approx. Purge Rate: 1.7 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 0929 Purge time ~~start~~ stop: 1111
Meters: QED MP20, Oakton T-100 Controller: Max

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: 1108	Sample Time:	Sample ID:	Sample ID:
No. of Containers: Alpha - 9 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: G005862-2
Contract No:
Sampled By: David Loera
Date: 10-21-10
Weather: cool/cloudy/light drizzle

PURGE VOLUME CALCULATION (casing volume):

(205' (TD feet) - 115.25 (WL feet)) X 89.75 / 4² (D inches) X 3 (# Vols) X 0.0408 = 175.77 Gallons (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
1335	115.25	Water	to	Surface					Flow Rate 3.0GPM
1348	115.49	39	6.90	0.368	1.55	6.99	17.97	260	
1355	115.49	60	7.14	0.370	1.14	6.95	17.99	250	
1402	115.49	81	7.15	0.371	1.01	7.01	18.01	255	
1409	115.49	102	7.16	0.370	0.76	6.97	18.01	259	
1416	115.48	123	7.17	0.370	0.62	7.00	18.00	263	
1423	115.48	144	7.17	0.372	0.44	6.94	18.01	266	
1430	115.48	165	7.17	0.372	0.28	7.03	18.00	269	

Total Purge Volume: 185 (Gallons) / 58.59
Total Discharge: 3.16 (Casing Volumes)
Approx. Purge Rate: 3.0 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1335 Purge time ~~start~~ stop: 1445
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): 195'

Original	***Duplicate***	***Blank***	***Other (Trip/Source/)***
Sample ID: MW-8	Sample ID:	Type:	Type:
Sample Time: 1434	Sample Time:	Sample ID:	Sample ID:
No. of Containers: Alpha - 9	No. of Containers:	Sample Time:	Sample Time:
CAS - 1		No. of Containers:	No. of Containers:

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-9

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

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: G005862-2
Contract No:
Sampled By: David Loerm
Date: 10-26-10
Weather: Sunny / Warm

PURGE VOLUME CALCULATION (casing volume):

(68 (TD feet) - 16.36 (WL feet)) X 51.64 = 4² (D inches) X 3 (# Vols) X 0.0408 = 101.13 Gallons (Calculated Purge Volume)

PURGE METHOD

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

PUMP INTAKE SETTING

Depth in feet (BTOC): 60

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
1555	16.36	water	to	Surface					Flow Rate 2.0 GPM
1613	18.36	36	6.92	0.410	5.10	1.92	19.02	86	
1618	18.36	46	6.92	0.410	3.88	1.91	19.03	84	
1623	18.36	56	6.92	0.410	3.15	1.88	18.98	84	
1628	18.36	66	6.92	0.410	2.63	1.82	18.94	85	
1633	18.36	76	6.92	0.412	2.55	1.81	18.87	88	
1638	18.36	86	6.92	0.411	2.23	1.80	18.83	90	
1643	18.36	96	6.92	0.410	2.10	1.78	18.77	91	

Total Purge Volume: 115 (Gallons) 33.71
Total Discharge: _____ (Casing Volumes)
Approx. Purge Rate: 2.0 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1555 Purge time ~~start~~ stop: 1650
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): 60

Original	***Duplicate***	***Blank***	***Other (Trip/Source/)***
Sample ID: MW-9	Sample ID:	Type:	Type:
Sample Time: 1646	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: G005862-2
Contract No:
Sampled By: David Loera
Date: 10-21-10
Weather: cool / cloudy

PURGE VOLUME CALCULATION (casing volume):

(155' (TD feet) - 66.89 (WL feet)) X 88.11 X 4² (D inches) X 3 (# Vols) X 0.0408 = 172.55 Gallons (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
0920		Water	to	Surface					Flow Rate 4.4 GPM
0927	67.04	30.8	6.54	0.734	0.88	5.02	20.21	218	
0932	67.05	52.8	6.72	0.737	0.41	4.91	20.22	190	
0937	67.05	74.8	6.74	0.733	0.32	4.83	20.23	190	
0942	67.05	96.8	6.75	0.733	0.29	4.88	20.23	192	
0947	67.05	118.8	6.76	0.731	0.28	5.00	20.24	197	
0952	67.05	140.8	6.77	0.730	0.25	5.02	20.25	206	
0957	67.05	162.8	6.78	0.732	0.23	5.02	20.24	202	

Total Purge Volume: 190 (Gallons) / 57.52
Total Discharge: 3.30 (Casing Volumes)
Approx. Purge Rate: 4.4 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 0920 Purge time ~~start~~ stop: 1010
Motor: QED MP 20, T-100 Oakton Controller: Max

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: 1000	Sample Time:	Sample ID:	Sample ID:
No. of Containers: Alpha - 7	No. of Containers:	Sample Time:	Sample Time:
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: G005862-2
Contract No:
Sampled By: David Loera
Date: 10-19-10
Weather: Cool / cloudy / rain

PURGE VOLUME CALCULATION (casing volume):

(235 - 161.32 ~~73.68~~) X 4² X 3 X 0.0408 = 144.29 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
1544	161.32	Water to		Surface					Flow Rate 2.5 GPM
1554	161.44	25	6.68	0.610	0.88	7.97	21.55	228	
1600	161.45	40	6.87	0.610	0.72	8.03	21.57	262	
1607	161.45	57.5	6.89	0.612	0.66	8.00	21.54	274	
1615	161.46	77.5	6.89	0.613	0.55	8.09	21.54	288	
1623	161.51	97.5	6.89	0.612	0.51	8.03	21.58	289	
1632	161.53	120	6.90	0.611	0.52	8.03	21.56	291	
1641	161.55	142.5	6.90	0.611	0.51	8.02	21.54	290	
1650									Stop

Total Purge Volume: 165 (Gallons) / 48.10
Total Discharge: 3.43 (Casing Volumes)
Approx. Purge Rate: 2.5 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1544 Purge time ~~start~~ stop: 1650
Meters: QED MP 20 Oakton T-100 Controller: MeX

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: 1642
No. of Containers: Alpha - 9
CAS - 1

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

Blank
Type:
Sample ID:
Sample Time:
No. of Containers:

Other (Trip/Source/)
Type: MS/MSD
Sample ID: MW-13 MS/MSD
Sample Time: 1642
No. of Containers: Alpha - 9
CAS - 1

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: G005862-2
Contract No:
Sampled By: David Loera
Date: 10-21-10
Weather: cool / cloudy

PURGE VOLUME CALCULATION (casing volume):

(74' - 28.57) X 45.43 X 4² X 3 X 0.0408 = 88.97 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): 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
1618	28.57	Water	at	surface					Flow Rate 3.5 GPM
1624	29.57	18.6	6.96	0.480	1.44	1.00	15.96	152	
1628	29.60	31	7.25	0.479	1.12	0.73	15.98	108	
1632	29.61	43.4	7.28	0.477	1.01	0.71	15.99	96	
1636	29.62	55.8	7.29	0.480	0.72	0.64	16.00	94	
1640	29.63	68.2	7.29	0.479	0.50	0.61	16.00	91	
1644	29.63	80.6	7.29	0.482	0.51	0.57	16.00	93	

Total Purge Volume: 100 (Gallons) / 29.66
Total Discharge: 3.37 (Casing Volumes)
Approx. Purge Rate: 3.1 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1618 Purge time ~~start~~ stop: 1651
Motors: QED MP20 Oakton T-100 Controller: 25.8

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: 1647	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-16

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

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: G005862-2
Contract No:
Sampled By: David Loera
Date: 10-19-10
Weather: Cool / Cloudy / Light drizzle

PURGE VOLUME CALCULATION (casing volume):

(285' (TD feet) - 213.61 (WL feet)) X 71.39 (4^2) (D inches) X 3 (# Vols) X 0.0408 = 139.81 Gallons (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
1217	213.61	Water	to	Surface					Flow rate 1.6 GPM
1232	213.62	24	7.09	0.697	1.31	1.65	24.58	732	
1246	213.62	46.4	7.10	0.697	1.15	1.61	24.60	740	
1300	213.62	68.8	7.10	0.697	1.02	1.59	24.61	744	
1315	213.56	92.8	7.10	0.698	0.98	1.57	24.59	746	
1331	213.60	118.4	7.10	0.698	1.00	1.56	24.60	747	
1344	213.60	139.2	7.09	0.697	0.95	1.56	24.64	749	
1350									Stop

Total Purge Volume: 148.8 (Gallons) / 4660
Total Discharge: 5.19 (Casing Volumes)
Approx. Purge Rate: 1.6 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1217 Purge time ~~start~~ stop: 1350
Meters QED MP20 Oakton T-100 Controller: Max

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-16	Sample ID:	Type:	Type:
Sample Time: 1345	Sample Time:	Sample ID:	Sample ID:
No. of Containers: Alphn - 9	No. of Containers:	Sample Time:	Sample Time:
CAS - 1		No. of Containers:	No. of Containers:

ORIGINAL FIELD RECORD

INSIGHT
Environmental Engineering and Construction, Inc.

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-3
Sampling Zone No.: 5 to 1
Depth (ft): 653, 558, 346, 252, 172
Beginning of Session: 14.23 psia
End of Session: 14.22 psia

Start Time: 0850
Finish Time: 1130

Date: 4/01/10
Page: 1 of 1

Water Pressure Inside Casing: ~11~

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	✓	✓	✓	✓	✓	✓	✓	✓	✓	249.37	✓	258.64	✓	258.62	✓	✓	249.35	916	5.26	1.55	44.2	6.19	18.7	199
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	207.96	✓	217.50	✓	217.49	✓	✓	207.97	1006	5.56	1.82	44.4	6.57	20.0	134
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	115.58	✓	126.43	✓	126.32	✓	✓	115.58	1029	5.98	0.82	41.9	6.67	20.7	129
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	74.64	✓	85.70	✓	85.67	✓	✓	74.61	1050	6.00	4.33	0.0	6.62	20.1	102
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	41.31	✓	52.87	✓	52.85	✓	✓	41.34	1122	5.80	18.2	71.7	6.31	21.4	192

PE-04-4/2010

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

Total Volume: ~

EB: 1107

PM0... # 2308

INSIGHT
Environmental Restoration and Construction, Inc.

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-4
Sampling Zone No.: 5 to 1
Depth (ft): 513, 392, 322, 240, 150
Beginning of Session: 14.19 psia
End of Session: 14.14 psia

Start Time: 0850
Finish Time: 1100

Date: 10/29/10
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	✓	✓	✓	✓	✓	✓	✓	✓	✓	150.38	✓	207.67	✓	207.69	✓	✓	150.40	913	5.36	51.0	48.2	6.85	20.2	225
MS/MSD 4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	99.09	✓	155.32	✓	155.33	✓	✓	99.10	942	5.62	92.5	42.6	6.14	20.9	198
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	67.07	✓	125.02	✓	125.02	✓	✓	67.09	1005	5.84	5.01	37.7	6.33	20.8	155
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	31.31	✓	89.67	✓	89.71	✓	✓	31.32	1028	5.71	13.5	2.093	6.30	20.6	284
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	19.35	✓	53.75	✓	53.72	✓	✓	14.24	1055	6.48	1.83	41.1	6.46	20.8	166

Notes:
port 5: CLOUDY, BROWNISH/YELLOWISH port 4: CLOUDY, BROWNISH/YELLOWISH port 3: CLEAR, FAINT ODOR
COLOR, W/ SLIGHT ODOR COLOR W/ FAINT ODOR
port 2: CLEAR, FAINT ODOR port 1: CLEAR NO ODOR

Total Volume: —

EB: 1046

PROBE # 23 v.0

INSIGHT

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-11
Sampling Zone No.: 5 to 1
Depth (ft): ~~630, 524, 420~~, 259, 149
Beginning of Session: 14.07 psia
End of Session: 14.14 psia

Start Time: 0700
Finish Time: 0925

Date: 10/27/10
Page: 1 of 1

Water Pressure Inside Casing: ~~14~~

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	✓	✓	✓	✓	✓	✓	✓	✓	✓	236.77	✓	234.09	✓	234.05	✓	✓	236.74	732	5.39	5.88	35.7	6.70	16.6	248
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	187.05	✓	190.60	✓	190.55	✓	✓	187.05	801	5.93	0.04	22.5	6.55	16.2	123
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	146.06	✓	148.09	✓	148.01	✓	✓	146.05	827	5.77	1.60	40.1	6.24	16.1	182
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	72.33	✓	76.28	✓	76.28	✓	✓	72.31	850	5.78	0.64	45.9	6.46	16.6	158
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	25.44	✓	36.64	✓	36.65	✓	✓	25.45	917	5.95	0.57	57.4	6.20	17.7	143

Notes:

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

port 2: CLEAR STRONG ODOR port 1: CLEAR STRONG ODOR

Total Volume: ~~11~~

EB: 0905

Probe # 2548

INSIGHT
Environmental Engineering and Construction, Inc.

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: 14.20 psia
End of Session: 14.22 psia

Start Time: 0620
Finish Time: 1040

Date: 11/02/10
Page: 1 of 1

Water Pressure Inside Casing: 14

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	✓	✓	✓	✓	✓	✓	✓	✓	✓	216.59	✓	206.29	✓	206.25	✓	✓	216.58	843	5.39	3.06	0.0	7.70	19.9	212
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	167.77	✓	161.79	✓	161.73	✓	✓	167.74	907	5.60	0.05	50.3	6.65	20.4	135
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	119.95	✓	114.78	✓	114.74	✓	✓	119.95	939	5.77	0.30	45.3	6.93	20.6	148
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	83.54	✓	81.29	✓	81.31	✓	✓	83.55	1010	5.92	2.03	55.6	7.06	21.9	148
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	38.55	✓	42.02	✓	42.03	✓	✓	38.54	1034	6.19	31.0	58.8	6.43	22.1	165

PG-05-4210

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

Total Volume: 4

EB: 1023

INSIGHT
Environmental Engineering and Construction, Inc.

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: 14.05 psia
End of Session: 14.06 psia

Start Time: 0845
Finish Time: 1150

Date: 10/26/10
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	✓	✓	✓	✓	✓	✓	✓	✓	✓	187.63	✓	184.69	✓	184.68	✓	✓	187.60	915	5.57	0.00	34.9	6.15	17.6	195
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	150.94	✓	148.30	✓	148.29	✓	✓	150.93	1005	5.66	0.00	71.3	6.32	18.8	158
MS/MSD - PE-02-9010 3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	120.16	✓	116.21	✓	116.23	✓	✓	120.17	1036	5.59	0.53	0.100	6.19	18.7	271
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	74.33	✓	70.68	✓	70.69	✓	✓	74.34	1111	5.92	0.81	0.114	6.84	19.7	290
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	42.28	✓	40.57	✓	40.58	✓	✓	42.31	1144	6.12	0.86	0.119	5.92	20.2	164

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

Total Volume: —

EB: 1128

INSIGHT
Environmental, Engineering and Construction, Inc.

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-17
Sampling Zone No.: 5 to 1
Depth (ft): 726, 582, 468, 370, 250
Beginning of Session: 14.04 psia
End of Session: 14.03 psia

Start Time: 0910
Finish Time: 1140

Date: 10/22/10
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	✓	✓	✓	✓	✓	✓	✓	✓	✓	242.94	✓	249.23	✓	249.20	✓	✓	242.98	935	5.76	11.4	31.7	6.82	15.6	150
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	181.17	✓	186.87	✓	186.85	✓	✓	181.19	1007	5.82	0.21	31.5	6.91	15.3	131
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	131.08	✓	134.99	✓	134.99	✓	✓	131.08	1034	5.88	8.88	65.1	7.31	15.2	111
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	88.49	✓	94.69	✓	94.68	✓	✓	88.48	1057	5.68	0.48	88.3	7.15	15.9	123
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	36.27	✓	43.88	✓	43.86	✓	✓	36.26	1139	5.92	3.01	41.7	7.44	15.7	114

MS/MSD -

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

Total Volume: —

CB: 11:11

INSIGHT
Environmental, Engineering and Construction, Inc.

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-18
Sampling Zone No.: 5 to 1
Depth (ft): 684, 564, 424, 330, 270
Beginning of Session: 14.02 psia
End of Session: 14.07 psia

Start Time: 0927
Finish Time: 1235

Date: 10/21/10
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	✓	✓	✓	✓	✓	✓	✓	✓	✓	159.83	✓	213.89	✓	213.83	✓	✓	159.84	948	5.37	0.24	33.6	6.66	17.5	142
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	107.19	✓	163.07	✓	163.57	✓	✓	107.18	1040	6.11	28.7	27.3	6.91	16.1	54
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	51.95	✓	103.84	✓	103.84	✓	✓	51.95	1127	7.40	0.33	51.0	6.80	16.4	142
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.20	✓	62.84	✓	62.83	✓	✓	14.26	1200	7.27	0.06	49.5	6.94	15.7	136
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.19	✓	36.83	✓	36.83	✓	✓	14.21	1231	7.32	4.15	43.0	6.81	16.0	152

MS/MSD

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

Total Volume: —

EB: 1219

page # 2--

INSIGHT
Environmental Engineering and Construction, Inc.

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-19
Sampling Zone No.: 5to1
Depth (ft): 498, 444, 392, 314, 242
Beginning of Session: 14.10 psia
End of Session: 14.12 psia

Start Time: 0830
Finish Time: 1045

Date: 11/08/10
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	✓	✓	✓	✓	✓	✓	✓	✓	✓	172.93	✓	171.56	✓	171.56	✓	✓	172.93	857	5.03	0.08	79.5	5.78	16.4	195
	4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	149.36	✓	148.17	✓	148.18	✓	✓	149.37	919	5.31	0.04	62.2	5.38	16.3	172
MS/MSD →	3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	127.43	✓	125.55	✓	125.54	✓	✓	127.42	950	5.60	0.21	66.7	5.26	17.4	183
	2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	92.89	✓	91.36	✓	91.35	✓	✓	92.90	1014	5.67	36.6	0.999	5.17	16.7	299
	1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	61.60	✓	59.96	✓	59.95	✓	✓	61.60	1039	5.67	4.42	70.5	5.51	16.1	183

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

Total Volume: —

GB: 1030

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: 14.04 psia
End of Session: 14.04 psia

Start Time: 0835
Finish Time: 1105

Date: 10/25/10
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
MS/MSD	5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	322.77	✓	330.91	✓	330.90	✓	✓	322.81	914	5.54	0.00	27.8	6.79	18.5	-17
	4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	235.44	✓	244.88	✓	244.84	✓	✓	235.43	943	5.99	0.65	30.0	6.57	18.6	-58
	3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	175.52	✓	180.49	✓	180.47	✓	✓	175.54	1009	6.16	0.45	40.0	7.11	18.0	-28
	2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	101.78	✓	109.75	✓	109.74	✓	✓	101.79	1034	6.06	0.30	47.6	6.70	17.1	120
	1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	31.41	✓	39.28	✓	39.28	✓	✓	31.41	1101	5.67	3.57	44.8	6.58	17.4	125

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

Total Volume: —

EB: 1050

PROBE # 2502

INSIGHT
Environmental Engineering and Construction, Inc.

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: 14.05 psia
End of Session: 14.06 psia

Start Time: 0911
Finish Time: 1125

Date: 10/19/10
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	✓	✓	✓	✓	✓	✓	✓	✓	✓	128.14	✓	157.91	✓	157.91	✓	✓	128.12	0921	5.32	0.00	0.095	6.55	18.3	179
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	100.56	✓	131.06	✓	131.07	✓	✓	100.57	0945	5.64	1.54	74.1	6.52	18.7	85
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	70.45	✓	101.23	✓	101.24	✓	✓	70.43	1010	5.54	0.60	0.111	6.64	18.4	196
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	38.46	✓	67.11	✓	67.11	✓	✓	38.45	1049	5.95	-0.08	0.112	7.41	17.8	197
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.10	✓	35.93	✓	35.93	✓	✓	14.15	1120	6.18	6.24	0.120	6.55	18.2	214

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

Total Volume: ~

EB: 1108

INSIGHT
Environmental, Engineering and Construction, Inc.

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-22
Sampling Zone No.: 5+1
Depth (ft): 588, 467, 389, 329, 245
Beginning of Session: 14.12 psia
End of Session: 14.17 psia

Start Time: 0800
Finish Time: 1020

Date: 10/28/10
Page: 1 of 1

Water Pressure Inside Casing: ~11

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	✓	✓	✓	✓	✓	✓	✓	✓	✓	201.60	✓	200.40	✓	200.39	✓	✓	201.61	825	5.63	0.14	35.0	5.71	17.2	-39
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	149.13	✓	149.02	✓	149.02	✓	✓	149.19	847	5.81	0.00	39.5	5.44	17.6	114
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	115.30	✓	116.46	✓	116.45	✓	✓	115.30	911	5.41	0.00	58.2	6.27	17.3	123
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	89.91	✓	90.33	✓	90.30	✓	✓	89.89	947	5.31	-0.09	62.3	5.98	16.8	134
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	52.37	✓	53.96	✓	53.98	✓	✓	52.34	1013	5.52	7.48	0.999	5.71	17.2	264

Notes:
port 5: CLEAR STRONG ODOR port 4: CLEAR STRONG ODOR port 3: CLEAR STRONG ODOR
port 2: CLEAR SLIGHT ODOR port 1: CLEAR FAINT ODOR

Total Volume: ~11

EB: 1004

page 3 of 5

INSIGHT
Environmental Engineering and Construction, Inc.

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-23
Sampling Zone No.: 5 to 1
Depth (ft): 542, 445, 319, 254, 174
Beginning of Session: 14.15 psia
End of Session: 14.18 psia

Start Time: 0750
Finish Time: 1010

Date: 11/04/10
Page: 1 of 1

Water Pressure Inside Casing: ~~11~~

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	✓	✓	✓	✓	✓	✓	✓	✓	✓	205.23	✓	209.55	✓	209.51	✓	✓	205.25	823	5.64	1.06	44.3	5.81	19.0	70
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	163.20	✓	167.84	✓	167.83	✓	✓	163.19	845	6.14	0.40	37.2	5.68	19.7	130
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	108.56	✓	114.55	✓	114.56	✓	✓	106.54	904	5.91	0.42	39.2	5.80	19.9	133
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	80.35	✓	86.44	✓	86.45	✓	✓	80.36	926	5.47	0.50	0.090	5.85	20.5	152
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	46.42	✓	52.58	✓	52.58	✓	✓	46.43	0958	5.69	7.00	0.999	6.67	22.9	163

pE - 07 - 4210

Notes:
port 5: Clear, very strong odor port 4: Clear strong odor port 3: Clear strong odor
port 2: Clear slight odor port 1: Clear slight odor

Total Volume: ~~11~~

CB: 0944

INSIGHT
Environmental Engineering and Construction, Inc.

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-24
Sampling Zone No.: 5 to 1
Depth (ft): 678, 554, 435, 373, 279
Beginning of Session: 14.13 psia
End of Session: 14.11 psia

Start Time: 0820
Finish Time: 1040

Date: 11/03/10
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	✓	✓	✓	✓	✓	✓	✓	✓	✓	232.79	✓	226.67	✓	226.68	✓	✓	232.76	843	5.47	0.72	45.5	5.87	22.1	207
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	179.67	✓	174.24	✓	174.26	✓	✓	179.68	918	5.95	0.81	24.8	7.73	22.7	-8
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	127.42	✓	124.28	✓	124.28	✓	✓	127.41	946	6.03	0.36	39.0	6.14	23.1	95
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	100.55	✓	97.71	✓	97.72	✓	✓	100.53	1007	5.95	0.51	53.2	6.11	23.1	95
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	59.99	✓	58.47	✓	58.48	✓	✓	59.99	1030	5.90	3.13	75.2	6.04	24.0	128

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: 1021

Proof #27

INSIGHT
Environmental Engineering and Construction, Inc.

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: 14.21 psia
End of Session: 14.21 psia

Start Time: 0955
Finish Time: 1210

Date: 11/05/10
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	✓	✓	✓	✓	✓	✓	✓	✓	✓	214.04	✓	207.57	✓	207.58	✓	✓	214.07	1018	6.18	0.20	8.0	6.16	21.8	50
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	180.89	✓	171.77	✓	171.77	✓	✓	180.91	1056	6.25	0.32	75.5	6.78	21.8	185
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	123.02	✓	118.54	✓	118.54	✓	✓	123.05	1118	6.36	0.15	71.1	5.93	21.9	172
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	86.19	✓	86.51	✓	86.52	✓	✓	86.18	1137	6.37	1.53	73.5	6.76	23.6	179
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	59.87	✓	59.14	✓	59.16	✓	✓	59.87	1159	6.40	19.7	87.6	7.57	24.4	190

MS/MSD

Notes:
port 5: Clear strong odor port 4: Clear slight odor port 3: Clear faint odor
port 2: Clear faint odor port 1: Yellowish hue, Clear faint odor

Total Volume: —

INSIGHT
Environmental Engineering and Construction, Inc.

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-26
Sampling Zone No.: 5 to 1
Depth (ft): 215, 135
Beginning of Session: 14.14 psia
End of Session: 14.57 psia

Start Time: 0813
Finish Time: 0915

Date: 11/05/10
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	✓	✓	✓	✓	✓	✓	✓	✓	✓	73.63	✓	78.74	✓	78.73	✓	✓	73.81	831	5.24	9.54	50.3	6.66	21.5	186
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	40.92	✓	41.53	✓	41.52	✓	✓	40.93	906	5.36	0.00	0.999	7.19	22.5	286

UPE-08-LAQ10 —

Notes:

Total Volume: —

port 2: CLEAR STRONG ODOR port 1: CLEAR FAINT ODOR

CTS: 0851

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 4th Quarter 2010. Water level measurements were recorded before the sampling event on October 18, 2010 (all except MW-26 due to blocked access) and after the sampling event on November 9, 2010. 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: 10/18/10
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: partly cloudy and cool

Ambient Readings	Start	Finish
Time	1117	1130
Pressure (psia)	14.11	14.12
Temperature (°C)	19.55	18.31

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	245.28	258.10	245.28	20.45	1119		
							90.12	1010.22
4	558	204.06	217.06	204.05	21.73	1121		
							89.79	1010.55
3	346	111.91	126.80	111.90	21.84	1123		
							86.02	1014.32
2	252	71.07	86.10	71.07	21.20	1125		
							85.92	1014.42
1	172	36.27	52.74	36.30	19.84	1128		
							82.88	1017.46

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/18/10
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	1438	1450
Pressure (psia)	14.08	14.11
Temperature (°C)	17.47	19.45

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	513	148.15	205.46	148.14	19.03	1440		
							71.49	1011.35
4	392	95.52	153.10	95.49	20.20	1442		
							71.28	1011.56
3	322	65.91	114.28	65.92	20.49	1444		
							90.84	992.00
2	240	30.16	38.28	30.24	20.45	1446		
							184.17	898.67
1	150	14.18	15.65	14.19	20.08	1448		
							146.38	936.46

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/18/10
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: partly cloudy 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	1013	1026
Pressure (psia)	14.07	14.10
Temperature (°C)	20.96	18.26

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	639	234.40	234.18	234.40	20.28	1016		
							131.21	1008.09
4	524	184.91	190.77	184.91	21.23	1018		
							116.35	1022.95
3	429	144.04	148.01	144.03	21.35	1020		
							120.00	1019.30
2	259	70.41	75.95	70.40	20.20	1023		
							116.24	1023.06
1	149	23.06	36.46	23.05	19.15	1025		
							97.35	1041.95

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/18/10
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,102.14
Weather: partly cloudy and cool

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

Ambient Readings	Start	Finish
Time	1420	1432
Pressure (psia)	14.06	14.12
Temperature (°C)	19.75	17.68

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	214.21	210.61	214.21	19.74	1422		
							94.56	1007.58
4	436	165.49	165.11	165.53	20.45	1424		
							87.53	1014.61
3	323	116.34	114.55	116.37	20.08	1426		
							91.17	1010.97
2	243	81.51	80.63	81.53	19.39	1428		
							89.42	1012.72
1	140	36.61	41.44	36.60	18.30	1430		
							76.83	1025.31

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/18/10
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	0928	0941
Pressure (psia)	14.06	14.08
Temperature (°C)	19.66	19.33

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	185.38	183.88	185.41	19.92	930		
							148.23	1025.24
4	456	148.89	147.63	148.91	20.44	0933		
							147.85	1025.62
3	382	116.68	115.57	116.70	20.41	0935		
							147.82	1025.65
2	277	70.97	70.11	70.98	20.06	0937		
							147.69	1025.78
1	207	40.45	40.13	40.47	19.66	0939		
							146.86	1026.61

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/18/10
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,191.21
Weather: partly cloudy and cool

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

Ambient Readings	Start	Finish
Time	1207	1220
Pressure (psia)	14.06	14.02
Temperature (°C)	18.31	15.88

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	241.91	249.25	241.91	18.48	1209		
							183.42	1007.79
4	582	179.61	186.45	179.61	19.52	1211		
							184.30	1006.91
3	468	130.19	134.82	130.17	18.65	1213		
							189.41	1001.80
2	370	87.64	94.54	87.61	17.98	1215		
							184.33	1006.88
1	250	35.44	43.81	35.46	17.02	1218		
							181.37	1009.84

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/18/10
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: partly cloudy and cool

Ambient Readings	Start	Finish
Time	1235	1248
Pressure (psia)	14.02	14.03
Temperature (°C)	19.04	17.30

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	684	157.60	214.08	157.61	19.75	1238		
							222.46	1002.95
4	564	105.49	163.04	105.50	20.39	1240		
							220.21	1005.20
3	424	44.61	103.68	44.58	20.00	1242		
							217.15	1008.26
2	330	14.23	62.87	14.22	18.88	1244		
							217.30	1008.11
1	270	14.19	36.87	14.17	18.08	1246		
							217.29	1008.12

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/18/10
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (ft. +MSL): 1,142.94
Weather: partly cloudy and cool

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

Ambient Readings	Start	Finish
Time	1139	1150
Pressure (psia)	14.04	14.10
Temperature (°C)	17.92	17.35

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	171.93	171.27	171.95	18.37	1141		
							135.27	1007.67
4	444	148.50	147.91	148.51	19.08	1143		
							135.16	1007.78
3	392	125.95	125.28	125.96	19.17	1145		
							135.37	1007.57
2	314	92.12	91.13	92.10	19.16	1147		
							136.15	1006.79
1	242	60.84	59.78	60.82	18.83	1149		
							136.48	1006.46

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/18/10
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,165.05
Weather: partly cloudy and cool

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

Ambient Readings	Start	Finish
Time	1255	1313
Pressure (psia)	14.04	14.08
Temperature (°C)	17.96	17.16

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	321.15	330.67	321.15	19.99	1300		
							169.53	995.52
4	700	234.55	244.04	234.52	21.60	1304		
							169.39	995.66
3	562	174.76	178.79	174.72	21.29	1306		
							181.92	983.13
2	392	101.01	109.23	101.00	20.29	1308		
							172.40	992.65
1	230	31.47	41.06	31.48	18.12	1310		
							167.66	997.39

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

Project Name: JPL Pasadena | Well ID: MW-21
Project No: 4-73805 | Probe Type: Westbay
Date: 10/18/10 | 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: partly cloudy and cool

Ambient Readings	Start	Finish
Time	0846	0858
Pressure (psia)	14.10	14.14
Temperature (°C)	19.31	18.80

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	372	125.50	158.42	125.52	19.47	848		
							39.05	1020.05
4	310	98.55	131.57	98.57	19.75	0850		
							39.00	1020.10
3	240	68.53	101.68	68.52	19.72	0852		
							37.95	1021.15
2	161	34.11	67.49	34.11	19.06	0854		
							37.83	1021.27
1	90	14.18	36.21	14.17	18.92	0856		
							38.99	1020.11

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/18/10
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	0905	0918
Pressure (psia)	14.02	14.07
Temperature (°C)	19.61	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	588	200.74	200.19	200.73	20.89	907		
							158.51	1018.47
4	467	148.21	148.69	148.22	21.68	0909		
							156.32	1020.66
3	389	114.44	115.97	114.41	21.55	0911		
							153.80	1023.18
2	329	88.38	89.94	88.40	21.33	0913		
							153.85	1023.13
1	245	51.48	53.52	51.50	20.95	0915		
							153.87	1023.11

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/18/10
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	0749	0803
Pressure (psia)	14.02	14.10
Temperature (°C)	18.08	19.93

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	204.24	209.32	204.27	19.41	753		
							91.44	1017.40
4	445	162.25	167.46	162.27	20.50	0755		
							91.01	1017.83
3	319	107.71	113.91	107.72	20.63	0757		
							88.55	1020.29
2	254	79.57	85.77	79.53	20.52	0759		
							88.47	1020.37
1	174	45.66	55.13	45.64	20.23	0801		
							79.16	1029.68

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/18/10
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,200.94
Weather: partly cloudy and cool

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

Ambient Readings	Start	Finish
Time	0952	1005
Pressure (psia)	14.06	14.09
Temperature (°C)	19.28	21.37

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	23180.00	227.06	231.80	20.42	955		
							186.61	1014.33
4	554	178.12	174.37	178.13	21.18	0957		
							184.16	1016.78
3	435	126.57	123.83	126.58	21.34	1000		
							181.76	1019.18
2	373	99.70	97.19	99.72	21.37	1002		
							181.22	1019.72
1	279	58.95	57.86	58.94	21.28	1004		
							177.95	1022.99

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/18/10
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (ft. + MSL): 934.52
Weather: partly cloudy and cool

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

Ambient Readings	Start	Finish
Time	1325	1340
Pressure (psia)	14.18	14.19
Temperature (°C)	18.74	19.66

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	211.82	205.96	211.85	20.20	1330		
							270.56	663.96
4	633	17.40	169.90	177.39	21.00	1332		
							273.75	660.77
3	503	121.13	116.46	121.14	21.05	1334		
							267.04	667.48
2	423	86.40	85.35	86.40	20.89	1336		
							258.81	675.71
1	358	58.14	59.02	58.12	19.93	1338		
							254.55	679.97

INSIGHT, Inc.
Piezometric Pressure/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name:	JPL Pasadena	Well ID:	MW-26
Project No:	4-73805	Probe Type:	Westbay
Date:	10/18/10	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:	partly cloudy and cool		

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!

UNABLE TO COLLECT MEASUREMENTS AT THIS WELL DUE TO BLOCKAGE OF ACCESS

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 4Q10 | **Project No.: 4-73805**

WELL #	*DATE*	*TIME*	*DEPTH (FT.)*
MW-1	10/18/2010	1103	24.03
MW-5	10/18/2010	638	50.34
MW-6	10/18/2010	624	163.31
MW-7	10/18/2010	614	189.32
MW-8	10/18/2010	602	115.46
MW-9	10/18/2010	1058	16.08
MW-10	10/18/2010	630	66.97
MW-13	10/18/2010	557	160.85
MW-15	10/18/2010	609	28.57
MW-16	10/18/2010	618	212.91

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/9/10
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: clear and sunny

Ambient Readings	Start	Finish
Time	1109	1121
Pressure (psia)	14.12	14.14
Temperature (°C)	19.64	18.85

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	246.70	258.38	246.71	22.04	1111		
							89.49	1010.85
4	558	205.48	217.37	205.42	22.50	1114		
							89.10	1011.24
3	346	113.27	127.18	113.26	22.25	1117		
							85.17	1015.17
2	252	72.46	86.45	72.45	21.49	1119		
							85.13	1015.21
1	172	37.69	52.91	37.73	20.25	1120		
							82.51	1017.83

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/9/10
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (ft. +MSL): 1,082.84
Weather: clear and sunny

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

Ambient Readings	Start	Finish
Time	1430	1442
Pressure (psia)	14.07	14.08
Temperature (°C)	18.98	19.73

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	513	147.09	207.83	148.13	20.08	1432		
							66.00	1016.84
4	392	95.46	155.47	95.47	21.02	1434		
							65.79	1017.05
3	322	64.98	125.15	65.01	20.98	1436		
							65.74	1017.10
2	240	29.26	89.76	29.28	20.88	14.38		
							65.38	1017.46
1	150	14.13	53.04	14.18	20.46	1440		
							60.10	1022.74

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/9/10
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: clear and sunny

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	1047	1059
Pressure (psia)	14.10	14.11
Temperature (°C)	21.48	17.77

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	234.09	239.50	234.10	20.77	1049		
							119.00	1020.30
4	524	184.62	191.08	184.61	21.38	1050		
							115.71	1023.59
3	429	143.74	148.48	143.77	20.68	1052		
							118.99	1020.31
2	259	70.10	76.37	70.11	19.58	1054		
							115.34	1023.96
1	149	22.86	36.64	22.81	18.50	1057		
							97.00	1042.30

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/9/10
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,102.14
Weather: clear and sunny

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

Ambient Readings	Start	Finish
Time	1414	1424
Pressure (psia)	14.06	14.08
Temperature (°C)	20.85	18.11

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	213.83	212.90	213.89	20.44	1416		
							89.28	1012.86
4	436	165.20	166.26	165.23	21.07	1418		
							84.87	1017.27
3	323	116.04	117.60	116.07	20.59	1420		
							84.13	1018.01
2	243	81.18	83.32	81.24	19.71	1422		
							83.22	1018.92
1	140	36.28	41.84	36.31	18.90	1423		
							75.91	1026.23

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/9/10
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,173.47
Weather: clear and sunny

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

Ambient Readings	Start	Finish
Time	0827	0839
Pressure (psia)	14.14	14.18
Temperature (°C)	18.54	19.12

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	185.13	184.98	185.12	18.82	829		
							145.87	1027.60
4	456	148.59	148.63	148.59	19.54	0831		
							145.73	1027.74
3	382	116.43	116.54	116.39	1982.00	0833		
							145.76	1027.71
2	277	70.71	71.03	70.72	19.52	0835		
							145.75	1027.72
1	207	40.20	40.91	40.22	19.32	0837		
							145.24	1028.23

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/9/10
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,191.21
Weather: clear and sunny

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

Ambient Readings	Start	Finish
Time	1201	1215
Pressure (psia)	14.03	14.07
Temperature (°C)	19.52	16.23

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	241.84	249.51	241.86	19.47	1203		
							182.75	1008.46
4	582	179.54	186.80	179.52	19.94	1205		
							183.42	1007.79
3	468	130.14	134.94	130.13	19.24	1207		
							189.06	1002.15
2	370	87.51	94.70	87.54	18.51	1209		
							183.89	1007.32
1	250	35.34	43.89	35.36	17.73	1213		
							181.11	1010.10

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/9/10
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: clear and sunny

Well ID: MW-18
Probe Type: Westbay
Serial No.:
Casing Size/Type: 1.5" Westbay
Elevation of Datum (Ft. + MSL): 1,225.41

Ambient Readings	Start	Finish
Time	1220	1231
Pressure (psia)	14.03	14.05
Temperature (°C)	17.27	17.19

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	162.89	214.27	162.90	19.25	1224		
							222.05	1003.36
4	564	110.78	163.20	110.78	20.34	1226		
							219.86	1005.55
3	424	49.85	103.95	49.86	19.84	1228		
							216.55	1008.86
2	330	14.24	62.78	14.21	18.67	1229		
							217.53	1007.88
1	270	14.18	36.74	14.18	17.90	1230		
							217.61	1007.80

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/9/10
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	1142	1150
Pressure (psia)	14.08	14.07
Temperature (°C)	20.15	16.97

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	171.80	171.55	171.81	1.62	1144		
							134.72	1008.22
4	444	148.39	148.18	148.40	19.63	1145		
							134.63	1008.31
3	392	125.80	125.56	125.83	19.56	1147		
							134.82	1008.12
2	314	92.02	91.36	92.01	19.18	1148		
							135.72	1007.22
1	242	60.69	59.97	60.67	18.01	1149		
							136.13	1006.81

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/9/10
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	1239	1255
Pressure (psia)	14.03	14.04
Temperature (°C)	19.46	17.57

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	321.02	330.59	321.05	20.18	1245		
							169.70	995.35
4	700	234.39	243.99	234.40	21.75	1248		
							169.48	995.57
3	562	174.63	184.44	174.62	21.38	1250		
							168.86	996.19
2	392	100.92	110.69	100.91	20.20	1252		
							169.01	996.04
1	230	30.50	39.84	30.49	18.49	1253		
							170.46	994.59

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

Project Name: JPL Pasadena | Well ID: MW-21
Project No: 4-73805 | Probe Type: Westbay
Date: 11/9/10 | 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: clear and sunny

Ambient Readings	Start	Finish
Time	1000	1010
Pressure (psia)	14.08	14.14
Temperature (°C)	23.77	19.49

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	125.43	159.14	125.42	22.25	1002		
							37.35	1021.75
4	310	98.43	132.31	98.43	21.70	1004		
							37.24	1021.86
3	240	68.40	102.38	68.41	21.11	1005		
							36.29	1022.81
2	161	33.99	68.14	34.00	20.40	1007		
							36.28	1022.82
1	90	14.18	36.71	14.19	19.79	1008		
							37.79	1021.31

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/9/10
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: clear and sunny

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	0808	0819
Pressure (psia)	14.11	14.13
Temperature (°C)	17.92	20.21

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	588	200.53	200.81	200.47	19.42	810		
							157.28	1019.70
4	467	148.14	149.37	148.13	20.76	0812		
							154.96	1022.02
3	389	114.32	116.76	114.35	20.94	0814		
							152.19	1024.79
2	329	88.33	90.69	88.31	20.91	0815		
							152.33	1024.65
1	245	51.42	54.20	51.43	20.66	0817		
							152.51	1024.47

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

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/9/10
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,108.84
Weather: clear and sunny

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

Ambient Readings	Start	Finish
Time	0745	0757
Pressure (psia)	14.17	14.16
Temperature (°C)	15.68	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	542	204.19	209.98	204.18	18.17	747		
							90.27	1018.57
4	445	162.19	168.08	162.17	19.17	0749		
							89.93	1018.91
3	319	107.58	114.59	107.56	19.76	0751		
							87.33	1021.51
2	254	79.40	86.44	79.41	19.90	0753		
							87.27	1021.57
1	174	44.71	52.51	44.68	19.77	0755		
							85.55	1023.29

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/9/10
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,200.94
Weather: clear and sunny

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

Ambient Readings	Start	Finish
Time	1021	1030
Pressure (psia)	14.04	14.05
Temperature (°C)	19.84	21.34

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	231.66	227.55	231.64	21.20	1023		
							185.43	1015.51
4	554	178.00	174.96	177.99	21.61	1025		
							182.76	1018.18
3	435	126.41	124.44	126.46	21.56	1026		
							180.31	1020.63
2	373	99.57	97.76	99.57	21.22	1027		
							179.86	1021.08
1	279	58.83	58.37	58.81	21.25	1028		
							176.73	1024.21

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/9/10
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: clear and sunny

Well ID: MW-25
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay
Elevation of Datum (ft. + MSL): 934.52

Ambient Readings	Start	Finish
Time	1309	1322
Pressure (psia)	14.15	14.17
Temperature (°C)	20.26	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	211.93	207.78	211.96	20.74	1313		
							266.30	668.22
4	633	177.47	171.94	177.49	21.33	1315		
							268.98	665.54
3	503	121.20	118.70	121.21	21.24	1317		
							261.80	672.72
2	423	86.50	86.63	86.49	20.87	1319		
							255.79	678.73
1	358	58.22	59.24	58.21	20.26	1321		
							253.98	680.54

INSIGHT, Inc.
Piezometric Pressure/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Well ID: MW-26
Project No: 4-73805
Probe Type: Westbay
Date: 11/9/10
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: clear and sunny

Ambient Readings	Start	Finish
Time	1334	1338
Pressure (psia)	14.09	14.10
Temperature (°C)	20.18	18.91

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	73.88	74.13	73.89	20.09	1335	76.49	982.59
1	135	36.88	41.49	36.88	20.56	1336	71.79	987.29

INSIGHT
Environmental, Engineering and Construction, Inc.

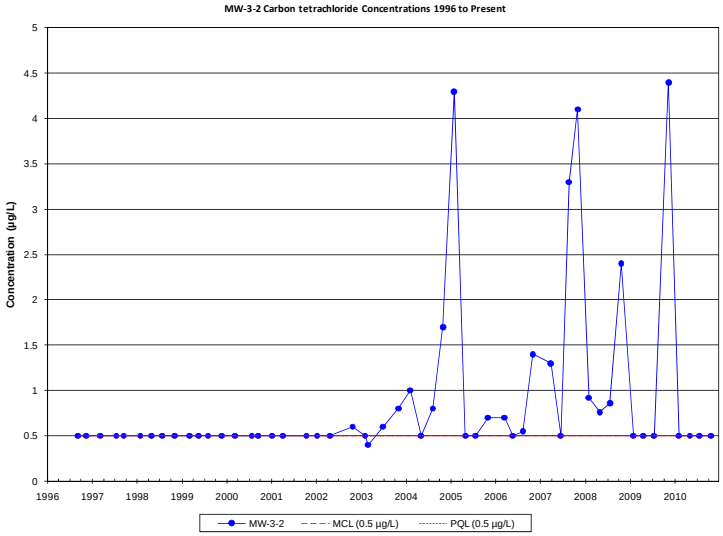
3010 E. Miraloma Avenue
Anaheim, CA 92806
Telephone (714) 678-6700 Fax (714) 678-6711

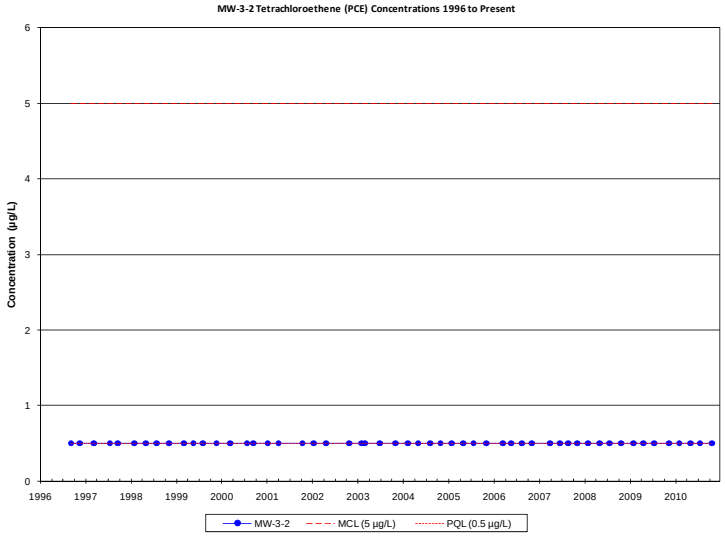
Post-Event Shallow Well Sounding Log

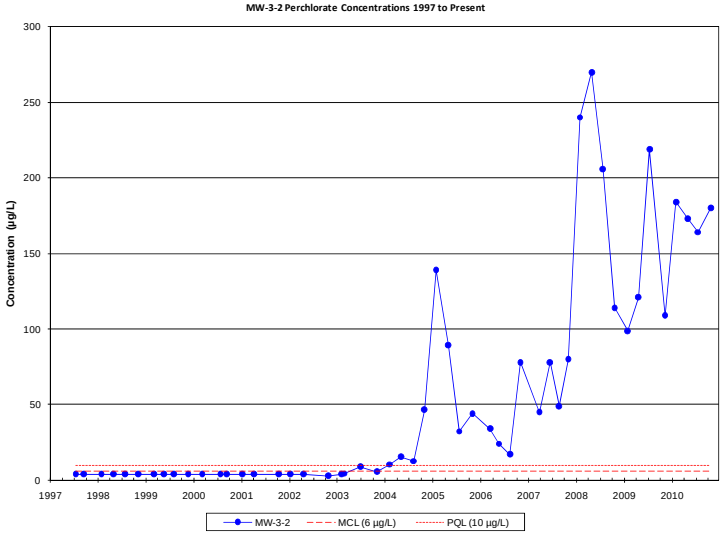
Project Name: JPL GW Monitoring 4Q10 | **Project No.: 4-73805**

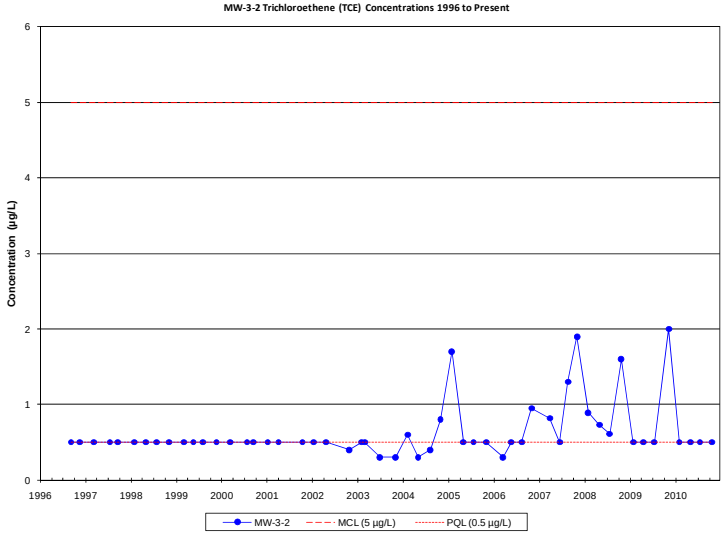
WELL #	*DATE*	*TIME*	*DEPTH (FT.)*
MW-1	11/9/2010	1404	24.78
MW-5	11/9/2010	649	49.42
MW-6	11/9/2010	614	161.53
MW-7	11/9/2010	605	188.12
MW-8	11/9/2010	555	114.58
MW-9	11/9/2010	1359	16.43
MW-10	11/9/2010	643	65.82
MW-13	11/9/2010	552	159.54
MW-15	11/9/2010	559	29.19
MW-16	11/9/2010	609	211.63

ATTACHMENT 6: TIME SERIES PLOTS

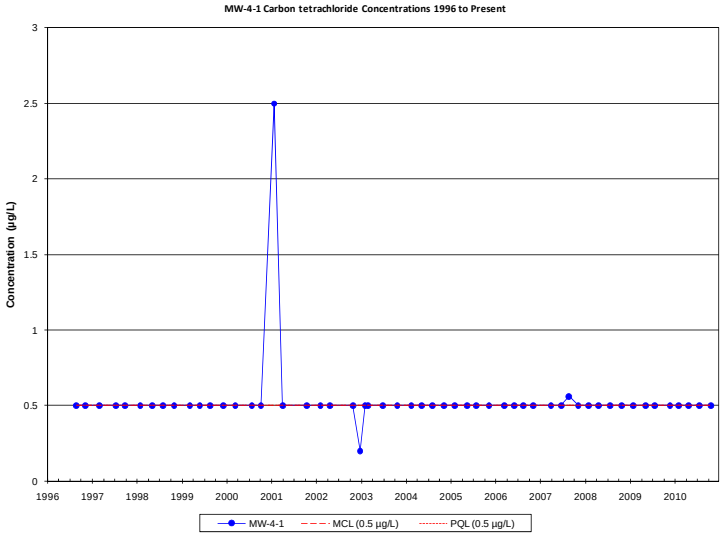


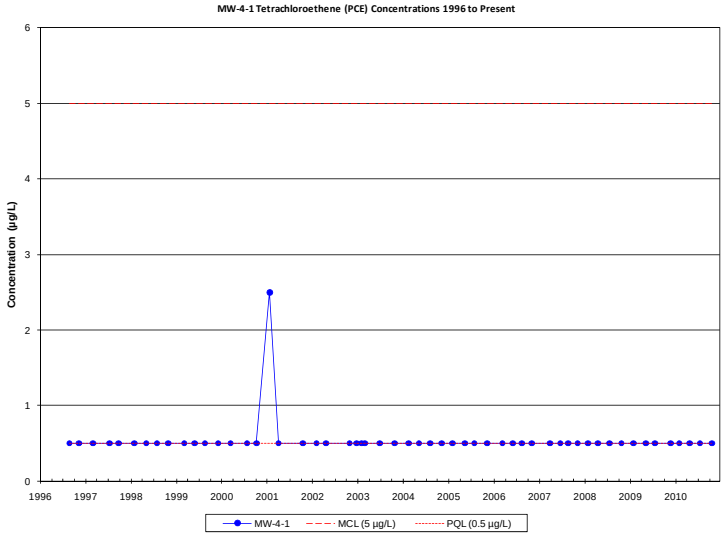


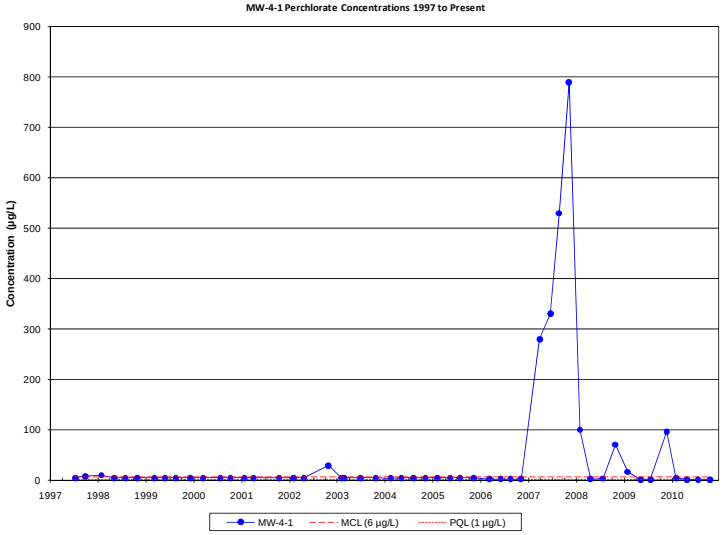


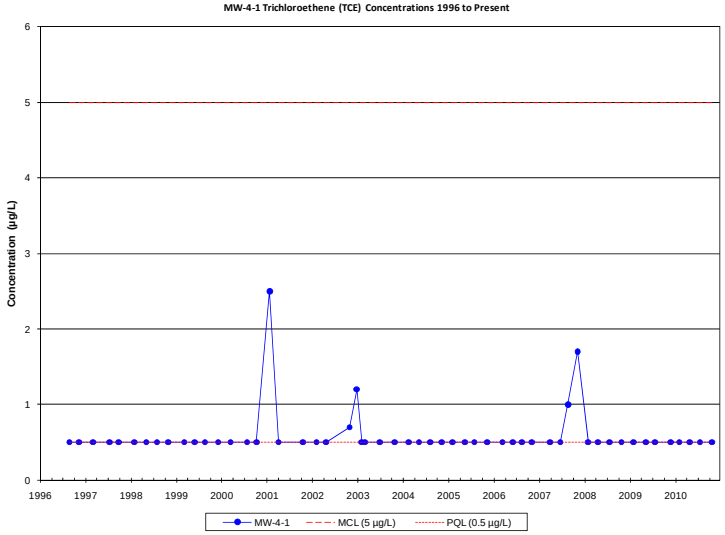


VOCs and Perchlorate Time Series Plots for MW-3-2

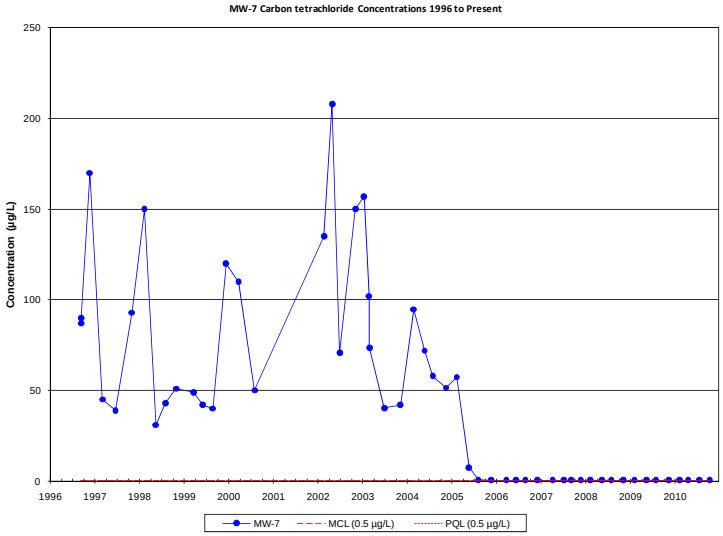


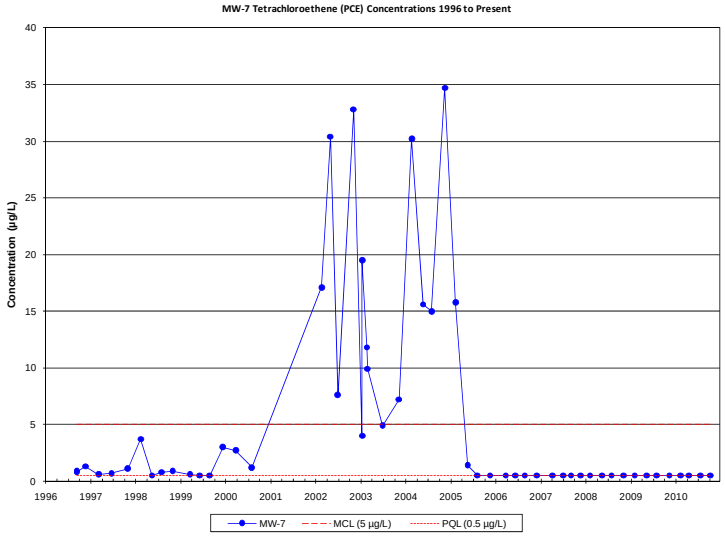


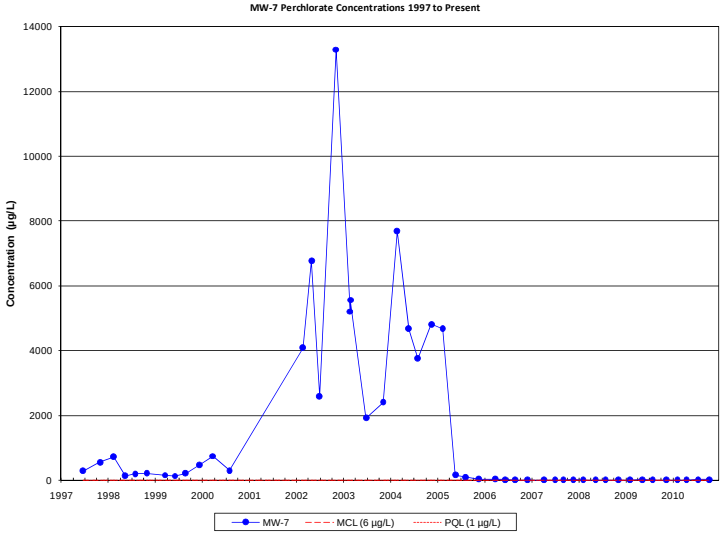


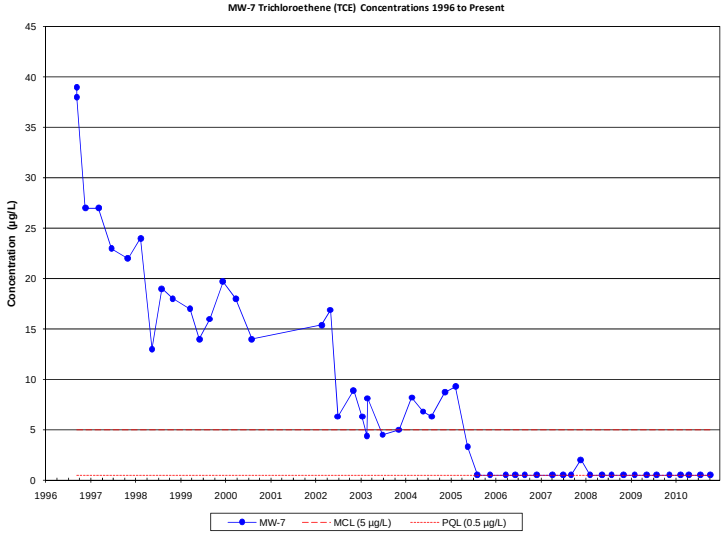


VOCs and Perchlorate Time Series Plots for MW-4-1

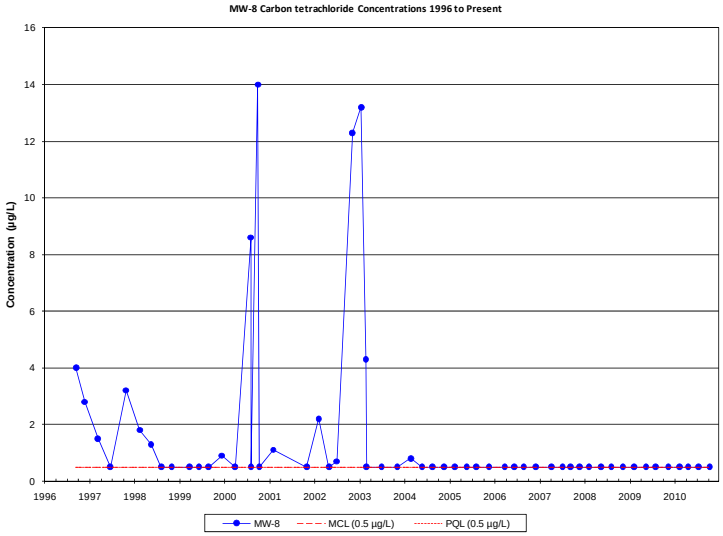


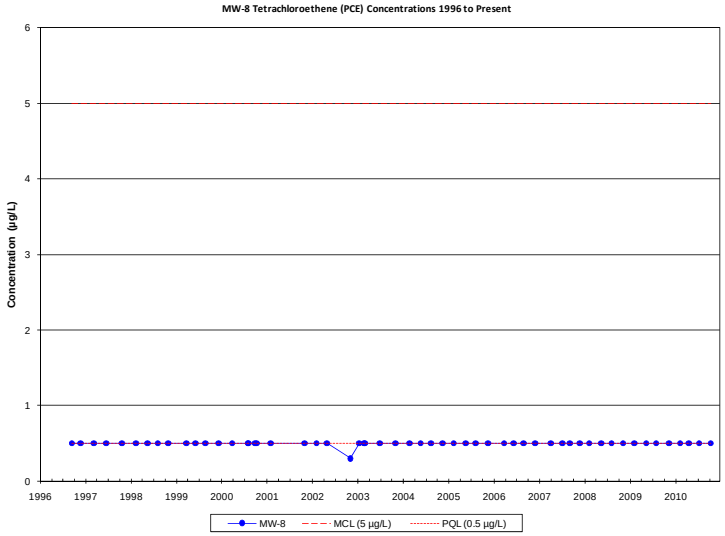


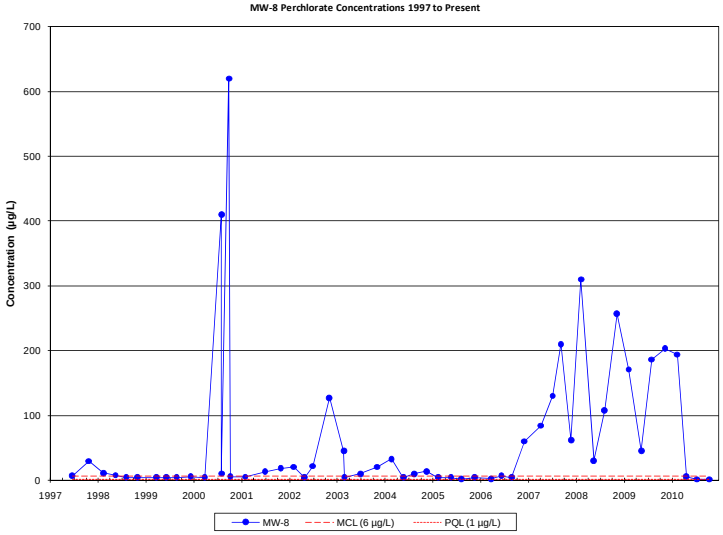


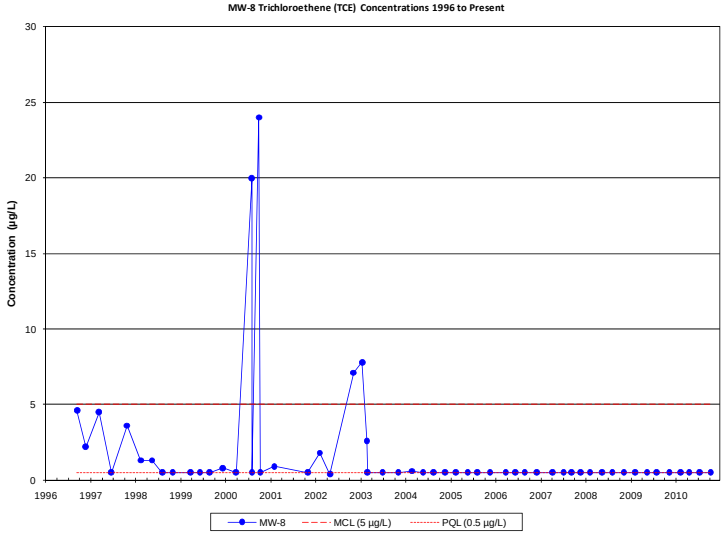


VOCs and Perchlorate Time Series Plots for MW-7

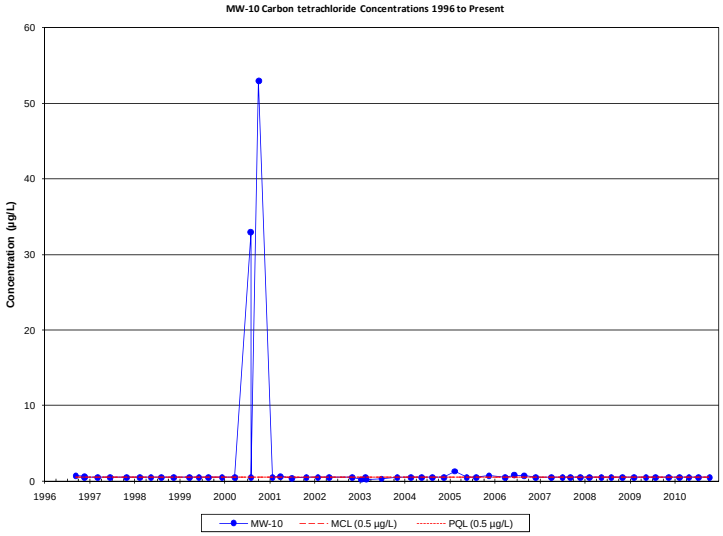


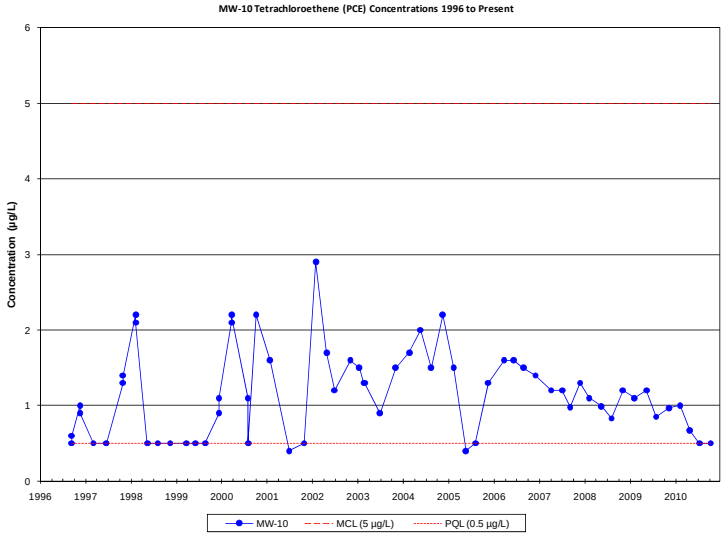


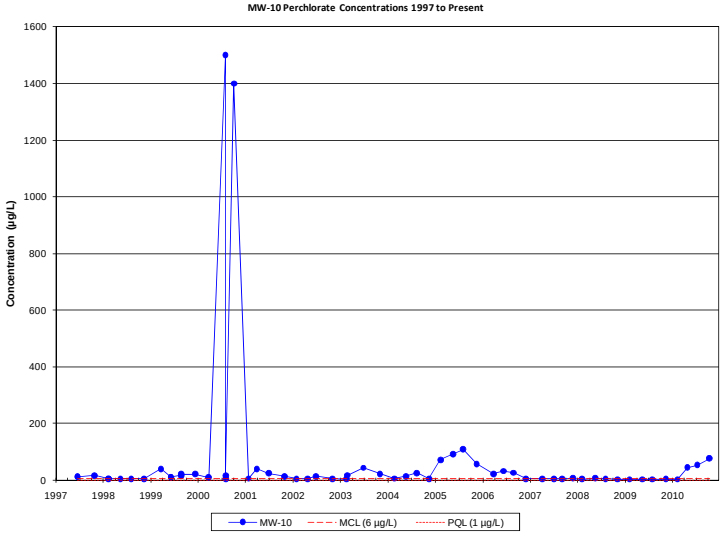


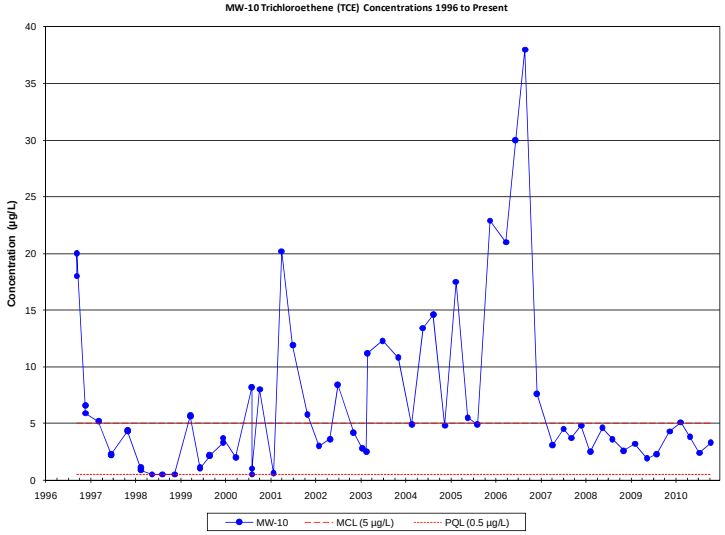


VOCs and Perchlorate Time Series Plots for MW-8

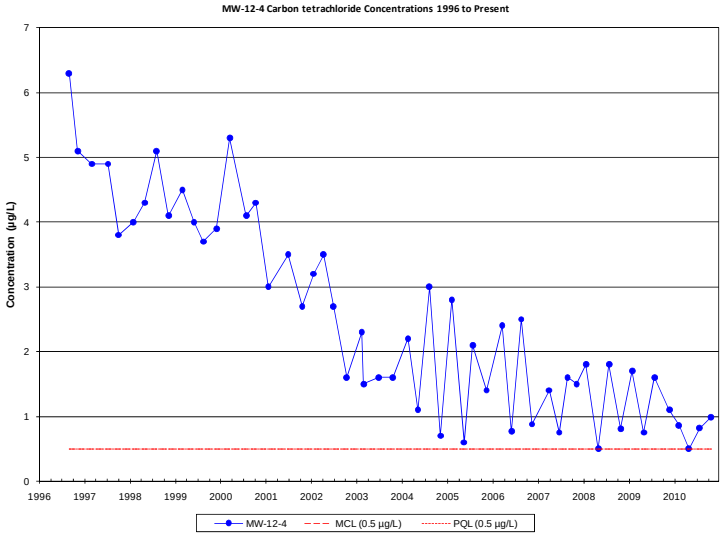


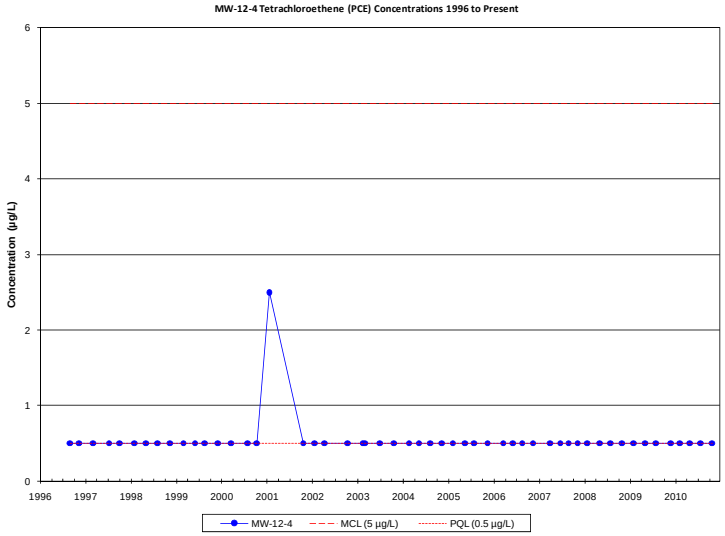


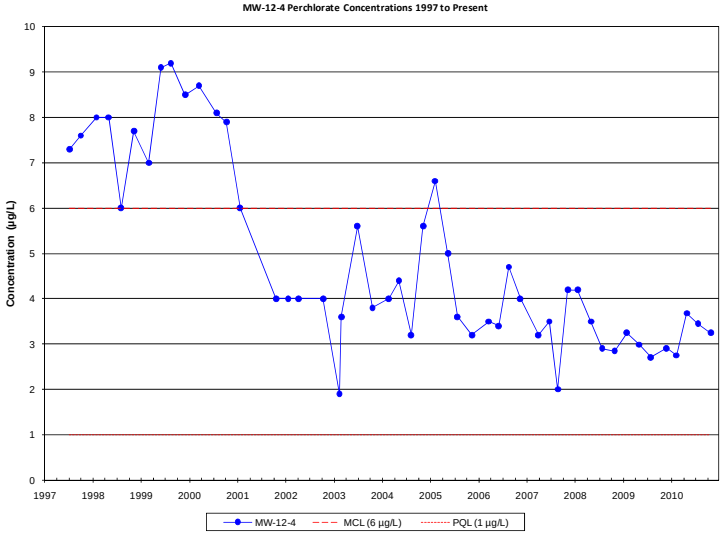


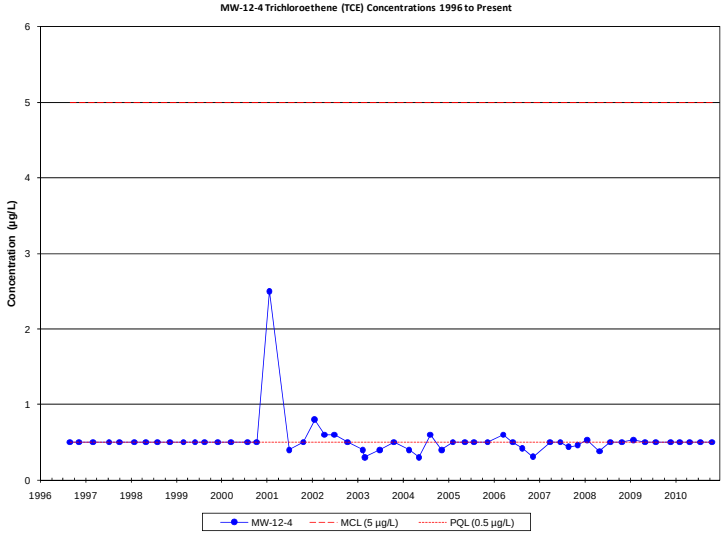


VOCs and Perchlorate Time Series Plots for MW-10

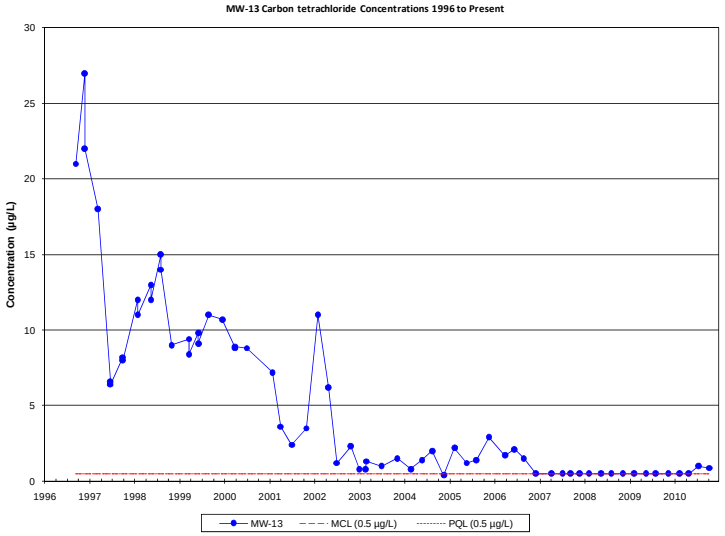


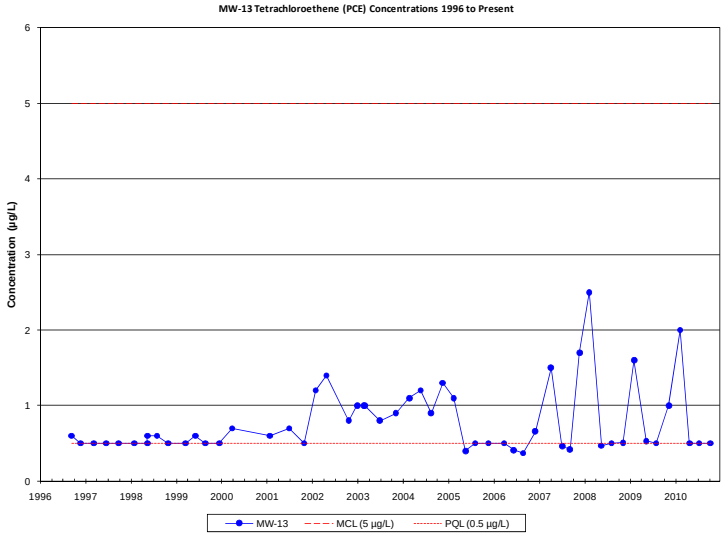


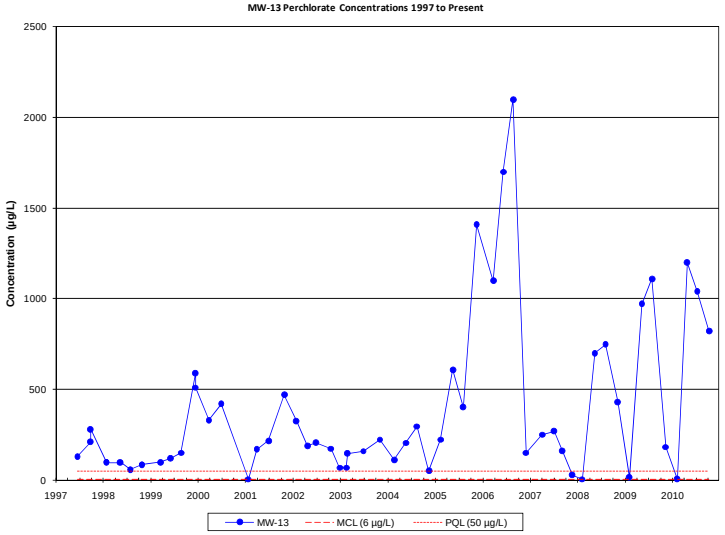


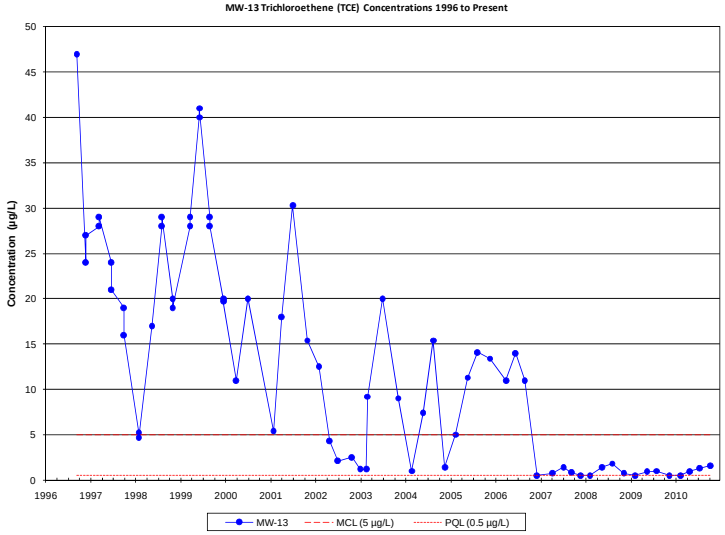


VOCs and Perchlorate Time Series Plots for MW-12-4

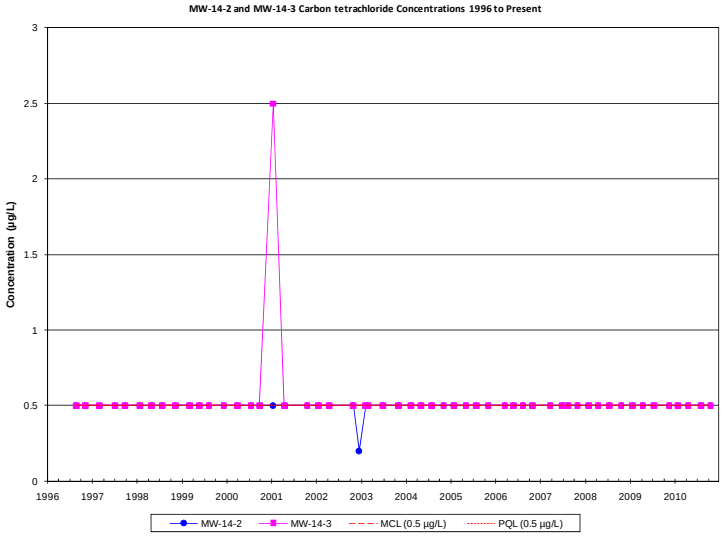


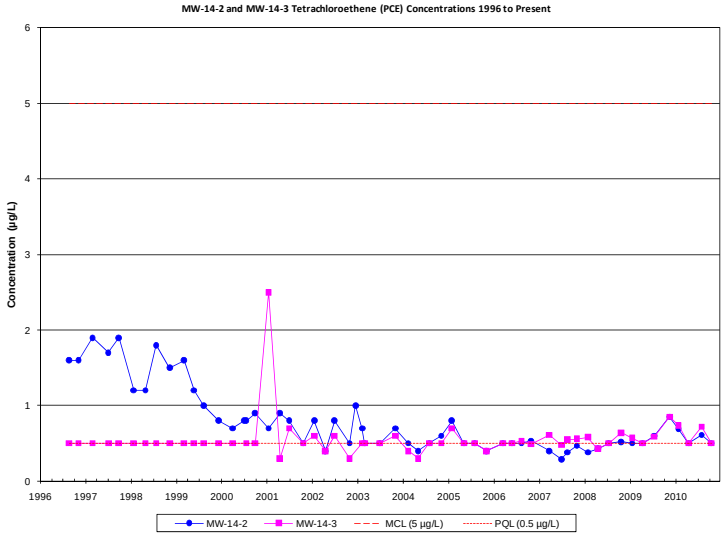


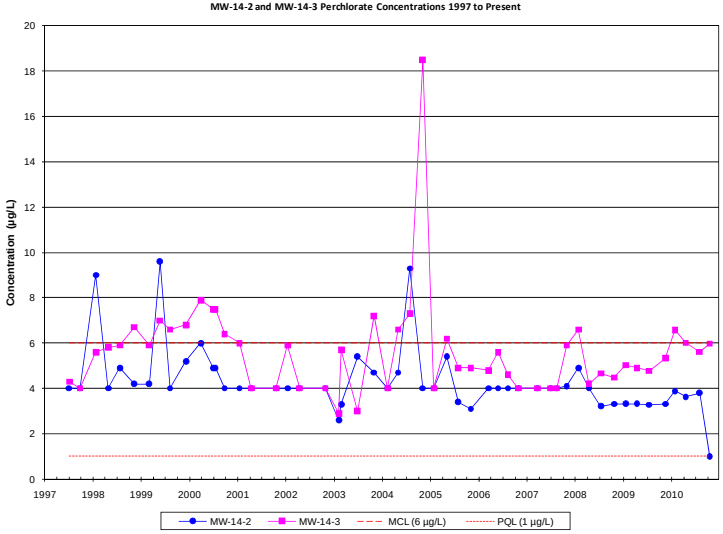


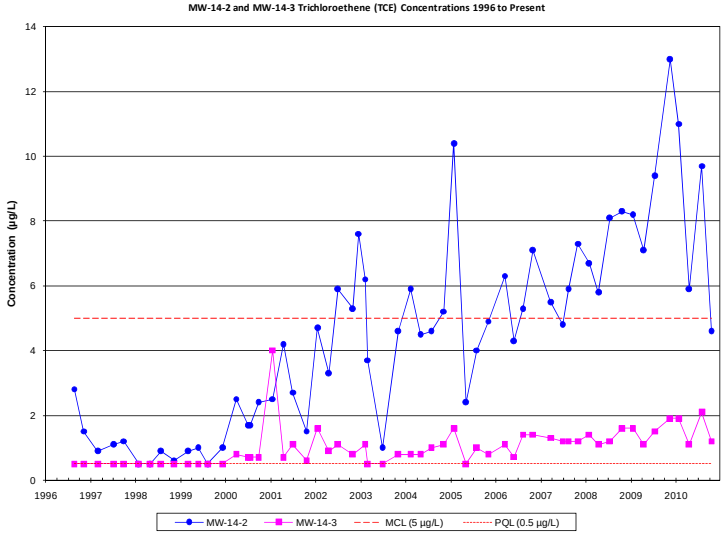


VOCs and Perchlorate Time Series Plots for MW-13

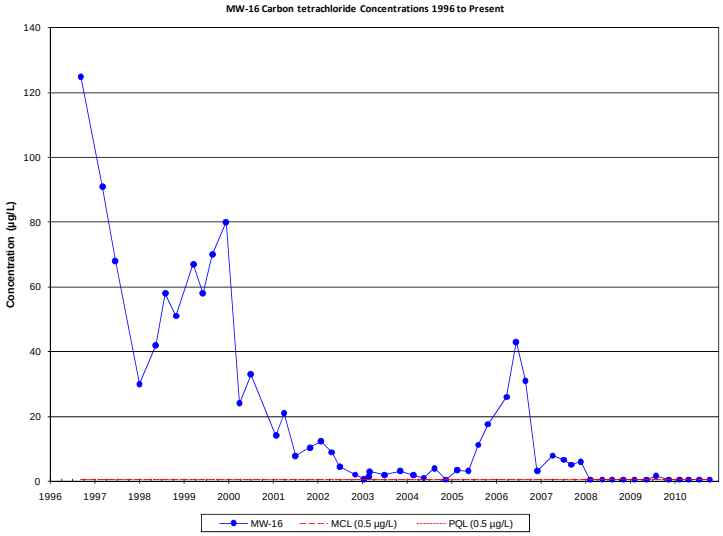


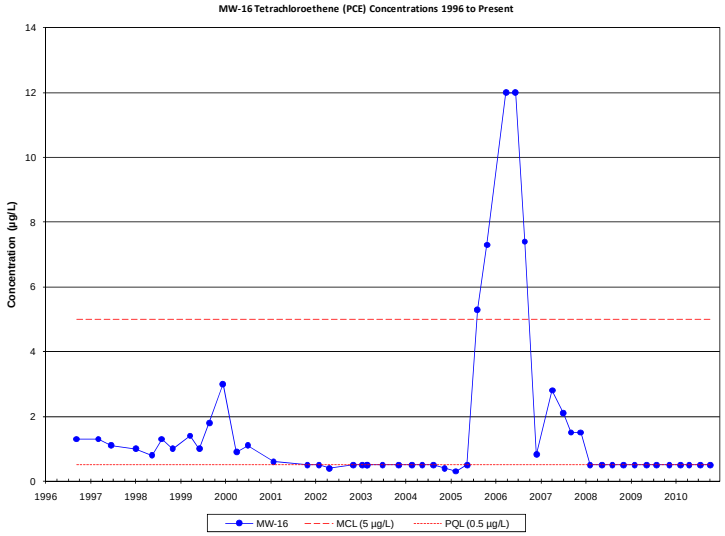


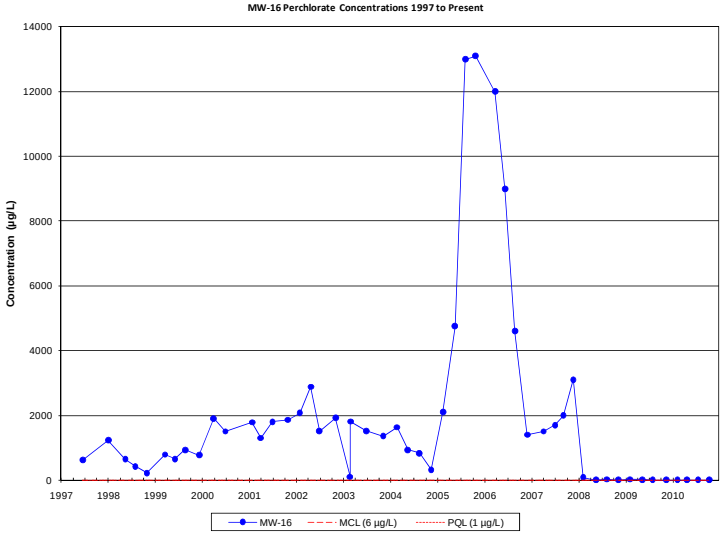


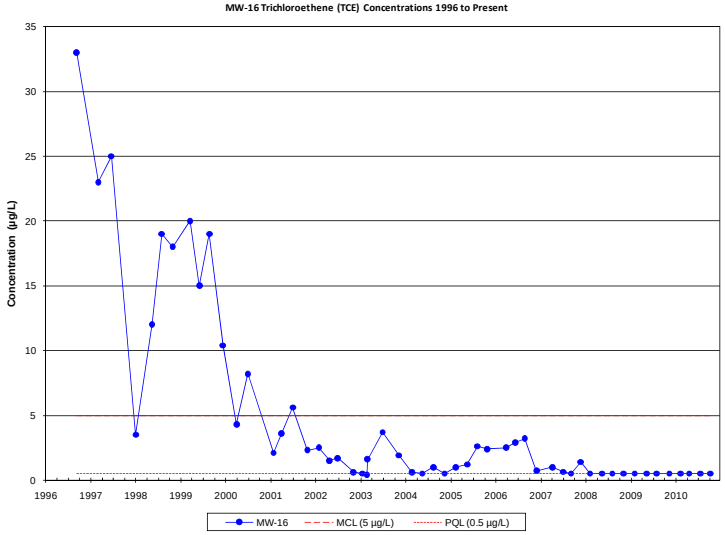


VOCs and Perchlorate Time Series Plots for MW-14-2 and MW-14-3

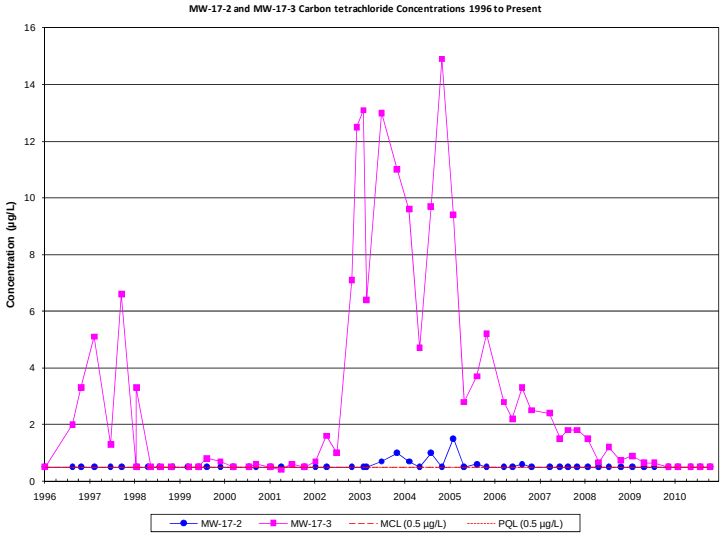


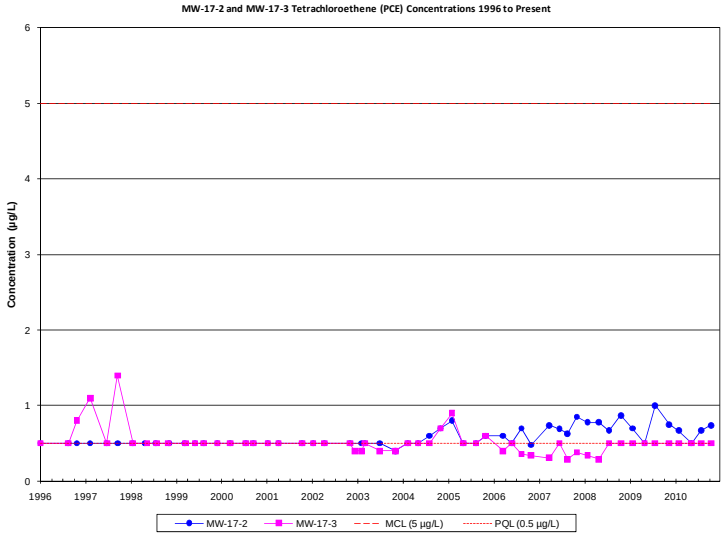


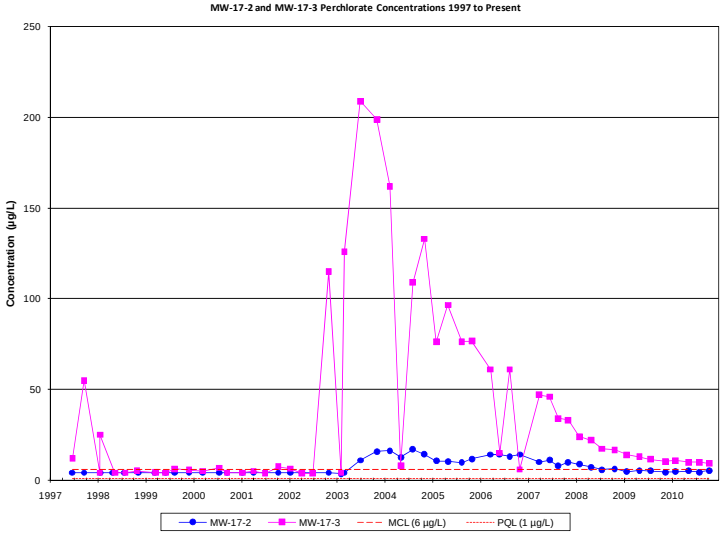


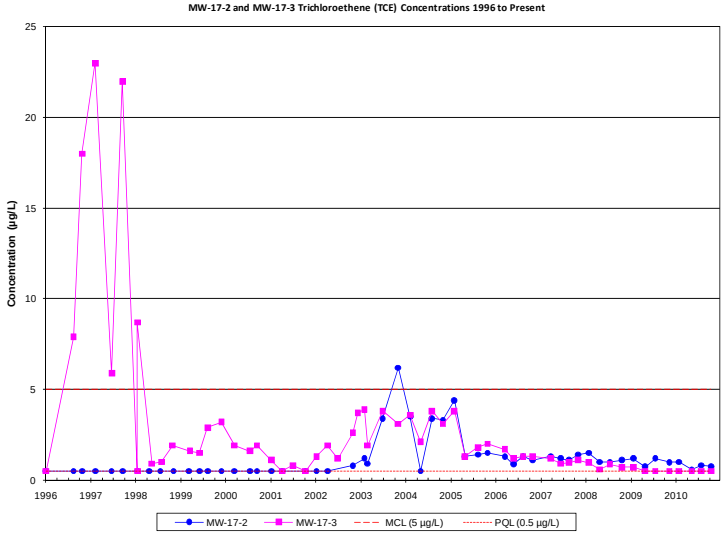


VOCs and Perchlorate Time Series Plots for MW-16

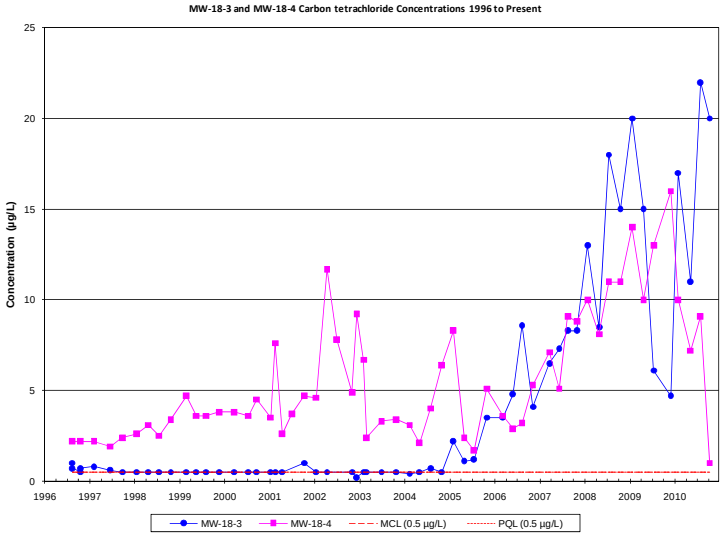


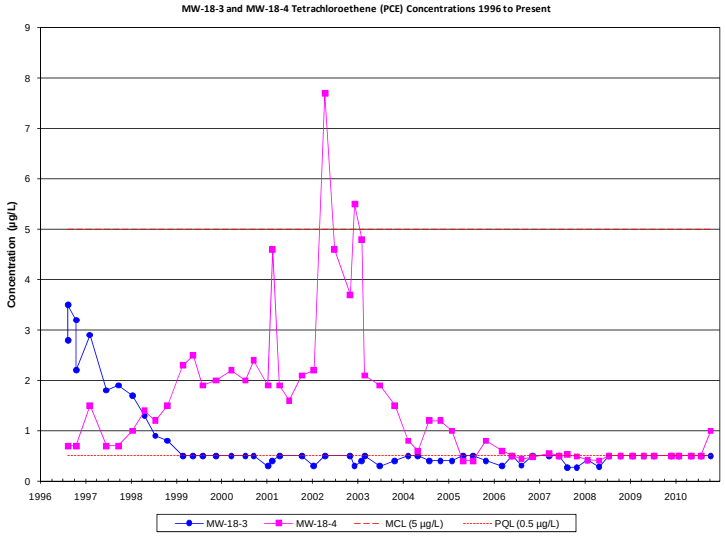


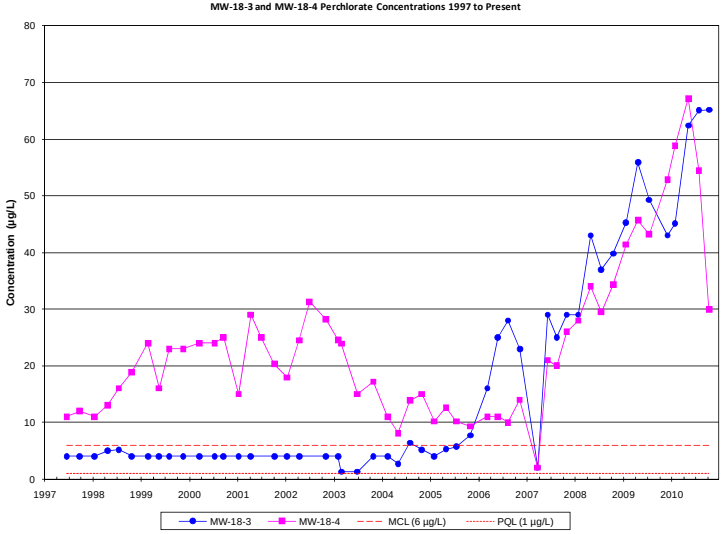


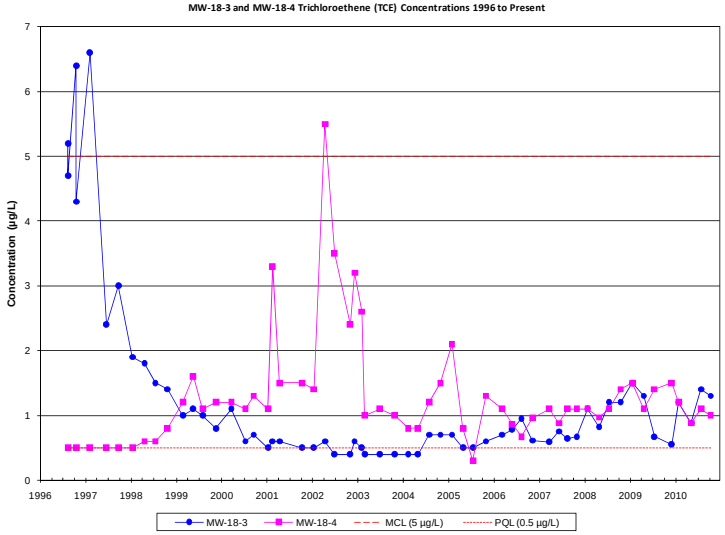


VOCs and Perchlorate Time Series Plots for MW-17-2 and MW-17-3

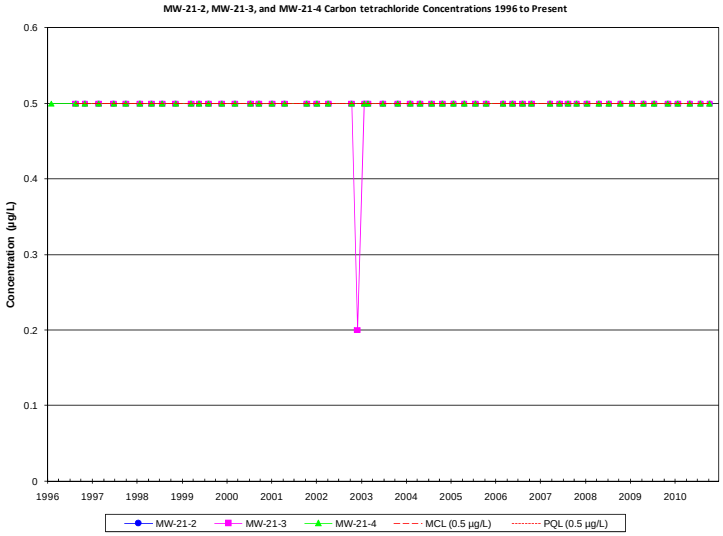


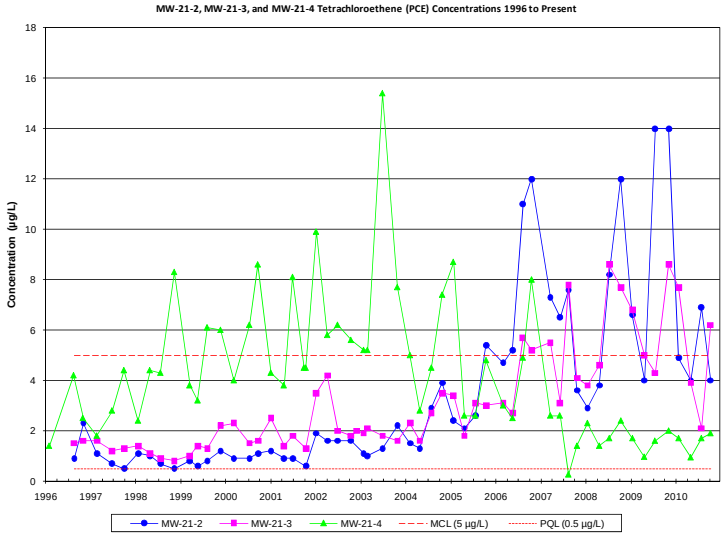


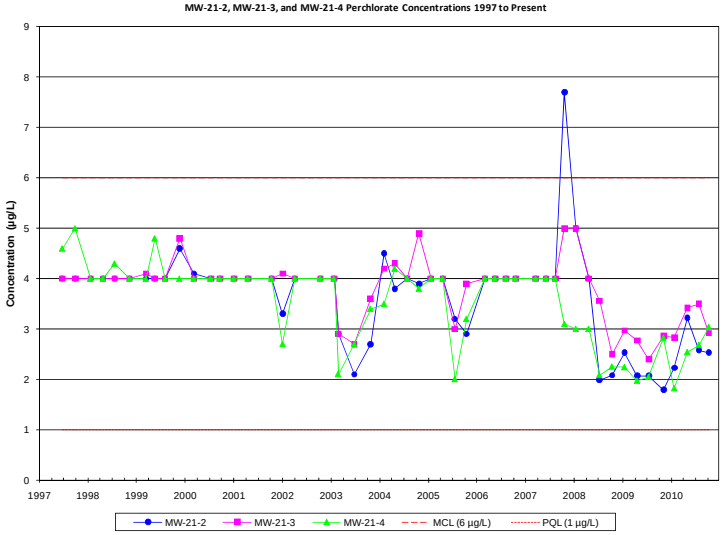


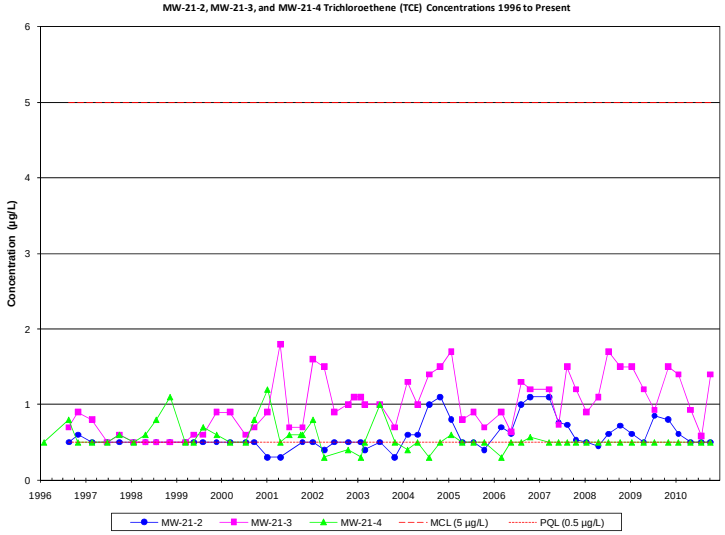


VOCs and Perchlorate Time Series Plots for MW-18-3 and MW-18-4

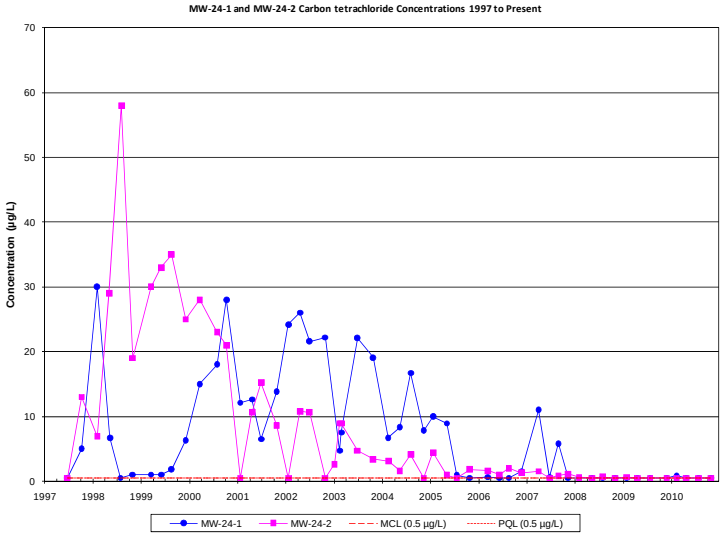


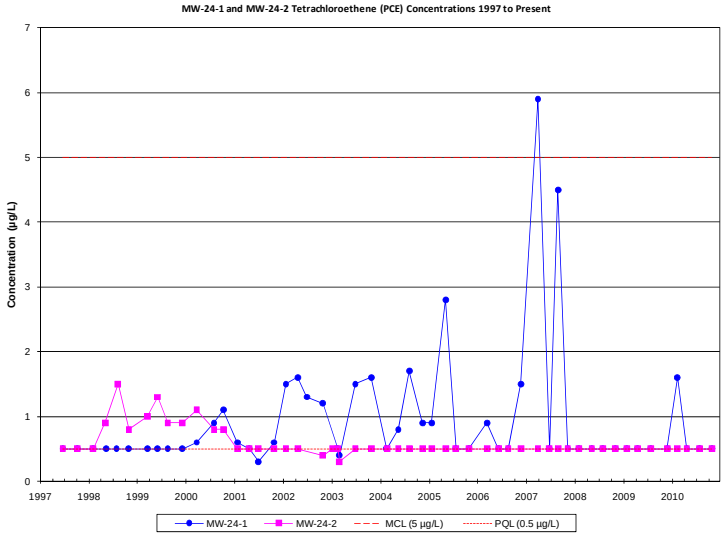


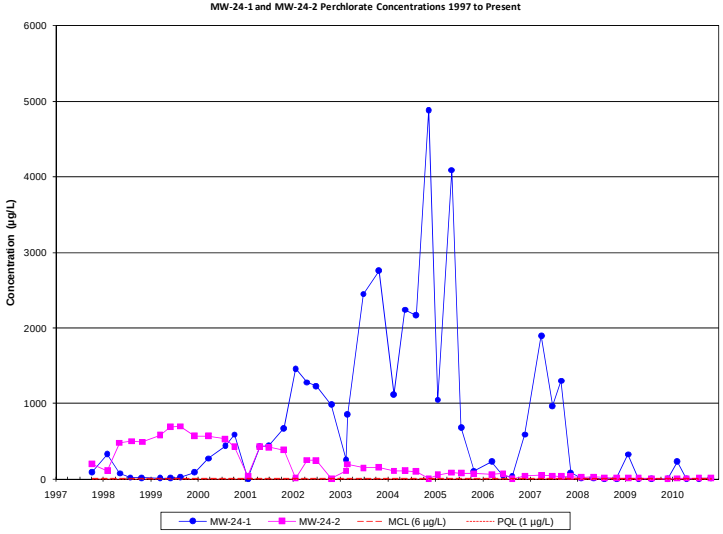


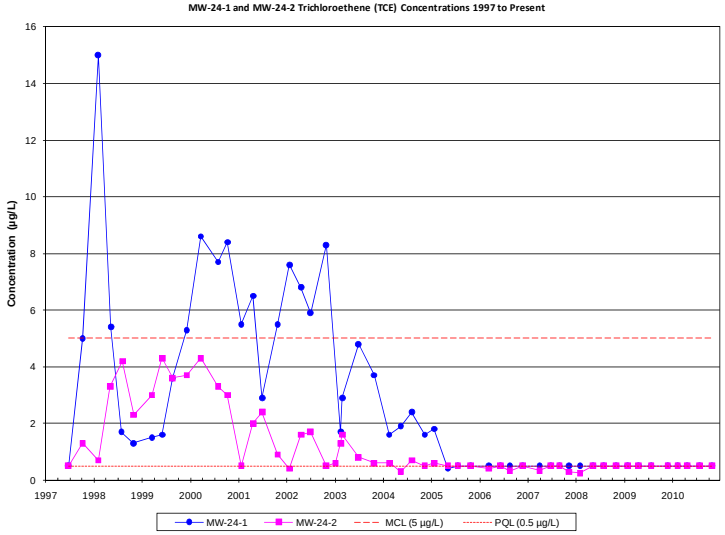


VOCs and Perchlorate Time Series Plots for MW-21-2 and MW-21-3 and MW-21-4









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