

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 2nd Quarter 2012 sampling event was conducted by Battelle and Insight Environmental, Inc.

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-1

Battelle
The Business of Innovation

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 100006114
 Navy Contract No: _____
 Sampled By: David Loera
 Date: 4-25-12
 Weather: cloudy/warm

505 King Avenue
Columbus, Ohio 43201

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{120'}{\text{TD (feet)}} - \frac{26.65'}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{182.82}{\text{Calculated Purge Volume}} \text{ Gallons}$$

PURGE METHOD

PUMP INTAKE SETTING

Bailer - Type: _____ Pump - Type: 2" Grundfos

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
1206		water	to surface						
1217	28.69	46.2	7.23	0.539	1.90	2.54	16.64	80	Flow Rate 4.2 GPM
1222	28.77	67.2	7.35	0.540	0.98	1.83	16.69	65	
1227	28.81	88.2	7.39	0.541	0.68	1.43	16.69	54	
1232	28.83	109.2	7.21	0.542	0.49	1.02	16.62	45	
1237	28.86	130.2	7.42	0.541	0.32	0.79	16.75	38	
1242	28.88	151.2	7.42	0.542	0.31	0.60	16.63	33	
1247	28.90	172.2	7.43	0.543	0.28	0.47	16.63	28	
1252									

Total Purge Volume: 193.2 (Gallons)

Total Discharge: 3.17 (Casing Volumes)

Approx. Purge Rate: 4.2 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1206 Purge time start: 1206

Meters: QED MP 20, Dakton 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): 90'

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip/Source/)</u>
Sample ID: <u>MW-1</u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u>1250</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>Alpha-S</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
<u>CAS-1</u>	No. of Containers: _____	No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-5

Battelle
The Business of Innovation

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 10000 6/14
 Navy Contract No: _____
 Sampled By: David Loera
 Date: 4-26-12
 Weather: cold/cloudy/showers

505 King Avenue
Columbus, Ohio 43201

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{140' - 47.67'}{2} \right) \times \frac{4^2}{4} \times 3 \times 0.0408 = 180.82 \text{ Gallons}$$

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

PURGE METHOD

PUMP INTAKE SETTING

Bailer - Type: _____ Pump - Type: 2" Grundfos

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
0852		Water	to	surface					
0857	48.07	20.5	6.55	0.452	3.05	0.28	14.32	111	Flow Rate 4.1 GPM
0903	48.08	41	6.76	0.448	4.49	0.03	14.33	98	
0908	48.08	61.5	6.83	0.446	3.58	0.02	14.28	88	
0913	48.08	82	6.86	0.442	2.72	0.00	14.26	84	
0918	48.08	102.5	6.88	0.446	2.51	0.00	14.22	81	
0923	48.08	123	6.89	0.446	2.35	0.00	14.23	79	
0928	48.08	143.5	6.90	0.444	1.81	0.00	14.22	77	
0933	48.08	164	6.91	0.446	1.57	0.00	14.21	74	

Total Purge Volume: 220 (Gallons)
 Total Discharge: 3.65 (Casing Volumes)
 Approx. Purge Rate: 4.1 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 0852 Purge time start: 0852 Stop 0955
Motors: QED MP 20, Oakton F-100

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

WATER DISPOSAL

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

WELL SAMPLING

Sample Depth in feet (BTOC): 125'

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip/Source/)</u>
Sample ID: <u>MW-5</u>	Sample ID: <u>DUPE-7-2Q12</u>	Type: _____	Type: _____
Sample Time: <u>0936</u>	Sample Time: <u>0936</u>	Sample ID: _____	Sample ID: _____
No. of Containers: <u>Alpha-5</u>	No. of Containers: <u>Alpha-5</u>	Sample Time: _____	Sample Time: _____
<u>CAS-1</u>	<u>CAS-1</u>	No. of Containers: _____	No. of Containers: _____
<u>MWH-20</u>			

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-6

Battelle
The Business of Innovation

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 100006114
 Navy Contract No: _____
 Sampled By: David Loera
 Date: 4-24-12
 Weather: overcast/cool

505 King Avenue
Columbus, Ohio 43201

PURGE VOLUME CALCULATION (casing volume):

$(\underline{245'} - \underline{163'}) \times \underline{4^2} \times \underline{3} \times 0.0408 = \underline{160.59}$ Gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE METHOD

PUMP INTAKE SETTING

Bailer - Type: _____ X Pump - Type: 2" Grundfos

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
<u>0753</u>		<u>Water</u>	<u>to</u>	<u>Surface</u>					
<u>0802</u>	<u>163.87</u>	<u>22.5</u>	<u>6.58</u>	<u>1.191</u>	<u>24.0</u>	<u>8.30</u>	<u>20.42</u>	<u>120</u>	<u>Flow Rate 2.5 GPM</u>
<u>0810</u>	<u>163.90</u>	<u>42.5</u>	<u>6.65</u>	<u>1.193</u>	<u>4.57</u>	<u>8.53</u>	<u>20.42</u>	<u>122</u>	
<u>0818</u>	<u>163.91</u>	<u>62.5</u>	<u>6.67</u>	<u>1.192</u>	<u>3.59</u>	<u>8.44</u>	<u>20.42</u>	<u>125</u>	
<u>0826</u>	<u>163.91</u>	<u>82.5</u>	<u>6.68</u>	<u>1.202</u>	<u>6.23</u>	<u>8.46</u>	<u>20.43</u>	<u>125</u>	
<u>0834</u>	<u>163.92</u>	<u>102.5</u>	<u>6.70</u>	<u>1.193</u>	<u>2.35</u>	<u>8.33</u>	<u>20.43</u>	<u>129</u>	
<u>0842</u>	<u>163.92</u>	<u>122.5</u>	<u>6.70</u>	<u>1.201</u>	<u>5.18</u>	<u>8.38</u>	<u>20.43</u>	<u>131</u>	
<u>0850</u>	<u>163.95</u>	<u>142.5</u>	<u>6.70</u>	<u>1.193</u>	<u>1.39</u>	<u>8.32</u>	<u>20.44</u>	<u>134</u>	
<u>0857</u>	<u>163.95</u>	<u>160.0</u>	<u>6.71</u>	<u>1.197</u>	<u>6.67</u>	<u>8.38</u>	<u>20.44</u>	<u>136</u>	<u>Stop @ 0908</u>

Total Purge Volume: 187.5 (Gallons)

Total Discharge: 3.5 (Casing Volumes)

Approx. Purge Rate: 2.5 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 0753 Purge time start: 0753

Meters: QED MP20, Dakton T-100

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

WATER DISPOSAL

Purge water storage: polytank

Purge Water disposal: OU1 System-Battelle-JPL

WELL SAMPLING

Sample Depth in feet (BTOC): 230'

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip/Source/)</u>
Sample ID: <u>MW-6</u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u>0858</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>Alpha-5</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
<u>CAS-1</u>	No. of Containers: _____	No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-7

Battelle
The Business of Innovation

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 100006114
 Navy Contract No: _____
 Sampled By: David Loera
 Date: 4-23-12
 Weather: overcast/cool/driizzle

505 King Avenue
Columbus, Ohio 43201

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{275' - 190.21'}{54.79} \right) \times 4^2 \times 3 \times 0.0408 = 166.05 \text{ Gallons}$$

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

PURGE METHOD

PUMP INTAKE SETTING

Bailer - Type: _____ Pump - Type: 2" Grundfos

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
0906		Water	to	Surface					
0918	190.47	28.8	7.03	0.582	7.26	0.26	23.81	69	Flow Rate 2.4 GPM
0927	190.46	50.4	7.14	0.586	5.86	0.08	23.86	52	
0936	190.47	72	7.16	0.584	5.66	0.09	23.87	46	
0944	190.50	91.2	7.17	0.584	6.53	0.09	23.87	45	
0952	190.45	110.4	7.18	0.585	4.36	0.09	23.89	46	
1001	190.46	132	7.19	0.585	8.98	0.07	23.91	40	
1014	190.45	163.2	7.19	0.583	2.10	0.09	23.89	37	
1019									Stop

Total Purge Volume: 175.2 (Gallons) / 55.35

Total Discharge: 3.17 (Casing Volumes)

Approx. Purge Rate: 2.4 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 0905 Purge time start: 0906

Meters: RED 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): 265'

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip/Source/_____)</u>
Sample ID: <u>MW-7</u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u>1016</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>Alpha - 5</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
<u>CAS - 1</u>	No. of Containers: _____	No. of Containers: _____	No. of Containers: _____

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-8

Battelle
The Business of Innovation

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 100006114
 Navy Contract No: _____
 Sampled By: David Loera
 Date: 4-24-12
 Weather: Sunny/warm

505 King Avenue
Columbus, Ohio 43201

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{205' - 115.12'}{2.31} \right) \times \frac{4^2}{4} \times 3 \times 0.0408 = 176.02 \text{ Gallons}$$

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

PURGE METHOD

PUMP INTAKE SETTING

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

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
1206		Water	to	surface					
1216	115.46	35	6.89	0.416	0.44	0.76	15.73	98	Flow Rate 3.5 GPM
1223	115.46	70	7.08	0.416	0.18	0.35	15.69	73	
1231	115.47	94.5	7.13	0.416	0.46	0.27	15.76	58	
1238	115.46	122.5	7.15	0.414	0.10	0.25	15.67	52	
1246	115.47	147	7.16	0.415	0.23	0.24	15.65	47	
1256	115.46	175	7.17	0.415	0.18	0.23	15.65	45	
1300									Stop

Total Purge Volume: 189 (Gallons)
 Total Discharge: 3.22 (Casing Volumes)
 Approx. Purge Rate: 3.5 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1156 Purge time start: 1156
Meters: Oakton T-100, OED MP20

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'

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip/Source/)</u>
Sample ID: <u>MW-8</u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u>1257</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>Alpha-5</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
<u>CAS-1</u>	No. of Containers: _____	No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-9

Battelle
The Business of Innovation

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 100006114
 Navy Contract No: _____
 Sampled By: David Loera
 Date: 4-25-12
 Weather: Sunny/Warm

505 King Avenue
Columbus, Ohio 43201

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{68' - 18.45}{\text{TD (feet)}} \right) \times \frac{4^2}{\text{WL (feet)}} \times \frac{3}{\text{D (inches)}} \times 0.0408 = \frac{97.03}{\text{\# Vols}} \times 0.0408 = \underline{97.03} \text{ Gallons}$$

Calculated Purge Volume

PURGE METHOD

PUMP INTAKE SETTING

Bailer - Type: _____ X Pump - Type: 2" Grundfos

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
0922		Water	to	surface					
0927	21.46	15.5	6.59	0.336	1.68	0.93	17.43	118	Flow Rate 3.1 GPM
0932	21.53	31	6.78	0.312	2.36	1.48	17.40	110	
0937	21.59	46.5	6.86	0.328	6.90	1.12	17.39	100	
0942	21.60	62	6.92	0.341	6.36	0.83	17.48	93	
0947	21.63	77.5	6.96	0.347	3.85	0.72	17.63	87	
0952	21.65	93	6.98	0.350	2.17	0.67	17.58	85	
0956									Stop

Total Purge Volume: 105.4 (Gallons)
 Total Discharge: 3.26 (Casing Volumes)
 Approx. Purge Rate: 3.1 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 0922 Purge time start: 0922
Meters: QED MP 20, Daktar 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'

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip/Source/)</u>
Sample ID: <u>MW-9</u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u>0953</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>Alpha-5</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
<u>CAS-1</u>	No. of Containers: _____	No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-13

Battelle
The Business of Innovation

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 100006114
 Navy Contract No: _____
 Sampled By: David Loera
 Date: 4-24-12
 Weather: sunny/warm

505 King Avenue
Columbus, Ohio 43201

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{235' - 163.25}{\text{TD (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{140.52}{\text{Calculated Purge Volume}} \text{ Gallons}$$

PURGE METHOD

PUMP INTAKE SETTING

Bailer - Type: _____ X Pump - Type: 2" Grundfos

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
1008		Water	to	surface					
1018	163.38	27	6.82	0.638	2.59	7.67	21.87	94	Flow Rate 2.7 GPM
1026	161.38	48.6	6.87	0.641	0.65	7.68	21.89	92	
1035	161.37	72.9	6.88	0.637	0.40	7.67	21.94	91	
1043	161.37	94.5	6.90	0.638	0.19	7.73	21.95	91	
1050	161.37	113.4	6.90	0.638	0.23	7.73	22.00	93	
1059	161.36	137.7	6.52	0.636	0.15	7.72	22.01	115	
1109		164.7							Stop

Total Purge Volume: 164.7 (Gallons)

Total Discharge: 3.52 (Casing Volumes)

Approx. Purge Rate: 2.7 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1008 Purge time start: 1008

Meters: QED MP 20, Dakton T-100

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

WATER DISPOSAL

Purge water storage: _____ polytank

Purge Water disposal: OU1 System-Battelle-JPL

WELL SAMPLING

Sample Depth in feet (BTOC): 220'

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip/Source/)</u>
Sample ID: <u>MW-13</u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u>1100</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>Alpha-5</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
<u>CAS-4</u>	No. of Containers: _____	No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-15

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

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 100006114
 Navy Contract No: _____
 Sampled By: David Loera
 Date: 4-23-12
 Weather: overcast/drizzle

PURGE VOLUME CALCULATION (casing volume):

$(74' - 31.71') \times 4^2 \times 3 \times 0.0408 = 82.82$ Gallons
 TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE METHOD

PUMP INTAKE SETTING

Bailer - Type: _____ X Pump - Type: 2" Grundfos

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
1317		Water to	Surface						
1325	33.00	36	6.69	0.432	0.24	0.44	16.36	105	Flow Rate 4.5 GPM
1329	33.03	54	6.90	0.429	0.22	0.25	16.38	99	
1332	33.05	67.5	7.03	0.430	0.18	0.20	16.38	92	
1336	33.07	85.5	7.13	0.428	0.17	0.18	16.38	87	
1338									Stop

Total Purge Volume: 94.5 (Gallons)
 Total Discharge: 3.42 (Casing Volumes)
 Approx. Purge Rate: 4.5 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1317 Purge time start: 1317
Motors: QED MP20, Dakton T-100

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

WATER DISPOSAL

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

WELL SAMPLING

Sample Depth in feet (BTOC): 54'

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip/Source/)</u>
Sample ID: <u>MW-15</u>	Sample ID: <u>MW-15-MS/MSD</u>	Type: _____	Type: _____
Sample Time: <u>1336</u>	Sample Time: <u>1336</u>	Sample ID: _____	Sample ID: _____
No. of Containers: <u>Alpha-5</u>	No. of Containers: <u>Alpha-5</u>	Sample Time: _____	Sample Time: _____
<u>CAS-1</u>	<u>CAS-1</u>	No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-16

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

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 100006114
 Navy Contract No: _____
 Sampled By: David Loera
 Date: 4-23-12
 Weather: over cast / drizzle

PURGE VOLUME CALCULATION (casing volume):

$(285' - 214.09') \times \frac{4^2}{4} \times 3 \times 0.0408 = 138.87$ Gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE METHOD

PUMP INTAKE SETTING

Bailer - Type: _____ Pump - Type: 2" Grundfos

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
1117		Water to surface							
1127	214.12	26	7.04	0.580	0.21	0.94	23.94	25	Flow Rate 2.0 GPM
1139	214.19	44	7.19	0.582	0.07	0.82	23.94	39	
1149	214.42	64	7.21	0.580	0.13	0.95	23.87	46	
1159	214.21	84	7.22	0.583	0.09	0.95	23.88	54	
1210	214.14	106	7.23	0.585	0.05	0.73	23.89	60	
1220	214.13	126	7.23	0.580	0.06	0.74	23.91	63	
1235		156							Stop

Total Purge Volume: 156 (Gallons)
 Total Discharge: 3.37 (Casing Volumes)
 Approx. Purge Rate: 2.0 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1116 Purge time start: 1117
Meters: QED MP20, Dakton T-100

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

WATER DISPOSAL

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

WELL SAMPLING

Sample Depth in feet (BTOC): 265'

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip/Source/)</u>
Sample ID: <u>MW-16</u>	Sample ID: <u>DUPE-8-2Q12</u>	Type: _____	Type: _____
Sample Time: <u>1227</u>	Sample Time: <u>1227</u>	Sample ID: _____	Sample ID: _____
No. of Containers: <u>Alpha-5</u>	No. of Containers: <u>Alpha-5</u>	Sample Time: _____	Sample Time: _____
<u>CAS-4</u>	<u>CAS-4</u>	No. of Containers: _____	No. of Containers: _____

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: _____
 Navy Contract No: 10000 6/114
 Sampled By: David Loera
 Date: 4-26-12
 Weather: overcast/light showers

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{155' - 65.54'}{\text{TD (feet)}} \right) \times \frac{4^2}{\text{WL (feet)}} \times \frac{3}{\text{D (inches)}} \times \frac{\# \text{ Vols}}{\text{# Vols}} \times 0.0408 = \frac{175.20}{\text{Calculated Purge Volume}} \text{ Gallons}$$

PURGE METHOD

PUMP INTAKE SETTING

Bailer - Type: _____ X Pump - Type: 2" Grundfos

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
1050		Water	to	surface					
1059	65.64	23.4	6.73	0.315	0.21	2.98	18.85	129	Flow Rate 2.6 GPM
1108	65.66	46.8	6.87	0.333	0.16	2.40	18.89	129	
1117	65.64	70.2	6.91	0.328	0.11	2.40	18.90	131	
1126	65.65	93.6	6.93	0.331	0.10	2.01	18.92	134	
1135	65.65	117	6.92	0.340	0.10	1.75	17.85	131	
1144	65.64	140.4	6.95	0.332	0.18	2.22	18.93	130	
1153	65.65	163.8	6.94	0.343	0.11	2.04	18.90	131	
1219									Stop

Total Purge Volume: 200 (Gallons)
 Total Discharge: 3.42 (Casing Volumes)
 Approx. Purge Rate: 2.6 (GMP)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1049 Purge time start: 1050
Meters: QED MP20, Oakton T-100

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

WATER DISPOSAL

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

WELL SAMPLING

Sample Depth in feet (BTOC): 140'

Original	Duplicate	Blank	Other (Trip/Source/)
Sample ID: <u>MW-10</u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u>1158</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>Alpha-5</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
<u>CAS-1</u>		No. of Containers: _____	No. of Containers: _____
<u>MWH-20</u>			

ORIGINAL FIELD RECORD



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: 14.03 psia
 End of Session: 14.02 psia

Start Time: 0730
 Finish Time: 1215

Date: 5/8/12
 Page: 1 of 1

Water Pressure Inside Casing: 14

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)
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	240.52	✓	257.99	✓	257.96	✓	✓	240.54	909	5.48	0.62	35.9	11.40	17.6	176
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	199.19	✓	216.93	✓	216.94	✓	✓	199.23	841	5.90	3.88	38.7	9.48	18.7	182
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	106.81	✓	127.57	✓	127.56	✓	✓	106.85	912	6.32	2.41	45.0	12.23	18.9	161
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	66.87	✓	86.87	✓	86.86	✓	✓	66.89	945	6.22	6.07	44.3	9.67	19.9	189
2	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	66.85	✓	86.85	✓	86.86	✓	✓	66.88	—	6.18	2.85	44.5	9.84	20.3	200
2	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	66.84	✓	86.86	✓	86.86	✓	✓	66.87	—	6.43	3.74	44.7	10.48	19.8	207
2	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	67.48	✓	86.85	✓	86.86	✓	✓	67.46	—	6.57	6.32	44.6	10.71	19.7	213
2	5	✓	✓	✓	✓	✓	✓	✓	✓	✓	65.51	✓	86.85	✓	86.85	✓	✓	65.52	—	6.67	1.85	47.1	12.39	20.2	216
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	32.19	✓	53.93	✓	53.91	✓	✓	32.21	1151	6.99	6.15	39.9	9.94	22.3	215
1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	31.70	✓	53.94	✓	53.92	✓	✓	31.71	—	7.22	8.45	39.5	12.03	20.1	209

MHS

MHS

DHP

Notes:

port 5: CLEAN H₂O, STRONG O₂ port 4: CLEAN H₂O, STRONG O₂ port 3: CLEAN H₂O, STRONG O₂
 port 2: CLEAN H₂O, SLIGHT O₂ port 1: CLEAN H₂O, NO O₂

Total Volume:



Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-4
Sampling Zone No.: 5701
Depth (ft): 513, 392, 322, 240, 150
Beginning of Session: 14.07 psia
End of Session: 14.02 psia

Start Time: 0750
Finish Time: 1235

Date: 4/26/12
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
5	1	✓	✓	✓	✓	✓	✓	✓	✓	152.50	✓	202.49	✓	202.52	✓	✓	152.45	830	5.63	10.03	42.3	9.73	17.2	226
4	1	✓	✓	✓	✓	✓	✓	✓	✓	99.77	✓	155.15	✓	155.17	✓	✓	99.79	0900	5.96	30.3	36.1	8.98	12.9	230
3	1	✓	✓	✓	✓	✓	✓	✓	✓	69.86	✓	124.85	✓	124.81	✓	✓	69.29	0927	6.04	7.92	34.7	9.88	12.2	219
2	1	✓	✓	✓	✓	✓	✓	✓	✓	34.44	✓	89.56	✓	89.53	✓	✓	34.49	1002	6.47	13.0	79.4	9.08	16.6	223
2	2	✓	✓	✓	✓	✓	✓	✓	✓	34.45	✓	89.54	✓	89.51	✓	✓	34.51	1022	7.41	14.5	81.2	10.03	15.9	231
2	3	✓	✓	✓	✓	✓	✓	✓	✓	34.47	✓	89.55	✓	89.57	✓	✓	34.53	1052	7.54	15.0	81.3	9.22	16.5	214
2	4	✓	✓	✓	✓	✓	✓	✓	✓	34.50	✓	89.57	✓	89.57	✓	✓	34.54	1118	7.85	20.3	80.6	10.03	16.6	224
2	5	✓	✓	✓	✓	✓	✓	✓	✓	32.53	✓	89.57	✓	89.55	✓	✓	32.56	1133	7.74	16.4	81.0	8.86	16.6	246
1	1	✓	✓	✓	✓	✓	✓	✓	✓	14.24	✓	53.93	✓	53.89	✓	✓	14.26	1207	8.03	0.86	38.3	9.61	14.8	239
1	2	✓	✓	✓	✓	✓	✓	✓	✓	14.21	✓	53.93	✓	53.90	✓	✓	14.29	1233	-	-	-	-	-	-

(MHTS)

(MHTS)

Notes:

Total Volume:

port 5: CLEAR H₂O, w/ A FAINT yellowish TINGE, STRONG O₂ port 4: CLEAR, yellow TINGED H₂O port 3: CLEAR H₂O w/ FAINT O₂
 yellowish TINGE, STRONG O₂ w/ STRONG O₂
 port 2: CLEAR H₂O, NO O₂ port 1: CLEAR, NO O₂



Groundwater Sampling Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-12
Sampling Zone No.: 5 + 1
Depth (ft): 548, 436, 323, 243, 140
Beginning of Session: 14.04 psia
End of Session: 14.07 psia

Start Time: 731
Finish Time: 1025

Date: 4/30/12
Page: 1 of 1

Water Pressure Inside Casing: _____

Port #	Run #	Surface Function Checks							Position Sampler	Arm out	Sample Collection Checks							Water Quality Parameters								
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In			Deactivate Set Arm Locate Port	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)	Cond (mmhos)	Dissolved Oxygen	Temp. (°C)	ORP
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	219.86	✓	212.11	✓	212.10	✓	✓	219.86	804	5.58	1.17	46.1	9.34	17.2	216	
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	171.08	✓	166.03	✓	165.92	✓	✓	171.08	839	5.77	2.54	44.8	9.55	19.4	151	
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	121.78	✓	117.67	✓	117.67	✓	✓	121.79	910	5.87	1.26	39.6	11.64	21.6	182	
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	86.81	✓	83.52	✓	83.53	✓	✓	86.82	945	5.92	1.49	55.5	12.56	23.0	204	
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	41.79	✓	43.10	✓	43.10	✓	✓	41.80	1020	6.41	18.8	38.3	11.57	22.5	222	

Notes:
 port 5: CLEAR, H₂S ODOR port 4: CLEAR, STRONG ODOR port 3: CLEAR, STRONG ODOR
 port 2: CLEAR, STRONG ODOR port 1: BROWNISH TINT, SLIGHT ODOR

Total Volume: _____



Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-14
Sampling Zone No.: 5101
Depth (ft): 540, 456, 382, 277, 207
Beginning of Session: 14.04 psia
End of Session: 14.07 psia

Start Time: A00
Finish Time: 1235

Date: 4/23/12
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)
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	188.99	✓	184.76	✓	184.24	✓	✓	189.01	934	5.96	1.26	34.4	10.29	17.9	140
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	152.38	✓	148.36	✓	148.36	✓	✓	152.38	1012	5.91	-0.17	77.0	10.52	17.1	150
4	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	152.35	✓	148.38	✓	148.36	✓	✓	152.36	---	5.84	-0.06	77.0	10.78	17.1	162
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	120.06	✓	116.30	✓	116.30	✓	✓	120.05	1121	6.12	2.21	0.110	8.70	17.3	247
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	74.25	✓	70.67	✓	70.66	✓	✓	74.23	1155	6.74	0.19	0.121	9.81	17.1	277
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	44.13	✓	40.39	✓	40.39	✓	✓	44.14	1228	6.95	1.66	0.113	8.88	17.3	264

MS/MSD

MS/MSD

Notes:

port 5: CLEAN H₂O, STRONG O₂ DON port 4: CLEAN H₂O, NO O₂ DON port 3: CLEAN H₂O, NO O₂ DON
 port 2: CLEAN H₂O, NO O₂ DON port 1: CLEAN H₂O, NO O₂ DON

Total Volume: ---



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: 14.00 psia
End of Session: 14.03 psia

Start Time: 800
Finish Time: 1345

Date: 5/15/12
Page: 1 of 1

Water Pressure Inside Casing: AS

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)
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	242.69	✓	242.62	✓	242.52	✓	✓	242.70	825	5.90	12.1	35.1	13.40	17.4	210
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	180.66	✓	184.60	✓	184.57	✓	✓	180.66	912	7.11	0.72	37.3	9.47	18.4	151
4	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	180.60	✓	184.57	✓	184.53	✓	✓	180.63	940	7.02	0.74	38.5	11.71	18.0	129
4	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	180.59	✓	184.54	✓	184.51	✓	✓	180.61	1005	6.81	1.37	37.8	9.58	18.6	142
4	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	180.16	✓	184.52	✓	184.51	✓	✓	180.21	1037	6.98	1.34	37.4	10.07	20.4	178
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	131.03	✓	132.40	✓	132.42	✓	✓	131.10	1112	7.19	3.89	65.3	10.97	20.8	149
3	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	131.02	✓	132.40	✓	132.39	✓	✓	131.04	1142	7.13	4.29	62.8	9.28	21.6	203
3	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	131.02	✓	132.38	✓	132.40	✓	✓	131.07	1210	7.25	3.88	67.1	9.89	20.0	195
3	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	131.01	✓	132.37	✓	132.39	✓	✓	131.03	1237	—	—	—	—	—	—
2	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	87.98	✓	93.49	✓	93.48	✓	✓	88.02	1306	7.54	2.34	53.0	13.00	20.9	204
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	35.99	✓	44.72	✓	44.67	✓	✓	36.01	1338	7.54	3.85	45.1	10.02	21.4	210

MS/MSD
MHTS
*

MS/MSD
MHTS

Notes:

port 5: CLEAN H₂O w/ STRONG O₂ port 4: CLEAN H₂O SLIGHT O₂ port 3: CLEAN H₂O FAINT O₂
ODOR
port 2: CLEAN H₂O w/ FAINT O₂ port 1: CLEAN H₂O w/ SLIGHT O₂
ODOR

Total Volume:



Groundwater Sampling Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-18
Sampling Zone No.: 5701
Depth (ft): 684, 564, 424, 330, 270
Beginning of Session: 13.98 psia
End of Session: 13.94 psia

Start Time: 0820
Finish Time: 1340

Date: 5/10/12
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)
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	166.12	✓	211.56	✓	211.51	✓	✓	166.14	852	5.94	1.45	32.1	8.95	19.3	212
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	119.80	✓	161.13	✓	161.12	✓	✓	119.81	933	6.22	0.88	44.9	11.37	20.3	190
4	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	114.77	✓	161.14	✓	161.15	✓	✓	114.76	→	6.14	1.84	44.9	9.47	20.4	164
4	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	114.72	✓	161.16	✓	161.18	✓	✓	114.72	→	6.30	1.10	45.9	12.70	21.5	179
4	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	114.64	✓	161.19	✓	161.20	✓	✓	114.68	→	6.37	2.17	44.4	12.69	21.2	174
4	5	✓	✓	✓	✓	✓	✓	✓	✓	✓	114.14	✓	161.21	✓	161.22	✓	✓	114.20	→	6.57	2.92	45.2	12.00	20.9	176
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	52.61	✓	103.82	✓	103.80	✓	✓	52.61	1205	6.87	1.00	54.1	11.63	21.0	192
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.16	✓	36.34	✓	36.32	✓	✓	14.18	1234	6.85	0.62	50.9	9.44	21.6	214
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.09	✓	36.16	✓	36.16	✓	✓	14.11	1309	6.99	2.66	48.9	8.86	24.3	233
1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.07	✓	36.14	✓	36.14	✓	✓	14.13	→	7.15	4.07	39.2	10.84	23.5	226

248-6-2012
MATS

dupc-6
MATS

MS/MSD

MS/MSD

Notes:

port 5: CLEAN H₂O, STRONG port 4: CLEAN H₂O, SLIGHT O₂ OR port 3: CLEAN H₂O, NO O₂
OR
port 2: CLEAN H₂O, NO O₂ port 1: CLEAN H₂O, NO O₂

Total Volume: ---



Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-19
Sampling Zone No.: 5701
Depth (ft): 498, 444, 392, 314, 242
Beginning of Session: 14.01 psia
End of Session: 13.99 psia

Start Time: 800
Finish Time: 1230

Date: 5/9/12
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. (°C)
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	172.85	✓	171.18	✓	171.20	✓	✓	172.87	827	5.43	0.42	72.7	12.16	20.1	205
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	149.38	✓	142.82	✓	142.80	✓	✓	149.41	855	5.77	0.06	70.5	10.65	22.3	183
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	126.73	✓	125.34	✓	125.36	✓	✓	126.77	920	5.86	0.12	66.6	9.37	23.0	190
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	93.72	✓	91.15	✓	91.14	✓	✓	93.29	954	6.32	6.53	0.093	10.00	21.8	309
2	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	93.28	✓	90.91	✓	90.64	✓	✓	93.31	+	7.19	18.4	0.090	9.96	21.7	214
2	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	93.25	✓	89.82	✓	89.77	✓	✓	93.31	+	7.24	5.94	0.091	12.23	23.6	325
2	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	93.23	✓	89.13	✓	88.98	✓	✓	93.24	+	7.99	10.59	0.888	6.17	22.8	196
2	5	✓	✓	✓	✓	✓	✓	✓	✓	✓	93.21	✓	88.59	✓	88.49	✓	✓	93.22	+	7.56	4.53	0.090	9.34	22.8	350
2	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	92.24	✓	88.21	✓	88.15	✓	✓	92.26	+	7.55	5.63	0.999	8.91	24.0	242
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	62.01	✓	59.10	✓	59.06	✓	✓	62.05	1220	7.85	1.39	59.0	9.97	22.9	181
3																									

WPE-5-2012
MHTS

Notes:

Total Volume:

port 5: CLEAN H₂O, STRONG O₂ port 4: CLEAN, SLIGHT O₂ port 3: CLEAN H₂O, NO O₂
port 2: CLEAN H₂O, NO O₂ port 1: CLEAN H₂O, NO O₂



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: 14.03 psia
End of Session: 14.06 psia

Start Time: 727
Finish Time: 1100

Date: 5/3/12
Page: 1 of 1

Water Pressure Inside Casing: —

Port #	Run #	Surface Function Checks							Position Sampler	Arm out	Sample Collection Checks							Water Quality Parameters						
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In			Deactivate Set Arm Locate Port	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe in	Pressure in MP	Time	PH	Turb. (NTU)	Cond (mmhos)	Dissolved Oxygen
5	1	✓	✓	✓	✓	✓	✓	✓	✓	323.37	✓	328.89	✓	328.88	✓	✓	323.34	804	6.09	0.40	37.7	10.48	16.7	9
4	1	✓	✓	✓	✓	✓	✓	✓	✓	236.64	✓	241.60	✓	241.53	✓	✓	236.65	843	6.40	1.02	32.6	10.21	17.0	-45
3	1	✓	✓	✓	✓	✓	✓	✓	✓	176.83	✓	180.39	✓	180.40	✓	✓	176.82	923	6.90	0.86	35.3	9.55	16.9	-47
2	1	✓	✓	✓	✓	✓	✓	✓	✓	102.02	✓	107.57	✓	107.56	✓	✓	103.03	953	6.48	0.61	66.2	11.54	16.9	18
2	2	✓	✓	✓	✓	✓	✓	✓	✓	103.03	✓	107.57	✓	107.57	✓	✓	103.04	—	—	—	—	—	—	—
1	1	✓	✓	✓	✓	✓	✓	✓	✓	32.58	✓	36.75	✓	36.71	✓	✓	32.55	1055	6.60	2.30	50.9	9.84	17.5	57

2

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

Total Volume: —



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: 14.08 psia
 End of Session: 14.10 psia

Start Time: 728
 Finish Time: 1055

Date: 5/7/12
 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. (°C)	ORP	
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	129.28	✓	159.60	✓	159.58	✓	✓	129.28	755	5.32	0.47	93.1	9.76	17.0	176	
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	102.24	✓	132.75	✓	132.73	✓	✓	102.22	835	6.08	1.12	77.7	10.8	18.6	157	
4	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	102.17	✓	132.74	✓	132.72	✓	✓	102.17								
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	77.04	✓	102.84	✓	102.87	✓	✓	77.07	938	6.14	0.43	0.096	11.41	22.0	305	
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	38.01	✓	68.65	✓	68.65	✓	✓	38.02	1017	6.25	-0.18	0.101	11.31	23.2	277	
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.11	✓	37.29	✓	37.29	✓	✓	14.19	1050	6.64	5.73	0.118	9.64	24.7	324	

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

Total Volume:

> 4



Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-22
Sampling Zone No.: 5 to 1
Depth (ft): 588, 467, 389, 329, 245
Beginning of Session: 14.08 psia
End of Session: 14.04 psia

Start Time: 0755
Finish Time: 1115

Date: 4/24/12
Page: 1 of 1

Water Pressure Inside Casing: 14

Port #	Run #	Surface Function Checks							Position Sampler	Arm out	Sample Collection Checks							Water Quality Parameters						
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In			Deactivate Set Arm Locate Port	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)	Cond (mmhos)	Dissolved Oxygen
5	1	✓	✓	✓	✓	✓	✓	✓	✓	202.12	✓	200.15	✓	200.12	✓	✓	202.12	840	5.61	0.31	34.5	8.83	17.6	154
4	1	✓	✓	✓	✓	✓	✓	✓	✓	148.68	✓	148.84	✓	148.83	✓	✓	148.69	910	6.05	0.47	41.8	10.71	12.9	153
3	1	✓	✓	✓	✓	✓	✓	✓	✓	115.82	✓	116.41	✓	116.40	✓	✓	115.83	944	5.62	0.18	68.0	10.17	17.7	171
2	1	✓	✓	✓	✓	✓	✓	✓	✓	89.25	✓	90.34	✓	90.32	✓	✓	89.27	1016	5.61	0.66	78.7	7.96	20.3	208
1	1	✓	✓	✓	✓	✓	✓	✓	✓	53.01	✓	53.40	✓	53.38	✓	✓	53.04	1050	5.70	4.63	0.110	8.56	21.9	315
1	2	✓	✓	✓	✓	✓	✓	✓	✓	52.78	✓	53.39	✓	53.39	✓	✓	52.79	1050	5.85	4.81	0.111	10.91	21.0	314

4E-1-2012

-DIVE-1-2012

Notes:

port 5: CLEAN H₂O w/ STRONG O₂ port 4: CLEAN H₂O w/ STRONG O₂ port 3: CLEAN H₂O w/ SLIGHT O₂
 port 2: CLEAN H₂O w/ NO O₂ port 1: CLEAN H₂O w/ NO O₂

Total Volume: 11



Groundwater Sampling Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-23
Sampling Zone No.: 5+1
Depth (ft): 542, 445, 319, 254, 174
Beginning of Session: 14.06 psia
End of Session: 14.04 psia

Start Time: 8:25
Finish Time: 11:50

Date: 5/1/12
Page: 1 of 1

Water Pressure Inside Casing: _____

Port #	Run #	Surface Function Checks							Position Sampler	Arm out	Sample Collection Checks								Water Quality Parameters						
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In			Deactivate Set Arm Locate Port	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)	Cond (mmhos)	Dissolved Oxygen	Temp. (°C)
	5	1	✓	✓	✓	✓	✓	✓	✓	✓	205.17	✓	209.83	✓	209.62	✓	✓	205.18	8:58	6.71	1.15	37.3	9.94	17.6	90
MS/MSD <	4	1	✓	✓	✓	✓	✓	✓	✓	✓	163.12	✓	167.98	✓	167.99	✓	✓	163.13	9:28	7.41	0.52	33.0	8.86	16.9	187
	4	2	✓	✓	✓	✓	✓	✓	✓	✓	163.13	✓	167.99	✓	167.99	✓	✓	163.15	-	-	-	-	-	-	-
	3	1	✓	✓	✓	✓	✓	✓	✓	✓	108.49	✓	114.70	✓	114.78	✓	✓	108.49	10:17	7.15	-0.10	39.6	11.31	16.9	228
	2	1	✓	✓	✓	✓	✓	✓	✓	✓	80.28	✓	86.66	✓	86.64	✓	✓	80.27	10:46	6.93	0.39	0.091	8.67	17.4	346
DUPE <	1	1	✓	✓	✓	✓	✓	✓	✓	✓	45.69	✓	52.75	✓	52.74	✓	✓	45.70	11:22	6.97	5.20	89.2	7.8	16.8	225
	1	2	✓	✓	✓	✓	✓	✓	✓	✓	45.69	✓	52.75	✓	52.74	✓	✓	45.68	11:47	7.07	8.28	89.04	8.92	17.2	212

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: _____



Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-24
Sampling Zone No.: S to 1
Depth (ft): 678, 554, 435, 373, 279
Beginning of Session: 14.02 psia
End of Session: 14.00 psia

Start Time: 0800
Finish Time: 1315

Date: 4/25/12
Page: 1 of 1

Water Pressure Inside Casing:

Port #	Run #	Surface Function Checks							Position Sampler	Arm out	Sample Collection Checks							Water Quality Parameters						
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In			Deactivate Set Arm Locate Port	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)	Cond (mmhos)	Dissolved Oxygen
5	1	✓	✓	✓	✓	✓	✓	✓	✓	234.23	✓	226.78	✓	226.79	✓	✓	234.20	840	5.57	2.38	39.5	11.04	19.8	193
4	1	✓	✓	✓	✓	✓	✓	✓	✓	180.48	✓	174.38	✓	174.36	✓	✓	180.39	920	6.08	0.66	25.3	9.33	20.9	2
3	1	✓	✓	✓	✓	✓	✓	✓	✓	128.85	✓	124.10	✓	124.07	✓	✓	128.88	956	6.15	1.00	39.9	8.59	21.3	135
3	2	✓	✓	✓	✓	✓	✓	✓	✓	128.77	✓	123.94	✓	123.91	✓	✓	128.82	944	6.64	0.43	39.2	8.87	21.8	118
2	1	✓	✓	✓	✓	✓	✓	✓	✓	101.89	✓	96.87	✓	96.81	✓	✓	101.89	1000	6.74	0.22	49.9	10.51	22.1	174
1	1	✓	✓	✓	✓	✓	✓	✓	✓	61.40	✓	57.91	✓	57.90	✓	✓	61.42	1232	6.72	1.20	59.8	11.70	24.3	201
1	2	✓	✓	✓	✓	✓	✓	✓	✓	61.39	✓	57.90	✓	57.89	✓	✓	61.38	1252	7.26	0.44	60.1	9.41	24.1	204
1	3	✓	✓	✓	✓	✓	✓	✓	✓	61.17	✓	57.91	✓	57.91	✓	✓	61.17	1313	7.41	0.22	59.9	9.17	24.0	221

up6-2-2012

down6-2-2012

*

Notes:

Total Volume:

port 5: CLEAN, FAULT ODO port 4: CLEAN H₂O, STRONG ODO port 3: CLEAN H₂O, w/ STRONG ODO

port 2: CLEAN H₂O w/ STRONG ODO port 1: CLEAN H₂O, w/ STRONG ODO



Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-25
Sampling Zone No.: 5101
Depth (ft): 713, 633, 503, 423, 358
Beginning of Session: 14.15 psia
End of Session: 14.17 psia

Start Time: 6900
Finish Time: 1230

Date: 5/14/12
Page: 1 of 1

Water Pressure Inside Casing:

Port #	Run #	Surface Function Checks							Position Sampler	Arm out	Sample Collection Checks								Water Quality Parameters					
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In			Deactivate Set Arm Locate Port	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)	Cond (mmhos)	Dissolved Oxygen
5	1	✓	✓	✓	✓	✓	✓	✓	✓	214.32	✓	211.11	✓	211.10	✓	✓	214.29	942	5.80	0.90	45.5	11.28	20.6	97
4	1	✓	✓	✓	✓	✓	✓	✓	✓	179.71	✓	175.40	✓	175.41	✓	✓	179.72	1015	5.85	2.40	74.2	10.31	20.5	151
3	1	✓	✓	✓	✓	✓	✓	✓	✓	123.35	✓	122.44	✓	122.45	✓	✓	123.31	1048	5.92	0.11	67.8	8.44	22.3	179
2	1	✓	✓	✓	✓	✓	✓	✓	✓	88.55	✓	90.62	✓	90.62	✓	✓	88.50	1120	6.22	0.87	68.0	8.87	22.0	204
1	1	✓	✓	✓	✓	✓	✓	✓	✓	60.62	✓	63.54	✓	63.53	✓	✓	60.64	1158	6.31	10.09	83.4	9.91	22.9	149

Notes:

Total Volume:

port 5: Clean, No w/ port 4: Clean No. STRONG port 3: Clean No. SLIGHT ODOR
STRONG ROTTEN EGGS ODOR
port 2: port 1:



Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-26

Sampling Zone No.: 2 to 1

Start Time: 0800

Date: 5/16/12

Depth (ft): 215, 135

Finish Time: 0900

Page: 1 of 1

Beginning of Session: 14.02 psia

End of Session: 14.01 psia

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)
2	1	✓	✓	✓	✓	✓	✓	✓	✓	75.16	✓	77.21	✓	77.18	✓	✓	75.21	0822	5.74	78	56.0	10.35	19.8	136	
1	1	✓	✓	✓	✓	✓	✓	✓	✓	40.29	✓	39.86	✓	38.79	✓	✓	40.28	0856	5.77	0.03	0.1	11.50	20.5	185	

Notes:

Total Volume:

port 2: CLEAN H2O. SLIGHT O2 ON port 1: CLEAN H2O, FAINT O2 ON

ATTACHMENT 5: WATER LEVEL MEASUREMENTS

This attachment contains water level measurements for the JPL relatively shallow standpipe monitoring wells (MW-1, MW-5 through MW-10, MW-13, MW-15, and MW-16) and the Westbay™ multiport wells (MW-3, MW-4, MW-11, MW-12, MW-14, and MW-17 through MW-26) obtained during the 2nd Quarter 2012. Water level measurements were recorded before the sampling event on April 20, 2012 for the relatively shallow standpipe monitoring wells and for the Westbay™ multiport wells. Water level measurements were recorded after the sampling event on May 17, 2012 for the relatively shallow standpipe monitoring wells and the Westbay™ multiport wells. Water levels for the shallow wells were measured using a Solinst™ water level meter. In the deep multiport wells, the hydraulic head at each sampling port was measured with a Westbay™ MOSDAX sampling probe. Water level measurements were conducted by Insight Environmental, Inc.

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-3
 Project No: 4-73806 Probe Type: Westbay
 Date: 4/20/12 Serial No.: 2502
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. + MSL): 1,100.34
 Weather: Sunny and hot

Ambient Readings	Start	Finish
Time	1131	1144
Pressure (psia)	14.07	14.11
Temperature (°C)	25.04	18.64

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	653	236.53	256.57	236.68	23.68	1135	93.55	1006.79
4	558	195.33	215.52	195.32	23.60	1137	93.25	1007.09
3	346	103.18	126.30	103.17	22.64	1138	87.09	1013.25
2	252	62.33	85.56	62.32	21.73	1139	87.07	1013.27
1	172	27.54	52.56	27.57	20.57	1141	83.20	1017.14

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-4
 Project No: 4-73806 Probe Type: Westbay
 Date: 4/20/12 Serial No.: 2502
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. +MSL): 1,082.84
 Weather: Sunny and hot

Ambient Readings	Start	Finish
Time	1520	1531
Pressure (psia)	14.03	14.06
Temperature (°C)	22.30	20.47

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	148.64	206.97	148.68	23.60	1523	67.89	1014.95
4	392	96.06	154.64	96.10	22.70	1524	67.61	1015.23
3	322	65.62	124.30	65.56	22.27	1526	67.61	1015.23
2	240	29.88	89.03	29.89	21.74	1528	66.98	1015.87
1	150	14.18	53.38	14.19	21.14	1529	59.22	1023.62

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-11
 Project No: 4-73806 Probe Type: Westbay
 Date: 4/20/12 Serial No.: 2502
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,139.30
 Weather: Sunny and hot

Ambient Readings	Start	Finish
Time	957	1010
Pressure (psia)	14.05	14.09
Temperature (°C)	22.77	18.12

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	639	235.31	232.89	235.35	21.11	959		
								134.14
4	524	185.88	188.79	185.89	21.58	1001		
								120.87
3	429	145.00	147.16	145.01	21.10	1002		
								121.92
2	259	71.42	75.33	71.40	19.86	1004		
								117.63
1	149	28.43	39.28	28.45	18.81	1006		
								90.79

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-12
 Project No: 4-73806 Probe Type: Westbay
 Date: 4/20/12 Serial No.: 2502
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,102.14
 Weather: Sunny and hot

Ambient Readings	Start	Finish
Time	1500	1513
Pressure (psia)	14.00	14.08
Temperature (°C)	26.71	17.87

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	215.86	211.13	215.88	23.64	1502			
								93.22	1008.92
4	436	167.22	165.14	167.24	22.43	1503			
								87.32	1014.82
3	323	118.11	116.75	118.10	21.01	1505			
								85.96	1016.18
2	243	83.26	82.56	83.28	19.98	1507			
								84.83	1017.31
1	140	38.37	41.99	38.37	18.88	1508			
								75.43	1026.71

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-14
 Project No: 4-73806 Probe Type: Westbay
 Date: 4/20/12 Serial No.: 2502
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,173.47
 Weather: Sunny and hot

Ambient Readings	Start	Finish
Time	845	855
Pressure (psia)	14.03	14.07
Temperature (°C)	21.44	19.53

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	185.16	184.51	185.16	21.49	848	146.70	1026.77
4	456	148.57	148.14	148.62	21.48	850	146.61	1026.86
3	382	116.37	116.07	116.42	21.08	851	146.59	1026.88
2	277	70.81	70.42	70.70	20.50	852	146.91	1026.56
1	207	40.21	40.14	40.22	19.92	853	146.76	1026.71

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-17
 Project No: 4-73806 Probe Type: Westbay
 Date: 4/20/12 Serial No.: 2502
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,191.21
 Weather: Sunny and hot

Ambient Readings	Start	Finish
Time	1225	1238
Pressure (psia)	14.07	14.05
Temperature (°C)	23.29	16.50

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	240.99	246.16	240.99	21.88	1227	190.57	1000.64
4	582	178.68	183.95	178.67	21.14	1229	190.09	1001.12
3	468	129.31	133.74	129.26	19.93	1230	191.92	999.29
2	370	86.74	94.13	86.72	18.97	1232	185.30	1005.91
1	250	34.55	43.58	34.55	17.71	1234	181.92	1009.29

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-18
 Project No: 4-73806 Probe Type: Westbay
 Date: 4/20/12 Serial No.: 2502
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,225.41

Weather: Sunny and hot

Ambient Readings	Start	Finish
Time	1258	1310
Pressure (psia)	13.98	14.02
Temperature (°C)	26.34	17.04

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	162.37	210.21	162.37	24.42	1300		
								231.30
4	564	110.22	160.14	110.23	22.12	1302		
								226.81
3	424	49.31	102.45	49.32	19.99	1304		
								219.90
2	330	14.21	60.55	14.20	18.90	1307		
								222.56
1	270	14.15	34.17	14.16	18.13	1308		
								223.42

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Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-19
 Project No: 4-73806 Probe Type: Westbay
 Date: 4/20/12 Serial No.: 2502
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. +MSL): 1,142.94
 Weather: Sunny and hot

Ambient Readings	Start	Finish
Time	1155	1210
Pressure (psia)	14.05	14.09
Temperature (°C)	23.09	17.60

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	171.27	169.62	171.29	20.78	1202	139.10	1003.84
4	444	147.86	146.24	147.87	20.17	1203	139.04	1003.90
3	392	125.32	124.03	125.33	19.90	1205	138.28	1004.66
2	314	91.51	89.84	91.48	19.73	1206	139.15	1003.79
1	242	60.21	58.81	60.21	19.23	1207	138.74	1004.20

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Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-20
 Project No: 4-73806 Probe Type: Westbay
 Date: 4/20/12 Serial No.: 2502
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,165.05
 Weather: Sunny and hot

Ambient Readings	Start	Finish
Time	1329	1348
Pressure (psia)	14.04	14.05
Temperature (°C)	24.73	16.85

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	900	321.54	327.83	321.56	23.08	1335	176.09	988.96
4	700	234.96	238.91	234.93	22.69	1337	181.22	983.83
3	562	175.18	172.98	175.17	20.79	1340	195.33	969.72
2	392	101.48	105.20	101.49	19.35	1343	181.69	983.36
1	230	31.09	34.75	31.71	16.93	1345	182.22	982.83

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Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-21
 Project No: 4-73806 Probe Type: Westbay
 Date: 4/20/12 Serial No.: 2502
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,059.10
 Weather: Sunny and hot

Ambient Readings	Start	Finish
Time	910	920
Pressure (psia)	14.11	14.11
Temperature (°C)	21.21	19.14

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	125.55	158.73	125.57	20.73	912	38.36	1020.74
4	310	9857.00	131.87	98.56	20.64	913	38.33	1020.77
3	240	68.53	102.01	68.54	20.33	915	37.21	1021.89
2	161	34.10	67.82	34.12	19.75	917	37.09	1022.01
1	90	14.16	36.46	14.18	19.30	918	38.44	1020.66

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Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-22
 Project No: 4-73806 Probe Type: Westbay
 Date: 4/20/12 Serial No.: 2502
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,176.98
 Weather: Sunny and hot

Ambient Readings	Start	Finish
Time	820	833
Pressure (psia)	14.06	14.08
Temperature (°C)	20.20	20.41

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	200.43	199.78	200.44	20.86	826	159.54	1017.44
4	467	148.07	148.47	148.08	21.49	828	156.92	1020.06
3	389	114.21	116.03	114.26	21.42	829	153.76	1023.22
2	329	88.24	89.97	88.26	21.27	830	153.88	1023.10
1	245	51.37	52.81	51.35	20.92	832	155.60	1021.38

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Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-23
 Project No: 4-73806 Probe Type: Westbay
 Date: 4/20/12 Serial No.: 2502
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,108.84
 Weather: Sunny and hot

Ambient Readings	Start	Finish
Time	800	810
Pressure (psia)	14.06	14.10
Temperature (°C)	21.93	20.01

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	542	203.59	208.84	203.57	21.51	803			
								92.64	1016.20
4	445	161.51	167.10	161.50	21.71	804			
								91.94	1016.90
3	319	106.98	113.87	106.99	21.43	806			
								88.74	1020.10
2	254	78.77	85.72	78.78	21.10	808			
								88.68	1020.16
1	174	44.01	51.60	44.03	20.22	809			
								87.40	1021.44

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-24
 Project No: 4-73806 Probe Type: Westbay
 Date: 4/20/12 Serial No.: 2502
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,200.94
 Weather: Sunny and hot

Ambient Readings	Start	Finish
Time	935	945
Pressure (psia)	14.01	14.06
Temperature (°C)	21.35	21.64

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	678	232.58	226.20	232.57	22.18	938	188.48	1012.46
4	554	179.00	173.86	178.94	22.30	939	185.23	1015.71
3	435	127.34	123.62	127.38	22.01	940	182.13	1018.81
2	373	100.59	96.94	100.51	21.86	942	181.68	1019.26
1	279	59.76	57.35	59.75	21.60	943	179.01	1021.93

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Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-25
 Project No: 4-73806 Probe Type: Westbay
 Date: 4/20/12 Serial No.: 2502
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. + MSL): 934.52
 Weather: Sunny and hot

Ambient Readings	Start	Finish
Time	1403	1414
Pressure (psia)	14.12	14.20
Temperature (°C)	24.93	20.05

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	713	210.52	211.61	210.53	23.85	1406	257.39	677.13
4	633	176.08	175.81	176.10	23.21	1408	259.98	674.54
3	503	119.84	122.80	119.85	22.32	1410	252.28	682.24
2	423	85.12	90.95	85.10	20.65	1411	245.75	688.77
1	358	56.86	63.82	56.85	20.36	1413	243.34	691.18

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Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-3
 Project No: 4-73806 Probe Type: Westbay
 Date: 5/17/12 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. + MSL): 1,100.34
 Weather: sunny and hot

Ambient Readings	Start	Finish
Time	1000	1010
Pressure (psia)	14.08	14.06
Temperature (°C)	21.87	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	653	237.21	256.32	237.26	21.99	1003	94.15	1006.19
4	558	196.02	215.29	196.01	22.19	1005	93.81	1006.53
3	346	103.86	126.84	103.86	22.31	1007	85.86	1014.48
2	252	63.00	86.22	63.01	21.13	1008	85.57	1014.77
1	172	28.23	53.26	28.23	19.95	1009	81.61	1018.73

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Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-4
 Project No: 4-73806 Probe Type: Westbay
 Date: 5/17/12 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. +MSL): 1,082.84
 Weather: sunny and hot

Ambient Readings	Start	Finish
Time	1301	1311
Pressure (psia)	14.05	14.06
Temperature (°C)	21.30	19.77

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	513	148.94	207.49	149.05	22.15	1304	66.73	1016.11
4	392	96.30	155.18	96.32	22.20	1307	66.41	1016.43
3	322	65.92	124.82	65.96	21.90	1308	66.45	1016.39
2	240	30.20	89.64	30.23	21.46	1309	65.61	1017.23
1	150	14.17	53.64	14.14	20.95	1310	58.67	1024.17

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-11
 Project No: 4-73806 Probe Type: Westbay
 Date: 5/17/12 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,139.30
 Weather: sunny and hot

Ambient Readings	Start	Finish
Time	915	925
Pressure (psia)	14.02	14.06
Temperature (°C)	23.02	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	639	239.18	232.43	239.20	21.55	918		
							135.13	1004.17
4	524	189.73	189.37	189.71	21.77	919		
							119.47	1019.83
3	429	148.83	147.34	148.85	21.38	920		
							121.43	1017.87
2	259	75.27	76.09	75.24	20.23	922		
							115.80	1023.50
1	149	27.91	36.22	27.93	19.02	924		
							97.78	1041.52

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Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-12
 Project No: 4-73806 Probe Type: Westbay
 Date: 5/17/12 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,102.14
 Weather: sunny and hot

Ambient Readings	Start	Finish
Time	1244	1254
Pressure (psia)	14.01	14.07
Temperature (°C)	23.01	18.03

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	548	215.64	211.13	215.64	21.80	1247	93.24	1008.90
4	436	167.10	165.43	166.98	21.87	1248	86.67	1015.47
3	323	118.01	117.37	118.00	21.07	1250	84.55	1017.59
2	243	82.97	83.27	82.99	19.72	1252	83.22	1018.92
1	140	38.04	42.74	38.08	19.03	1253	73.72	1028.42

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Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-14
 Project No: 4-73806 Probe Type: Westbay
 Date: 5/17/12 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 hot

Ambient Readings	Start	Finish
Time	730	740
Pressure (psia)	14.00	14.01
Temperature (°C)	20.08	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	540	184.95	184.60	184.98	20.44	733	146.43	1027.04
4	456	148.36	148.35	148.38	20.87	734	146.05	1027.42
3	382	116.18	116.32	116.18	20.60	735	145.95	1027.52
2	277	70.50	70.87	70.49	19.74	737	145.80	1027.67
1	207	39.95	40.92	39.97	19.55	739	144.90	1028.57

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Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-17
 Project No: 4-73806 Probe Type: Westbay
 Date: 5/17/12 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,191.21
 Weather: sunny and hot

Ambient Readings	Start	Finish
Time	1039	1052
Pressure (psia)	14.02	14.00
Temperature (°C)	19.42	16.44

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	240.69	246.29	240.63	19.97	1041	190.15	1001.06
4	582	178.37	184.39	178.37	20.23	1043	188.96	1002.25
3	468	128.96	134.72	128.98	19.07	1045	189.55	1001.66
2	370	86.39	95.02	86.43	18.44	1047	183.13	1008.08
1	250	34.25	45.02	34.25	17.52	1049	178.48	1012.73

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Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-18
 Project No: 4-73806 Probe Type: Westbay
 Date: 5/17/12 Serial No.: _____
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,225.41

Weather: sunny and hot

Ambient Readings	Start	Finish
Time	1100	1115
Pressure (psia)	13.95	14.00
Temperature (°C)	21.75	17.47

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	162.04	210.45	162.02	21.65	1103		
								230.67
4	564	109.96	160.36	109.94	21.60	1105		
								226.23
3	424	49.01	103.41	48.98	20.60	1107		
								217.62
2	330	14.20	62.18	14.19	19.39	1109		
								218.73
1	270	14.14	36.09	14.15	18.54	1111		
								218.92

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-19
 Project No: 4-73806 Probe Type: Westbay
 Date: 5/17/12 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. +MSL): 1,142.94
 Weather: sunny and hot

Ambient Readings	Start	Finish
Time	1023	1033
Pressure (psia)	14.04	14.04
Temperature (°C)	20.47	17.66

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	498	171.33	169.91	171.39	19.92	1025	138.41	1004.53
4	444	147.97	146.53	147.98	19.72	1027	138.35	1004.59
3	392	125.35	124.66	125.42	19.57	1028	136.80	1006.14
2	314	91.55	90.56	91.56	19.44	1029	137.47	1005.47
1	242	60.37	59.63	60.31	18.99	1031	136.82	1006.12

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Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-20
 Project No: 4-73806 Probe Type: Westbay
 Date: 5/17/12 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1.165.05
 Weather: sunny and hot

Ambient Readings	Start	Finish
Time	1123	1135
Pressure (psia)	14.02	14.01
Temperature (°C)	20.72	17.94

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	321.62	328.98	321.57	21.37	1127		
							173.39	991.66
4	700	234.93	241.53	234.94	20.78	1129		
							175.13	989.92
3	562	175.15	175.98	175.14	20.31	1131		
							188.36	976.69
2	392	101.35	106.87	101.41	19.99	1133		
							177.80	987.25
1	230	31.08	36.40	31.10	18.05	1134		
							178.37	986.68

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Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-21
 Project No: 4-73806 Probe Type: Westbay
 Date: 5/17/12 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 hot

Ambient Readings	Start	Finish
Time	755	805
Pressure (psia)	14.07	14.06
Temperature (°C)	19.86	19.09

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	372	125.37	158.97	125.36	19.98	757	37.72	1021.38
4	310	98.35	132.14	98.33	20.16	758	37.61	1021.49
3	240	68.34	102.28	68.37	20.01	801	36.50	1022.60
2	161	33.89	68.08	33.92	19.63	803	36.40	1022.70
1	90	14.13	36.78	14.14	19.27	804	37.61	1021.49

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-22
 Project No: 4-73806 Probe Type: Westbay
 Date: 5/17/12 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,176.98
 Weather: sunny and hot

Ambient Readings	Start	Finish
Time	713	723
Pressure (psia)	13.97	14.01
Temperature (°C)	19.51	20.23

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	588	200.29	199.31	200.26	20.37	715		
								160.42
4	467	148.02	148.23	147.98	21.18	717		
								157.26
3	389	114.14	116.53	114.13	21.24	718		
								152.39
2	329	88.11	90.50	88.10	21.14	719		
								152.45
1	245	52.12	67.23	52.08	20.72	721		
								122.13

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-23
 Project No: 4-73806 Probe Type: Westbay
 Date: 5/17/12 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,108.84
 Weather: sunny and hot

Ambient Readings	Start	Finish
Time	654	706
Pressure (psia)	14.03	14.04
Temperature (°C)	21.36	20.17

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	542	203.43	208.23	203.45	21.29	657		
								93.98
4	445	161.34	166.66	161.41	21.52	659		
								92.88
3	319	106.86	114.33	106.88	21.34	702		
								87.61
2	254	78.71	86.24	78.70	20.98	703		
								87.41
1	174	43.95	52.71	43.95	20.53	704		
								84.77

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-24
 Project No: 4-73806 Probe Type: Westbay
 Date: 5/17/12 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,200.94
 Weather: sunny and hot

Ambient Readings	Start	Finish
Time	848	858
Pressure (psia)	13.99	14.02
Temperature (°C)	21.54	21.58

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	678	232.32	225.73	232.30	22.15	850	189.52	1011.42
4	554	178.62	173.53	178.63	22.27	852	185.94	1015.00
3	435	127.08	124.12	127.10	21.92	853	180.93	1020.01
2	373	100.22	97.62	100.24	21.58	854	180.07	1020.87
1	279	59.48	58.58	59.50	21.51	856	176.13	1024.81

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-25
 Project No: 4-73806 Probe Type: Westbay
 Date: 5/17/12 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. + MSL): 934.52

Weather: sunny and hot

Ambient Readings	Start	Finish
Time	1153	1203
Pressure (psia)	14.14	14.09
Temperature (°C)	21.84	20.07

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	713	210.26	211.07	210.24	22.02	1155	258.68	675.84
4	633	175.79	175.34	175.81	22.05	1157	261.11	673.41
3	503	119.56	122.40	119.56	21.63	1158	253.24	681.28
2	423	84.84	90.58	84.84	20.92	1159	246.65	687.87
1	358	56.56	63.51	56.57	20.48	1201	244.10	690.42

