

ATTACHMENT 4: FIELD LOGS

This attachment contains the groundwater sample collection field logs for the relatively shallow standpipe monitoring wells (MW-5 through MW-8, MW-10, MW-13, MW-15, and MW-16), as well as the field data sheets for the Westbay™ multiport wells (MW-3, MW-4, MW-11, MW-12, MW-14, and MW-17 through MW-26). Groundwater sample collection was conducted by Geofon Incorporated.

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # 5



Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 4-73803
 Navy Contract No.: Battelle
 Sampled By: Marco Mendoza, Chase Brogdon
 Date: 9/1/06
 Weather: clear and hot

22632 Golden Springs Dr., Suite 270
 Diamond Bar, CA 91765
 Telephone: (909) 396-7662
 Fax: (909) 396-1455

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{140}{\text{TD (feet)}} - \frac{50.82}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{174.65}{\text{Calculated Purge Volume}} \text{ Gallons}$$

PURGE METHOD

PUMP INTAKE SETTING

Bailer – Type: _____ Pump – Type: 2" Grundfos Depth in feet (BTOC): _____

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
919	50.82	0	7.10	57.6	15.6	11.99	18.6	33	Clear, no odor
930	50.82	35	7.03	56.8	6.44	12.65	19.1	35	Clear, no odor
942	50.82	70	7.05	55.5	2.63	13.36	19.2	47	Clear, no odor
953	50.82	105	7.06	55.7	1.47	13.31	20.2	54	Clear, no odor
1005	50.82	140	7.02	54.8	1.56	12.79	20.3	4	Clear, no odor
1016	50.82	175	7.02	57.6	1.11	12.67	19.5	24	Clear, no odor

Total Purge Volume: 175 (Gallons)

Total Discharge: 3.0 (Casing Volumes)

Approx. Purge Rate: 3.0 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 915 Purge time start: 919

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

WATER DISPOSAL

Purge water storage: polytank

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip / Source /)</u>
Sample ID: <u>MW-5</u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u>1020</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>6</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # 6



Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 4-73803
 Navy Contract No.: Battelle
 Sampled By: Marco Mendoza, Chase Brogdon
 Date: 9/5/06
 Weather: clear and hot

22632 Golden Springs Dr., Suite 270
 Diamond Bar, CA 91765
 Telephone: (909) 396-7662
 Fax: (909) 396-1455

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{245}{\text{TD (feet)}} - \frac{157.34}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{171.67}{\text{Calculated Purge Volume}} \text{ Gallons}$$

PURGE METHOD

PUMP INTAKE SETTING

Bailer – Type: _____ Pump – Type: 2" Grundfos Depth in feet (BTOC): _____

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
756	157.34	0	5.64	0.1	55.9	14.79	22.4	87	Slightly brownish color, no odor
830	157.34	34	5.90	0.1	5.28	14.59	22.7	197	Clear, no odor
905	157.34	69	6.22	0.1	1.25	12.45	23.2	198	Clear, no odor
939	157.34	103	6.36	0.1	0.50	14.23	23.9	222	Clear, no odor
1014	157.34	138	6.53	0.1	0.58	14.66	24.4	140	Clear, no odor
1048	157.34	172	6.63	0.1	0.52	12.45	24.6	235	Clear, no odor

Total Purge Volume: 172 (Gallons)

Total Discharge: 3.0 (Casing Volumes)

Approx. Purge Rate: 1.0 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 747 Purge time start: 756

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

WATER DISPOSAL

Purge water storage: polytank

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	Duplicate	Blank	Other (Trip / Source / _____)
Sample ID: <u>MW-6</u>	Sample ID: <u>DUPE-6-3Q06</u>	Type: _____	Type: _____
Sample Time: <u>1055</u>	Sample Time: <u>-----</u>	Sample ID: _____	Sample ID: _____
No. of Containers: <u>6</u>	No. of Containers: <u>6</u>	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # 7



Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 4-73803
 Navy Contract No.: Battelle
 Sampled By: Marco Mendoza, Chase Brogdon
 Date: 8/31/06
 Weather: clear and warm

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 Telephone: (909) 396-7662
 Fax: (909) 396-1455

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{275}{\text{TD (feet)}} - \frac{188.52}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{169.36}{\text{Calculated Purge Volume}} \text{ Gallons}$$

PURGE METHOD

PUMP INTAKE SETTING

Bailer – Type: _____ Pump – Type: 2" Grundfos Depth in feet (BTOC): _____

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
720	188.52	0	5.39	68.4	170	8.28	20.5	67	Reddish brown color, no odor
737	188.52	34	5.86	64.3	46.7	8.35	21.5	14	Slight brownish color, no odor
754	188.52	68	6.13	65.1	18.1	9.62	22.3	24	Clear, no odor
811	188.52	102	6.34	64.7	8.21	9.84	23.4	18	Clear, no odor
828	188.52	136	6.45	64.9	3.99	9.82	23.3	18	Clear, no odor
845	188.52	170	6.63	65.1	2.96	8.59	23.8	3	Clear, no odor

Total Purge Volume: 170 (Gallons)

Total Discharge: 3.01 (Casing Volumes)

Approx. Purge Rate: 2.0 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 713 Purge time start: 720

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

WATER DISPOSAL

Purge water storage: polytank

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	Duplicate	Blank	Other (Trip / Source /)
Sample ID: <u>MW-7</u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u>847</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>6</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # 8



Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 4-73803
 Navy Contract No.: Battelle
 Sampled By: Marco Mendoza, Chase Brogdon
 Date: 8/31/06
 Weather: clear and warm

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PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{205}{\text{TD (feet)}} - \frac{115.82}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{174.65}{\text{Calculated Purge Volume}} \text{ Gallons}$$

PURGE METHOD

PUMP INTAKE SETTING

Bailer – Type: _____ Pump – Type: 2" Grundfos Depth in feet (BTOC): _____

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
924	115.82	0	6.86	53.5	22.8	5.98	20.7	167	Clear, no odor
938	115.82	35	6.87	53.8	2.93	11.49	20.4	66	Clear, no odor
952	115.82	70	6.94	53.1	2.17	5.57	20.1	160	Clear, no odor
1006	115.82	105	6.97	54.0	0.50	12.39	20.2	47	Clear, no odor
1020	115.82	140	7.00	54.2	0.34	12.00	20.4	35	Clear, no odor
1034	115.82	175	7.08	54.3	0.30	12.67	21.3	47	Clear, no odor

Total Purge Volume: 175 (Gallons)

Total Discharge: 3.01 (Casing Volumes)

Approx. Purge Rate: 2.5 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 918 Purge time start: 924

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

WATER DISPOSAL

Purge water storage: polytank

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip / Source /)</u>
Sample ID: <u>MW-8</u>	Sample ID: <u>DUPE-5-3Q06</u>	Type: _____	Type: _____
Sample Time: <u>1047</u>	Sample Time: <u>-----</u>	Sample ID: _____	Sample ID: _____
No. of Containers: <u>6</u>	No. of Containers: <u>6</u>	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # 10



Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 4-73803
 Navy Contract No.: Battelle
 Sampled By: Marco Mendoza, Chase Brogdon
 Date: 9/1/06
 Weather: clear and warm

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PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{155}{\text{TD (feet)}} - \frac{65.19}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{175.88}{\text{Calculated Purge Volume}} \text{ Gallons}$$

PURGE METHOD

PUMP INTAKE SETTING

Bailer – Type: _____ Pump – Type: 2" Grundfos Depth in feet (BTOC): _____

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
728	65.19	0	5.25	0.1	6.58	13.49	18.9	186	Clear, no odor
741	65.19	35	5.93	0.1	1.55	11.61	19.1	159	Clear, no odor
754	65.19	70	6.23	0.1	2.49	13.65	19.1	35	Clear, no odor
807	65.19	106	6.68	0.1	1.71	14.07	19.5	157	Clear, no odor
820	65.19	141	6.77	0.1	0.66	13.50	19.7	151	Clear, no odor
833	65.19	176	6.77	0.1	0.50	8.96	20.5	135	Clear, no odor

Total Purge Volume: 176 (Gallons)

Total Discharge: 3.0 (Casing Volumes)

Approx. Purge Rate: 2.75 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 722 Purge time start: 728

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

WATER DISPOSAL

Purge water storage: polytank

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	Duplicate	Blank	Other (Trip / Source /)
Sample ID: <u>MW-10</u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u>842</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>12 (MS/MSD)</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # 13



Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 4-73803
 Navy Contract No.: Battelle
 Sampled By: Marco Mendoza, Chase Brogdon
 Date: 8/30/06
 Weather: clear and warm

22632 Golden Springs Dr., Suite 270
 Diamond Bar, CA 91765
 Telephone: (909) 396-7662
 Fax: (909) 396-1455

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{235}{\text{TD (feet)}} - \frac{158.27}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{150.27}{\text{Calculated Purge Volume}} \text{ Gallons}$$

PURGE METHOD

PUMP INTAKE SETTING

Bailer – Type: _____ Pump – Type: 2" Grundfos Depth in feet (BTOC): _____

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
740	158.27	0	5.37	69.5	22.8	10.26	20.6	81	Slightly brownish color, no odor
755	158.27	30	5.87	68.0	6.98	10.17	21.3	45	Clear, no odor
811	158.27	61	6.16	68.1	2.26	10.20	21.5	26	Clear, no odor
826	158.27	91	6.32	68.4	0.95	9.90	21.9	28	Clear, no odor
842	158.27	122	6.50	68.6	0.78	10.26	22.0	24	Clear, no odor
857	158.27	152	6.66	68.8	0.44	9.54	22.2	14	Clear, no odor

Total Purge Volume: 152 (Gallons)

Total Discharge: 3.03 (Casing Volumes)

Approx. Purge Rate: 2.0 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 735 Purge time start: 740

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

WATER DISPOSAL

Purge water storage: polytank

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip / Source /)</u>
Sample ID: <u>MW-13</u>	Sample ID: <u>DUPE-3-3Q06</u>	Type: _____	Type: _____
Sample Time: <u>903</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>6</u>	No. of Containers: <u>6</u>	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # 15



Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 4-73803
 Navy Contract No.: Battelle
 Sampled By: Marco Mendoza, Chase Brogdon
 Date: 9/5/06
 Weather: clear and hot

22632 Golden Springs Dr., Suite 270
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 Telephone: (909) 396-7662
 Fax: (909) 396-1455

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{74}{\text{TD (feet)}} - \frac{34.55}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{77.26}{\text{Calculated Purge Volume}} \text{ Gallons}$$

PURGE METHOD

PUMP INTAKE SETTING

Bailer – Type: _____ Pump – Type: 2" Grundfos Depth in feet (BTOC): _____

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
1141	34.55	0	6.97	65.9	1.32	15.93	23.4	197	Clear, no odor
1149	34.55	15	7.11	64.4	-0.32	15.45	22.5	88	Clear, no odor
1157	34.55	31	7.13	61.9	0.05	16.17	22.2	92	Clear, no odor
1205	34.55	46	7.15	62.4	0	15.80	22.0	80	Clear, no odor
1213	34.55	62	7.22	62.6	0	15.78	22.3	81	Clear, no odor
1221	34.55	78	7.22	65.0	-0.26	14.53	23.0	75	Clear, no odor

Total Purge Volume: 78 (Gallons)

Total Discharge: 3.03 (Casing Volumes)

Approx. Purge Rate: 2.0 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1132 Purge time start: 1141

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

WATER DISPOSAL

Purge water storage: polytank

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip / Source /)</u>
Sample ID: <u>MW-15</u>	Sample ID: <u>DUPE-7-3Q06</u>	Type: _____	Type: _____
Sample Time: <u>1222</u>	Sample Time: <u>-----</u>	Sample ID: _____	Sample ID: _____
No. of Containers <u>2</u>	No. of Containers: <u>2</u>	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # 16



Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 4-73803
 Navy Contract No.: Battelle
 Sampled By: Marco Mendoza, Chase Brogdon
 Date: 8/30/06
 Weather: clear and hot

22632 Golden Springs Dr., Suite 270
 Diamond Bar, CA 91765
 Telephone: (909) 396-7662
 Fax: (909) 396-1455

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{285}{\text{TD (feet)}} - \frac{211.29}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{144.35}{\text{Calculated Purge Volume}} \text{ Gallons}$$

PURGE METHOD

PUMP INTAKE SETTING

Bailer – Type: _____ Pump – Type: 2" Grundfos Depth in feet (BTOC): _____

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
1000	211.29	0	6.68	60.0	13.9	11.12	25.7	101	Clear, no odor
1015	211.29	29	6.86	58.8	6.36	13.99	25.5	52	Clear, no odor
1029	211.29	58	6.91	57.7	2.03	9.05	26.1	104	Clear, no odor
1044	211.29	87	7.02	58.8	0.75	12.42	26.0	78	Clear, no odor
1058	211.29	116	7.08	58.6	0.62	13.79	25.5	64	Clear, no odor
1113	211.29	145	7.07	57.8	0.21	11.49	26.1	37	Clear, no odor

Total Purge Volume: 145 (Gallons)

Total Discharge: 3.01 (Casing Volumes)

Approx. Purge Rate: 2.0 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 755 Purge time start: 1000

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

WATER DISPOSAL

Purge water storage: polytank

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip / Source /)</u>
Sample ID: <u>MW-16</u>	Sample ID: <u>DUPE-4-3Q06</u>	Type: _____	Type: _____
Sample Time: <u>1117</u>	Sample Time: <u>-----</u>	Sample ID: _____	Sample ID: _____
No. of Containers: <u>6</u>	No. of Containers: <u>6</u>	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD



Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-14
 Sampling Zone No.: 5 + 1
 Depth (ft): 540, 456, 382, 277, 207
 Beginning of Session: 14.02 psia
 End of Session: 14.01 psia

Start Time: 730
 Finish Time: 1025

Date: 8/16/06
 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	✓	✓	✓	✓	✓	✓	✓	✓	✓	193.54	✓	187.14	✓	187.12	✓	✓	193.51	801	5.29	1.65	47.8	8.9	15.2	48
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	156.91	✓	150.88	✓	150.88	✓	✓	156.89	825	5.67	0.39	70.9	8.68	19.0	-26
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	126.17	✓	118.84	✓	118.84	✓	✓	126.15	900	6.02	4.44	0.1	9.48	21.1	-46
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	80.28	✓	73.56	✓	73.55	✓	✓	80.30	926	6.45	2.77	0.1	9.70	21.6	-44
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	49.72	✓	44.06	✓	44.05	✓	✓	49.72	1005	6.61	1.22	0.096	10.62	23.5	94
1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	49.69	✓	44.03	✓	44.04	✓	✓	49.70	-	-	-	-	-	-	-

15/MSD <

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Notes:

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

Total Volume: _____



Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-20
 Sampling Zone No.: 5+01
 Depth (ft): 900, 700, 562, 392, 230
 Beginning of Session: 13.97 psia
 End of Session: 14.03 psia

Start Time: 745
 Finish Time: 1055

Date: 8/21/06
 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	✓	✓	✓	✓	✓	✓	✓	✓	332.26	✓	330.72	✓	330.71	✓	✓	332.25	817	5.91	0.80	50.3	9.36	19.2	-143
4	1	✓	✓	✓	✓	✓	✓	✓	✓	245.56	✓	240.14	✓	240.10	✓	✓	245.54	852	6.38	2.49	42.0	10.34	18.7	-94
3	1	✓	✓	✓	✓	✓	✓	✓	✓	185.68	✓	178.90	✓	178.52	✓	✓	185.62	926	6.03	1.99	70.3	9.88	20.6	-79
2	1	✓	✓	✓	✓	✓	✓	✓	✓	111.91	✓	109.11	✓	109.12	✓	✓	111.92	1000	6.31	0.21	50.1	10.97	21.9	-30
2	2	✓	✓	✓	✓	✓	✓	✓	✓	111.89	✓	109.15	✓	109.15	✓	✓	111.90	—	—	—	—	—	—	—
1	1	✓	✓	✓	✓	✓	✓	✓	✓	41.46	✓	38.84	✓	38.84	✓	✓	41.47	1050	6.22	1.14	97.8	10.86	22.8	-13



Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

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

Start Time: 738
 Finish Time: 1032

Date: 8/28/06
 Page: 1 of 1

Water Pressure Inside Casing: _____

Port #	Run #	Surface Function Checks							Position Sampler	Arm out	Sample Collection Checks							Water Quality Parameters							
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In			Deactivate Set Arm Locate Port	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)	Cond (mmhos)	Dissolved Oxygen	Temp. (oC)
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	209.57	✓	209.75	✓	209.75	✓	✓	209.57	805	7.34	0.87	55.9	8.24	21.3	-46
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	175.00	✓	176.09	✓	176.09	✓	✓	174.98	837	7.44	0.93	84.7	8.88	21.3	-22
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	118.61	✓	120.97	✓	120.97	✓	✓	118.61	906	7.43	3.28	85.6	9.13	21.6	-18
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	83.78	✓	86.67	✓	86.66	✓	✓	83.77	934	7.52	1.01	79.7	9.53	22.2	-4
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	55.40	✓	58.29	✓	58.30	✓	✓	55.41	1010	7.35	7.98	0.1	5.42	23.4	145
1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	55.37	✓	58.28	✓	58.31	✓	✓	55.36	-	-	-	-	-	-	-

12/1/59 <

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Notes:

port 5: CLEAR, STRONG ODSR port 4: CLEAR, NO ODSR port 3: CLEAR, NO ODSR
 port 2: CLEAR, NO ODSR port 1: CLEAR, NO ODSR

Total Volume: _____

ATTACHMENT 5: WATER LEVEL MEASUREMENTS

This attachment contains water level measurements for the Westbay™ multiport JPL monitoring wells obtained during the third quarter of 2006. Water level measurements were recorded before the sampling event on August 14, 2006, and after the sampling event on September 6, 2006. Water levels in the shallow wells were measured using a Solinst™ water level meter and the results are provided with the field logs (Attachment 4). In the deep multiport wells, the hydraulic head at each sampling port was measured with a Westbay™ pressure-transducer probe. Water level measurements were taken by Geofon Incorporated.

GEOFON, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-3
 Project No: 4-73803 Probe Type: Westbay
 Date: 8/14/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. + MSL): 1,100.34
 Weather: clear and warm

Ambient Readings		
Time	921	930
Pressure (psia)	14.04	14.07
Temperature (°C)	19.68	18.04

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	653	251.17	257.66	251.12	20.86	924	90.97	1009.37
4	558	209.98	216.63	209.98	21.94	925	90.62	1009.72
3	346	117.84	127.95	117.92	21.88	927	83.21	1017.13
2	252	77.05	87.02	77.08	21.22	928	83.64	1016.70
1	172	42.27	52.86	42.29	19.15	929	82.44	1017.90

GEOFON, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-4
 Project No: 4-73803 Probe Type: Westbay
 Date: 8/14/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. +MSL): 1,082.84
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	1236	1244
Pressure (psia)	14.04	14.08
Temperature (°C)	21.13	20.39

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	140.33	208.59	140.38	21.93		64.17	1018.67
4	392	87.68	156.21	87.72	22.18	1240	64.01	1018.83
3	322	57.26	126.33	57.25	21.96	1241	62.95	1019.89
2	240	21.48	90.79	21.48	21.53	1242	62.94	1019.90
1	150	14.17	53.34	14.17	20.86	1243	59.33	1023.51

GEOFON, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-11
 Project No: 4-73803 Probe Type: Westbay
 Date: 8/14/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,139.30
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	903	912
Pressure (psia)	14.01	14.04
Temperature (°C)	20.28	18.49

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	639	240.08	234.34	240.14	20.32	907	130.70	1008.60
4	524	190.60	191.80	190.64	21.03	908	113.84	1025.46
3	429	149.74	149.52	149.78	20.85	909	116.38	1022.92
2	259	76.13	77.03	76.16	20.04	910	113.61	1025.69
1	149	28.79	35.63	28.82	19.10	911	99.12	1040.18

GEOFON, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-12
 Project No: 4-73803 Probe Type: Westbay
 Date: 8/14/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,102.14
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	1218	1230
Pressure (psia)	14.02	14.08
Temperature (°C)	25.68	18.24

Screen No.	Depth (Ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	548	197.44	212.40	197.49	23.14	1221	90.34	1011.80
4	436	148.74	167.02	148.81	22.70	1222	83.03	1019.11
3	323	99.66	118.51	99.64	21.55	1223	81.94	1020.20
2	243	64.78	84.12	64.78	20.55	1224	81.28	1020.86
1	140	19.83	41.49	19.86	18.68	1229	76.63	1025.51

GEOFON, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-14
 Project No: 4-73803 Probe Type: Westbay
 Date: 8/14/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,173.47
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	742	749
Pressure (psia)	14.01	14.04
Temperature (°C)	19.26	19.60

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	540	191.67	187.25	191.74	19.93	744	140.34	1033.13
4	456	155.26	151.00	155.22	20.47	745	139.96	1033.51
3	382	123.03	118.96	123.05	20.41	746	139.88	1033.59
2	277	77.33	73.68	77.31	20.11	747	139.34	1034.13
1	207	46.74	44.18	46.78	19.83	748	137.40	1036.07

GEOFON, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-17
 Project No: 4-73803 Probe Type: Westbay
 Date: 8/14/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,191.21
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	1038	1049
Pressure (psia)	13.98	14.02
Temperature (°C)	21.31	16.14

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	726	245.93	248.74	245.98	20.24	1042	184.41	1006.80
4	582	183.62	184.25	183.60	19.97	1043	189.19	1002.02
3	468	134.28	132.80	134.20	19.13	1045	193.88	997.33
2	370	91.60	94.36	91.64	18.14	1046	184.56	1006.65
1	250	39.40	44.77	39.46	17.11	1047	178.97	1012.24

GEOFON, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-18
 Project No: 4-73803 Probe Type: Westbay
 Date: 8/14/06 Serial No.: _____
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,225.41

Note: clear and warm

Ambient Readings	Start	Finish
Time	1057	1106
Pressure (psia)	13.97	14.01
Temperature (°C)	18.41	17.48

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	156.16	211.84	156.17	19.94	1100		
								227.51
4	564	103.97	161.18	103.98	20.65	1102		
								224.39
3	424	43.07	103.88	43.05	19.84	1103		
								216.58
2	330	14.19	63.30	14.19	18.66	1104		
								216.20
1	270	14.15	37.52	14.15	18.08	1105		
								215.67

GEOFON, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-19
 Project No: 4-73803 Probe Type: Westbay
 Date: 8/14/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. +MSL): 1,142.94
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	1018	1027
Pressure (psia)	14.02	14.04
Temperature (°C)	19.94	17.37

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	498	174.70	171.03	174.66	18.71	1022	135.78	1007.16
4	444	151.26	147.63	151.22	18.92	1023	135.76	1007.18
3	392	128.74	126.05	128.68	18.91	1024	133.55	1009.39
2	314	94.82	91.88	94.82	18.83	1025	134.38	1008.56
1	242	63.55	60.93	63.53	18.36	1026	133.78	1009.16

GEOFON, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-20
 Project No: 4-73803 Probe Type: Westbay
 Date: 8/14/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,165.05
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	1116	1127
Pressure (psia)	14.03	14.04
Temperature (°C)	19.40	18.10

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	900	330.79	331.25	330.83	20.74	1119	168.17	996.88
4	700	244.24	241.14	244.20	22.08	1122	176.06	988.99
3	562	184.34	174.06	184.41	21.62	1123	192.81	972.24
2	392	110.56	108.41	110.71	20.42	1125	174.27	990.78
1	230	40.30	38.41	40.32	18.67	1126	173.76	991.29

GEOFON, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-21
 Project No: 4-73803 Probe Type: Westbay
 Date: 8/14/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,059.10
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	800	807
Pressure (psia)	14.09	14.12
Temperature (°C)	19.23	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	125.52	161.23	125.57	19.63	802	32.55	1026.55
4	310	98.57	134.37	98.54	19.93	803	32.51	1026.59
3	240	68.62	104.52	68.56	19.89	804	31.38	1027.72
2	161	34.18	70.36	34.16	19.62	805	31.19	1027.91
1	90	14.17	39.19	14.16	19.33	806	32.09	1027.01

GEOFON, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-22
 Project No: 4-73803 Probe Type: Westbay
 Date: 8/14/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,176.98
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	822	830
Pressure (psia)	14.01	14.03
Temperature (°C)	18.98	20.40

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	588	201.12	201.96	201.11	20.44	825	154.40	1022.58
4	467	148.74	150.85	148.73	21.14	826	151.31	1025.67
3	389	114.94	118.74	114.92	21.24	827	147.39	1029.59
2	329	88.89	92.65	88.90	21.14	828	147.58	1029.40
1	245	51.96	56.39	52.00	20.79	829	147.23	1029.75

GEOFON, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-23
 Project No: 4-73803 Probe Type: Westbay
 Date: 8/14/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,108.84
 Weather: clear and cool

Ambient Readings	Start	Finish
Time	723	732
Pressure (psia)	14.04	14.08
Temperature (°C)	18.16	20.10

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	542	205.13	211.19	205.12	19.78	726	87.17	1021.67
4	445	163.14	169.28	163.12	20.63	728	86.86	1021.98
3	319	108.53	116.30	108.57	20.76	729	83.09	1025.75
2	254	80.36	88.14	80.38	20.65	730	83.05	1025.79
1	174	45.61	54.23	45.62	20.32	731	81.28	1027.56

GEOFON, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-24
 Project No: 4-73803 Probe Type: Westbay
 Date: 8/14/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,200.94
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	842	850
Pressure (psia)	13.99	14.06
Temperature (°C)	19.34	21.05

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	678	235.54	228.06	235.56	20.92	845	184.14	1016.80
4	554	181.86	175.98	181.88	21.59	846	180.29	1020.65
3	435	130.31	125.94	130.33	21.63	848	176.73	1024.21
2	373	103.44	99.15	103.47	21.63	848	176.54	1024.40
1	279	62.69	59.58	62.70	21.44	849	173.82	1027.12

GEOFON, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-25
 Project No: 4-73803 Probe Type: Westbay
 Date: 8/14/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. + MSL): 934.52
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	1141	1150
Pressure (psia)	14.15	14.15
Temperature (°C)	22.52	20.39

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	206.37	209.62	206.44	22.21	1144	262.05	672.47
4	633	171.93	175.95	171.96	22.37	1145	259.73	674.79
3	503	115.70	120.86	115.69	21.96	1147	256.82	677.70
2	423	80.96	86.52	80.96	21.45	1148	256.04	678.48
1	358	52.66	58.17	52.65	20.96	1149	256.45	678.07

GEOFON, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-3
 Project No: 4-73803 Probe Type: Westbay
 Date: 9/6/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. + MSL): 1,100.34
 Weather: clear and warm

Ambient Readings		
Time	919	931
Pressure (psia)	14.07	14.09
Temperature (°C)	21.26	17.39

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	255.61	257.52	255.64	21.69	923	91.36	1008.98
4	558	214.45	216.47	214.40	22.55	925	91.06	1009.28
3	346	122.34	126.93	122.27	22.02	927	85.63	1014.71
2	252	81.44	85.97	81.42	21.14	928	86.13	1014.21
1	172	46.60	51.53	46.66	18.37	930	85.58	1014.76

GEOFON, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-4
 Project No: 4-73803 Probe Type: Westbay
 Date: 9/6/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. +MSL): 1,082.84
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	1243	1251
Pressure (psia)	14.07	14.11
Temperature (°C)	22.27	20.36

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	513	140.48	207.64	140.54	22.64	1245	66.43	1016.41
4	392	87.85	155.26	87.84	22.53	1247	66.27	1016.57
3	322	57.38	125.24	57.37	22.08	1248	65.53	1017.31
2	240	21.65	89.68	21.65	21.58	1249	65.57	1017.27
1	150	14.17	51.79	14.18	20.90	1250	62.98	1019.86

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Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-11
 Project No: 4-73803 Probe Type: Westbay
 Date: 9/6/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,139.30
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	850	910
Pressure (psia)	14.05	14.11
Temperature (°C)	22.53	18.06

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	239.91	233.99	239.91	21.40	853		
								131.60
4	524	190.41	190.90	190.40	19.46	905		
								116.01
3	429	149.52	148.51	149.52	19.82	906		
								118.80
2	259	75.84	75.96	75.90	19.36	908		
								116.17
1	149	28.58	34.43	28.55	18.43	909		
								101.98

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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: 4-73803 Probe Type: Westbay
 Date: 9/6/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,102.14
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	1226	1236
Pressure (psia)	14.05	14.08
Temperature (°C)	25.03	18.34

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	548	197.19	212.17	197.22	22.82	1229			
								90.94	1011.20
4	436	148.50	166.14	148.52	22.53	1230			
								85.13	1017.01
3	323	99.38	117.46	99.36	21.13	1232			
								84.43	1017.71
2	243	64.43	83.03	64.49	20.06	1233			
								83.86	1018.28
1	140	19.53	39.86	19.57	19.11	1234			
								80.46	1021.68

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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: 4-73803 Probe Type: Westbay
 Date: 9/6/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,173.47
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	719	729
Pressure (psia)	14.04	14.08
Temperature (°C)	19.86	19.74

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	191.48	186.02	191.48	21.17	724	143.24	1030.23
4	456	154.88	149.77	154.95	21.26	725	142.87	1030.60
3	382	122.78	117.71	122.77	20.95	726	142.83	1030.64
2	277	77.06	72.40	77.05	20.43	727	142.36	1031.11
1	207	46.56	42.87	46.55	20.03	728	140.49	1032.98

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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: 4-73803 Probe Type: Westbay
 Date: 9/6/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,191.21
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	1035	1046
Pressure (psia)	14.04	14.06
Temperature (°C)	21.94	16.17

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	726	245.84	248.42	245.88	20.71	1039			
								185.29	1005.92
4	582	183.58	185.25	183.55	20.57	1040			
								187.02	1004.19
3	468	134.09	133.34	134.10	19.14	1042			
								192.77	998.44
2	370	91.59	93.76	91.57	18.18	1043			
								186.09	1005.12
1	250	39.40	43.28	39.36	16.95	1045			
								182.54	1008.67

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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: 4-73803 Probe Type: Westbay
 Date: 9/6/06 Serial No.: _____
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,225.41

Note: clear and warm

Ambient Readings	Start	Finish
Time	1055	1106
Pressure (psia)	14.02	14.06
Temperature (°C)	18.97	17.23

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	684	156.24	212.46	156.19	20.65	1058		
								226.20
4	564	104.10	161.93	104.12	21.16	1100		
								222.77
3	424	43.19	103.11	43.18	20.19	1102		
								218.47
2	330	14.22	61.94	14.23	18.95	1103		
								219.45
1	270	14.19	35.93	14.17	17.77	1104		
								219.45

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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: 4-73803 Probe Type: Westbay
 Date: 9/6/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. +MSL): 1,142.94
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	1007	1024
Pressure (psia)	14.07	14.08
Temperature (°C)	22.50	16.92

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	498	174.56	170.81	174.54	18.33	1018	136.40	1006.54
4	444	151.12	147.43	151.12	18.76	1019	136.34	1006.60
3	392	128.59	125.37	128.55	18.82	1020	135.23	1007.71
2	314	94.71	91.16	94.70	18.75	1021	136.15	1006.79
1	242	63.42	59.88	63.42	18.14	1022	136.32	1006.62

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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: 4-73803 Probe Type: Westbay
 Date: 9/6/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,165.05
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	1116	1132
Pressure (psia)	14.02	14.09
Temperature (°C)	21.05	17.81

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	330.60	330.31	330.65	21.89	1121	170.32	994.73
4	700	243.98	240.37	244.01	22.37	1125	177.81	987.24
3	562	184.23	175.98	184.22	21.84	1127	188.36	976.69
2	392	110.46	108.01	110.49	20.20	1128	175.17	989.88
1	230	40.09	37.27	40.11	18.25	1130	176.36	988.69

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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: 4-73803 Probe Type: Westbay
 Date: 9/6/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,059.10
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	740	758
Pressure (psia)	14.10	14.13
Temperature (°C)	19.49	19.56

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	125.40	160.03	125.44	19.71	742	35.34	1023.76
4	310	98.40	133.18	98.44	19.97	743	35.28	1023.82
3	240	68.43	103.32	68.40	19.36	750	34.17	1024.93
2	161	33.91	69.15	33.95	19.24	751	34.00	1025.10
1	90	14.18	37.92	14.19	19.52	756	35.05	1024.05

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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: 4-73803 Probe Type: Westbay
 Date: 9/6/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,176.98
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	809	818
Pressure (psia)	14.07	14.08
Temperature (°C)	19.88	20.59

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	588	201.04	201.06	201.03	21.40	812	156.61	1020.37
4	467	148.65	149.84	148.68	21.83	812	153.78	1023.20
3	389	114.88	117.50	114.89	21.70	814	150.39	1026.59
2	329	88.85	91.42	88.85	21.43	815	150.55	1026.43
1	245	51.94	54.94	51.94	20.97	817	150.71	1026.27

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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: 4-73803 Probe Type: Westbay
 Date: 9/6/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,108.84
 Weather: clear and cool

Ambient Readings	Start	Finish
Time	659	707
Pressure (psia)	14.02	14.13
Temperature (°C)	19.26	20.19

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	542	205.28	210.30	205.28	20.41	702	89.18	1019.66
4	445	163.33	168.36	163.27	21.04	703	88.94	1019.90
3	319	108.69	115.13	108.70	21.08	704	85.74	1023.10
2	254	80.50	86.96	80.52	20.79	705	85.73	1023.11
1	174	45.74	52.81	45.76	20.44	706	84.51	1024.33

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Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-24
 Project No: 4-73803 Probe Type: Westbay
 Date: 9/6/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,200.94
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	828	837
Pressure (psia)	14.06	14.09
Temperature (°C)	20.40	20.86

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	678	235.45	227.45	235.46	21.44	831	185.71	1015.23
4	554	181.77	175.10	181.80	21.87	832	182.48	1018.46
3	435	130.24	124.82	130.23	21.83	833	179.48	1021.46
2	373	103.34	98.07	103.36	21.81	834	179.19	1021.75
1	279	62.63	58.16	62.60	21.60	835	177.26	1023.68

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-25
 Project No: 4-73803 Probe Type: Westbay
 Date: 9/6/06 Serial No.: 2508
 Personnel: Marco Mendoza, Chase Brogdon
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. + MSL): 934.52
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	1146	1157
Pressure (psia)	14.14	14.17
Temperature (°C)	24.15	20.34

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	713	206.18	209.81	206.15	23.06	1149	261.59	672.93
4	633	171.67	176.16	171.68	22.92	1151	259.22	675.30
3	503	115.38	121.03	115.43	22.28	1152	256.40	678.12
2	423	80.72	86.72	80.68	21.66	1153	255.56	678.96
1	358	52.40	58.41	52.41	21.01	1155	255.87	678.65

