

Groundwater Sampling
Field Data Sheet for Multi-Port Well
Date: 1/24/02

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/JNT

Well ID: MW-23^{24 JNT} Depth (ft.): 512^{678 JNT}
Sampling Zone No.: 5
Starting Time: 1009 Finishing Time: 1130

Water Pressure Inside MP Casing -

Beginning of Session: 170.25
End of Session: 168.12

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks							Water Quality Parameters					
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		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	Turbidity (NTU)	Temperature (°C)
1	✓	✓	✓	✓	✓	✓	170.25	✓	208.88	✓	208.88	✓	✓	170.25	1045	8.69	-10	20.0	0.329
2	✓	✓	✓	✓	✓	✓	170.17	✓	208.88	✓	208.88	✓	✓	170.17					
3	✓	✓	✓	✓	✓	✓	168.11	✓	208.88	✓	208.88	✓	✓	168.12					
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Notes: NO NOTICABLE COLOR OR ODOR

Total Volume: 3.5L

Groundwater Sampling
Field Data Sheet for Multi-Port Well

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/JAT

Well ID: MW-24 Depth (ft.): 554-445
Sampling Zone No.: 4
Starting Time: 1137 Finishing Time: 1242

Date: 1/24/02

Water Pressure Inside MP Casing -

Beginning of Session: 116.15
End of Session: 114.04

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		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	Turbidity (NTU)	Temperature (°C)
1	✓	✓	✓	✓	✓	✓	116.15	✓	156.65	✓	156.66	✓	✓	116.14	1209	9.48	Ø	25.5	0.281
2	✓	✓	✓	✓	✓	✓	116.10	✓	156.65	✓	156.65	✓	✓	116.10					
3	✓	✓	✓	✓	✓	✓	114.03	✓	156.64	✓	156.65	✓	✓	114.04					
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Notes: NO NOTICABLE COLOR OR ODOR

Total Volume: 3.5L

Groundwater Sampling
Field Data Sheet for Multi-Port Well

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MRS/SNT

Well ID: MW-24 Depth (ft.): 319
Sampling Zone No.: 3
Starting Time: 1255 Finishing Time: 1335

Date: 1/24/02

Water Pressure Inside MP Casing -

Beginning of Session: 64.19
End of Session: 62.14

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		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	Turbidity (NTU)	Temperature (°C)
1	✓	✓	✓	✓	✓	✓	64.19	✓	106.02	✓	106.02	✓	✓	64.18	1320	9.58	999	23.7	0.327
2	✓	✓	✓	✓	✓	✓	62.13	✓	106.01	✓	106.02	✓	✓	62.14					
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Notes: NO NOTICABLE ODOR, SLIGHT YELLOW TINT

Total Volume: 2.0L

Groundwater Sampling
Field Data Sheet for Multi-Port Well
Date: 1/24/02

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MEG/JNT

Well ID: MW-24 Depth (ft.): 373
Sampling Zone No.: 2
Starting Time: 1343 Finishing Time: 1408

Water Pressure Inside MP Casing -

Beginning of Session: 38.10
End of Session: 38.10

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		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	Turbidity (NTU)	Temperature (°C)
1	✓	✓	✓	✓	✓	✓	38.10	✓	78.68	✓	78.68	✓	✓	38.10	1400	9.05	1	25.2	0.419
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Notes: NO ODR, SLIGHT YELLOW TINT
(1) RUN, 8 BOTTLES = 2.0L

Total Volume: 2.0L

Groundwater Sampling
Field Data Sheet for Multi-Port Well

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/JNT

Well ID: MW-24
Sampling Zone No.: 1
Starting Time: 1418

Depth (ft.): 279'
174
Finishing Time: 1519

Date: 1/24/07

Water Pressure Inside MP Casing -

Beginning of Session: 14.23
End of Session: 14.26

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	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	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	14.23	✓	36.86	✓	36.86	✓	✓	14.26	1440	8.89	Ø	25.5	0.420
2	✓	✓	✓	✓	✓	✓	14.25	✓	36.87	✓	36.87	✓	✓	14.27					
3	✓	✓	✓	✓	✓	✓	14.24	✓	36.85	✓	36.88	✓	✓	14.28					
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Notes: NO NOTICABLE COLOR OR ODOR

Total Volume: 4.5L

Groundwater Sampling
Field Data Sheet for Multi-Port Well

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/JWT

Well ID: MW-11 Depth (ft.): 149
Sampling Zone No.: 1
Starting Time: 1209 Finishing Time: 1225

Date: 1/25/02

Water Pressure Inside MP Casing -

Beginning of Session: 14.14
End of Session: 14.16

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	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	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	14.14	✓	24.40	✓	24.35	✓	✓	14.16	1220	8.87	0	20.2	.451
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Notes: (1) RUN, 8 BOTTLES

NO NOTICABLE COLOR OR ODOR

Total Volume: 2.0L

Groundwater Sampling
Field Data Sheet for Multi-Port Well

Date: 1/25/02

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/JWT

Well ID: MW-11 Depth (ft.): 639
Sampling Zone No.: 5
Starting Time: ~~0908~~ ^{JWT} 0954 Finishing Time: 1038

Water Pressure Inside MP Casing -

Beginning of Session: 174.05
End of Session: 171.46

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		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	Turbidity (NTU)	Temperature (°C)
1	✓	✓	✓	✓	✓	✓	174.05	✓	215.51	✓	215.31	✓	✓	174.05	10:14	9.35	23	17.6	0.274
2	✓	✓	✓	✓	✓	✓	171.45	✓	215.45	✓	215.41	✓	✓	171.46					
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Notes: NO NOTICABLE COLOR OR ODOR

Total Volume: 1.75L

Groundwater Sampling
Field Data Sheet for Multi-Port Well

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/JNT

Well ID: MW-11 Depth (ft.): 524
Sampling Zone No.: 4
Starting Time: 0908 Finishing Time: 0945

Date: 1/25/02

Water Pressure Inside MP Casing -

Beginning of Session: 125.51
End of Session: 125.52

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters					
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		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	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	125.51	✓	171.71	✓	171.41	✓	✓	125.52	0930	8.90	27	16.2	0.232	
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Notes: NO NOTICABLE COLOR OR ODOR
(8) BOTTLES, 1 RUN

Total Volume: 2.0L

Groundwater Sampling
Field Data Sheet for Multi-Port Well

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/JMT

Well ID: MW-11 Depth (ft.): 429
Sampling Zone No.: 3
Starting Time: 1051 Finishing Time: 1121

Date: 1/25/02

Water Pressure Inside MP Casing -

Beginning of Session: 83.39
End of Session: 81.35

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		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	Turbidity (NTU)	Temperature (°C)
1	✓	✓	✓	✓	✓	✓	83.39	✓	129.96	✓	129.83	✓	✓	83.39	1100	9.00	27	18.0	0.320
2	✓	✓	✓	✓	✓	✓	81.33	✓	129.94	✓	129.85	✓	✓	81.35					
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Notes: DUAL COLLARS AT PORT.
NO NOTICABLE COLOR OR ODOR

Total Volume: 2.0L

Groundwater Sampling
Field Data Sheet for Multi-Port Well

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/JT

Well ID: mw-11 Depth (ft.): 259
Sampling Zone No.: 2
Starting Time: 1132 Finishing Time: 1200

Date: 1/29/02

Water Pressure Inside MP Casing -

Beginning of Session: 14.16
End of Session: 14.20

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		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	Turbidity (NTU)	Temperature (°C)
1	✓	✓	✓	✓	✓	✓	14.16	✓	58.02	✓	57.99	✓	✓	14.20	1153	9.09	28	19.2	0.367
2	✓	✓	✓	✓	✓	✓	14.16	✓	57.98	✓	57.94	✓	✓	14.20					
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Notes: NO NOTICABLE COLOR OR ODOR

Total Volume: 2.0L

Groundwater Sampling
Field Data Sheet for Multi-Port Well

Project Name: JPL Pasadena
Project No: 00HWO19
Personnel: MES/SNT

Well ID: MW-22 Depth (ft.): 588
Sampling Zone No.: 5
Starting Time: 1100 Finishing Time: 1151

Date: 1/20/02

Water Pressure Inside MP Casing -

Beginning of Session: 136.04
End of Session: 133.43

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks							Water Quality Parameters					
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		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	Turbidity (NTU)	Temperature (°C)
1	✓	✓	✓	✓	✓	✓	136.04	✓	183.20	✓	183.20	✓	✓	136.05	1130	8.24	27	17.2	0.290
2	✓	✓	✓	✓	✓	✓	133.43	✓	183.19	✓	183.20	✓	✓	133.43					
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Notes: No NOTICABLE COLOR OR ODOR

Total Volume: 1.75L

Groundwater Sampling
Field Data Sheet for Multi-Port Well

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: mes/JAT

Well ID: MW-22 Depth (ft.): 467
Sampling Zone No.: 4
Starting Time: 1205 Finishing Time: 1258

Date: 1/28/02

Water Pressure Inside MP Casing -

Beginning of Session: 83.37
End of Session: 81.23

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks							Water Quality Parameters					
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	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	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	83.33	✓	132.10	✓	132.11	✓	✓	83.34	1230	9.10	622	17.1	0.305
2	✓	✓	✓	✓	✓	✓	81.25	✓	132.11	✓	132.10	✓	✓	81.23					
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Notes: NO NOTICABLE COLOR OR ODOR

Total Volume: 2.0L

Groundwater Sampling
Field Data Sheet for Multi-Port Well

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/JWT

Well ID: MW-22 Depth (ft.): 389
Sampling Zone No.: 3
Starting Time: 1311 Finishing Time: 1343

Date: 1/28/02

Water Pressure Inside MP Casing -

Beginning of Session: 49.26
End of Session: 47.18

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks							Water Quality Parameters					
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	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	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	49.26	✓	99.61	✓	99.60	✓	✓	49.26	1330	8.94	90	16.9	0.430
2	✓	✓	✓	✓	✓	✓	47.18	✓	99.61	✓	99.60	✓	✓	47.18					
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Notes: NO NOTICABLE COLOR OR OIL OOR

Total Volume: 2.0L

Groundwater Sampling
Field Data Sheet for Multi-Port Well

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/JWT

Well ID: MW-22 Depth (ft.): 329
Sampling Zone No.: 2
Starting Time: 1355 Finishing Time: 1430

Date: 1/28/02

Water Pressure Inside MP Casing -

Beginning of Session: 23.01
End of Session: 20.95

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks							Water Quality Parameters					
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		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	Turbidity (NTU)	Temperature (°C)
1	✓	✓	✓	✓	✓	✓	23.01	✓	73.40	✓	73.40	✓	✓	23.01	1415	8.91	4	17.0	0.509
2	✓	✓	✓	✓	✓	✓	20.95	✓	73.38	✓	73.39	✓	✓	20.95					
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Notes: No NOTICABLE COLOR OR ODOR

Total Volume: 2.0L

Groundwater Sampling
Field Data Sheet for Multi-Port Well

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/WNT

Well ID: MW-22 Depth (ft.): 245
Sampling Zone No.: 1
Starting Time: 1440 Finishing Time: _____

Date: 1/28/02

Water Pressure Inside MP Casing - Beginning of Session: 14.10
End of Session: 14.10

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks							Water Quality Parameters					
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	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	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	14.10	✓	35.05	✓	35.05	✓	✓	14.10	1500	8.30	25	16.2	1.20
2	✓	✓	✓	✓	✓	✓	14.10	✓	35.05	✓	35.07	✓	✓	14.10					
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Notes: NO NOTICABLE COLOR OR ODOR

Total Volume: 2.25L

Groundwater Sampling
Field Data Sheet for Multi-Port Well

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: NGS/JNT/TAM

Well ID: MW-4 Depth (ft.): 513
Sampling Zone No.: 5
Starting Time: 1047 Finishing Time: 11:39

Date: 2/5/02

Water Pressure Inside MP Casing -

Beginning of Session: 139.10
End of Session: 137.05

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks							Water Quality Parameters					
	Shoe Out	Vacuum Check Valve Closed	Valve Ops.	Evacuate Container	Valve Closed		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	Turbidity (NTU)	Temperature (°C)
1	✓	✓	✓	✓	✓	✓	139.10	✓	190.40	✓	190.4	✓	✓	139.11	1123	6.85	15	19.0	.390
2	✓	✓	✓	✓	✓	✓	137.05	✓	190.40	✓	190.39	✓	✓	137.05					
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Notes: NO NOTICABLE COLOR OR ODOR

Total Volume: 2.0L

Groundwater Sampling
Field Data Sheet for Multi-Port Well

Project Name: JPL Pasadena
Project No: 00HWO19
Personnel: JNT/TAM/MES

Well ID: MW-4 Depth (ft.): 392
Sampling Zone No.: 4
Starting Time: 1149 Finishing Time: 1248

Date: 2/5/02

Water Pressure Inside MP Casing -

Beginning of Session: 86.25
End of Session: 84.22

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	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	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	86.25	✓	138.04	✓	138.04	✓	✓	86.25	1236	7.12	29	20.1	.412
2	✓	✓	✓	✓	✓	✓	84.27	✓	138.01	✓	138.02	✓	✓	84.22					
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Notes: NO NOTICABLE COLOR OR ODOR

Total Volume: 2.0L

Groundwater Sampling
Field Data Sheet for Multi-Port Well

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/JST/TAM

Well ID: MW-4 Depth (ft.): 322
Sampling Zone No.: 3
Starting Time: 1300 Finishing Time: 1356

Date: 2/5/02

Water Pressure Inside MP Casing -

Beginning of Session: 55.63
End of Session: 54.09

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		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	Turbidity (NTU)	Temperature (°C)
1	✓	✓	✓	✓	✓	✓	55.63	✓	107.89	✓	107.90	✓	✓	55.64	1331	6.36	2.9	22.2	.403
2	✓	✓	✓	✓	✓	✓	55.64	✓	107.88	✓	107.89	✓	✓	55.60					
3	✓	✓	✓	✓	✓	✓	54.09	✓	107.88	✓	107.90	✓	✓	54.09					
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Notes: NO ODOR, BUT AN ORANGE-ISH TINT TO THE WATER

Total Volume: 3.75L

Groundwater Sampling
Field Data Sheet for Multi-Port Well

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/DJT/TAM

Well ID: MW-4 Depth (ft.): 240'
Sampling Zone No.: 2
Starting Time: 1406 Finishing Time: 1609

Date: 2/5/02

Water Pressure Inside MP Casing -

Beginning of Session: 19.74
End of Session: 18.60

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	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	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	19.74	✓	72.08	✓	72.09	✓	✓	19.74	1454	6.76	13	21.9	.695
2	✓	✓	✓	✓	✓	✓	19.73	✓	72.09	✓	72.09	✓	✓	19.73					
3	✓	✓	✓	✓	✓	✓	19.70	✓	72.10	✓	72.09	✓	✓	19.68					
4	✓	✓	✓	✓	✓	✓	19.70	✓	72.08	✓	72.09	✓	✓	19.65					
5	✓	✓	✓	✓	✓	✓	19.60	✓	72.08	✓	72.08	✓	✓	19.62					
6	✓	✓	✓	✓	✓	✓	18.60	✓	72.09	✓	72.10	✓	✓	18.60					
7	✓	✓																	
8																			
9																			
10																			
11																			
12																			

Notes: NO ODOR, BUT ORANGE IN COLOR

Total Volume: 8.5L

Groundwater Sampling
Field Data Sheet for Multi-Port Well

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/JST/TAM

Well ID: MW-4 Depth (ft.): 150
Sampling Zone No.: 1
Starting Time: 1620 Finishing Time: 1647

Date: 2/5/02

Water Pressure Inside MP Casing - Beginning of Session: 14.17
End of Session: 14.20

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	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	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	14.17	✓	33.67	✓	33.67	✓	✓	14.18	1638	6.43	∅	19.4	.348
2	✓	✓	✓	✓	✓	✓	14.18	✓	33.66	✓	33.66	✓	✓	14.20					
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			

Notes: NO NOTICABLE COLOR OR ODOR

Total Volume: 2.25L

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: JPL Pasadena Well ID: MW-13
 Project No: 00HW019 Equipment: GRUNDOS REDI-FLO
 Date: 1/29/02
 Personnel: MES/JNT Contractor: SOTA ENV.

	Before	Reference Point	After
Depth to Water (ft.)	206.07	TOC	206.1'
Depth to Sediment (ft.)	NM ✓	_____	_____
Thickness of Sediment (ft.)	NM ✓	_____	_____

TD = 275'

Depth of Well (ft.) 275'
 Diameter of Casing (ft.) 4"
 Water Column Height (ft.) 68.93

0.653 Casing Volume (gal.) = $\pi(\text{Casing Diam. [ft.]} / 2)^2 (\text{Water Column Ht. [ft.]}) 7.48 \text{ gal./ft}^3 = \underline{45 \text{ gal}}$
 Casing Volumes Purged 3

Total Volume Purged (gal.) 135 gal.

Time	pH ✗	Turbidity (NTU)	Temperature (°C)	Conductivity (µmhos)	Pump Rate (gpm)	Comments
1220					1	START - WATER TURBID YELLOW
1223	6.60	37	18.8	0.540	1	3 gal " "
1230	5.52	18	20.9	0.624	1	10 gal - CLEAR
1230	4.86	7	21.8	0.539	1	20 gal - CLEAR
1250	4.79	0	22.2	0.522	1	30 gal - CLEAR
1300	4.63	1	22.2	.520	1	40 GAL - CLEAR
1310	4.54	0	22.3	.516	1	50 GAL - CLEAR
1320	4.55	5	22.3	0.525	1	60 gal. - CLEAR
1330	4.44	7	22.3	0.567	1	70 gal.
1340	4.45	10	22.3	0.519	1	80 gal.
1350	4.42	6	22.3	0.505	1	90 gal
1400	4.39	2	21.9	0.507	1	100 gal.
1410	4.33	0	21.7	0.503	1	110 gal.
1420	4.29	0	21.6	0.501	1	120 gal.
1430	4.36	0	21.2	0.500	1	130 gal.
1435	4.30	2	21.3	0.502	1	135 gal.

Notes: SAMPLE COLLECTED @ 1435 ✗ PH BULB BROKEN - OBSERVED @ FINISH

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: JPL Pasadena Well ID: MW-16
 Project No: 00HW019 Equipment: REDI-FLO (GRUNDFOS)
 Date: 1/29/02
 Personnel: MES/JNT Contractor: SOTA

	Before	Reference Point	After
Depth to Water (ft.)	259.78	TOL	259.8
Depth to Sediment (ft.)	NM		
Thickness of Sediment (ft.)			

Depth of Well (ft.) 285'
 Diameter of Casing (ft.) 4"
 Water Column Height (ft.) 25.22'
 Casing Volume (gal.) = $\pi(\text{Casing Diam. [ft.]/2})^2 (\text{Water Column Ht. [ft.]}) 7.48 \text{ gal./ft}^3 =$ 16.5
 Casing Volumes Purged 3
 Total Volume Purged (gal.) 50

Time	pH *	Turbidity (NTU)	Temperature (°C)	Conductivity (µmhos)	Pump Rate (gpm)	Comments
15:17						START
15:22	*	2	18.9	0.501	2	10 gal. - CLEAR
15:25						PUMP SHUT OFF - OVERLOAD
15:33						PUMP ON
15:37		2	22.1	0.433	2	20 gal. - CLEAR
15:43						PUMP SHUT OFF - OVERLOAD
15:51						30 gal. - OVERLOAD PUMP ON 1.5 gpm
15:52	*	2	21.6	0.423	1.5	32 gal. - CLEAR
15:57	*	0	21.6	0.424	1.5	40 gal. - CLEAR
16:03	*	1	22.0	0.424	1.5	50 gal. - CLEAR

Notes: * pH BULB BROKEN SAMPLED @ 16⁰⁴

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: JPL Pasadena Well ID: MW-10
 Project No: 00HW019 Equipment: GRUNDFOS REDIFLO
 Date: 1/30/02
 Personnel: MES/SJT Contractor: SOTA

	Before	Reference Point	After
Depth to Water (ft.)	111.22	TOC	111.22
Depth to Sediment (ft.)	NM		
Thickness of Sediment (ft.)			

Depth of Well (ft.) 155'
 Diameter of Casing (ft.) 4"
 Water Column Height (ft.) 43.78'

Casing Volume (gal.) = $\pi(\text{Casing Diam. [ft.]} / 2)^2 (\text{Water Column Ht. [ft.]}) 7.48 \text{ gal./ft}^3 = \underline{28.5 \text{ gal}}$ x 3 = 86
 Casing Volumes Purged 3

Total Volume Purged (gal.) _____

Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (µmhos)	Pump Rate (gpm)	Comments
13:04						START PUMP @ 2gpm RED-BROWN TURBID
13:07	6.01	-10	19.9	1.32	2	6 gal. - CLEAR
13:14	6.03	-10	19.8	1.32		20 gal. - CLEAR
13:19	6.01	-10	20.1	1.31		30 gal. - CLEAR
13:24	6.02	-10	20.0	1.32		40 gal. - CLEAR
13:29	6.02	-10	20.0	1.32		50 gal. - CLEAR
13:34	6.02	-3	20.2	1.32		60 gal. - CLEAR
13:39	6.02	-10	20.2	1.32		70 gal. - CLEAR
13:44	6.03	0	20.1	1.31		80 gal. - CLEAR
13:47	6.03	-10	20.2	1.32		86 gal. - CLEAR

Notes: SAMPLE COLLECTED @ 13:47

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: JPL Pasadena Well ID: MW-5
 Project No: 00HW019 Equipment: GRUNDFOS REDIFLO
 Date: 1/30/02
 Personnel: MES/JST Contractor: SOTA

	Before	Reference Point	After
Depth to Water (ft.)	97.03'	TOC	97.03
Depth to Sediment (ft.)	NM		
Thickness of Sediment (ft.)			

Depth of Well (ft.) 140'
 Diameter of Casing (ft.) 4"
 Water Column Height (ft.) 42.97'

Casing Volume (gal.) = $\pi(\text{Casing Diam. [ft.]/2})^2 (\text{Water Column Ht. [ft.]}) 7.48 \text{ gal./ft}^3 = \underline{28 \text{ gal}}$
 Casing Volumes Purged 3

Total Volume Purged (gal.) 8486 gal

Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (µmhos)	Pump Rate (gpm)	Comments	
9:27					5	PUMP ON FOR 1 MIN.	
9:28					3		
9:31	6.04	69	13.2	0.582		11 gal - TURBID <small>ORANGE</small>	
9:35	6.16	-10	15.1	0.525		23 gal - CLEAR	
9:38	6.10	-10	15.1	0.501		29 gal - CLEAR	
9:43	6.05	-10	15.3	0.488		44 gal	
9:48	6.09	-10	14.9	0.575		59 gal	
9:52	6.18	-10	15.5	0.535		71 gal	
9:55	6.13	-10	15.7	0.534		80 gal	
9:57							SAMPLED

Notes: -10 FOR TURB. = OUT OF RANGE

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: JPL Pasadena Well ID: MW-15
 Project No: 00HW019 Equipment: GRUNDFOS PEDI FLO
 Date: 2/1/02
 Personnel: MES/JNT Contractor: SOTA

	Before	Reference Point	After
Depth to Water (ft.)	28.90	TOC	28.90
Depth to Sediment (ft.)	NM		
Thickness of Sediment (ft.)			

Depth of Well (ft.) 74'
 Diameter of Casing (ft.) 4"
 Water Column Height (ft.) 45.1'

Casing Volume (gal.) = $\pi(\text{Casing Diam. [ft.]} / 2)^2 (\text{Water Column Ht. [ft.]}) 7.48 \text{ gal./ft}^3 = \frac{29.5 \text{ gal}}{3} \times 3 = 88.5$
 Casing Volumes Purged 3

Total Volume Purged (gal.) 90 gal.

Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (µmhos)	Pump Rate (gpm)	Comments
847						START PUMP @ 3gpm
849	6.30	6	14.2	0.575	3	6 gal - CLEAR
853	6.39	-1	14.9	0.543		18 gal - CLEAR
857	6.37	0	15.1	0.550		30 gal.
903	6.35	2	15.3	0.549		48 gal.
907	6.33	-2	15.8	0.543		60 gal.
912	6.36	0	15.6	0.547		75 gal
917	6.37	0	15.7	0.548		90 gal.

Notes: SAMPLED @ 917

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: JPL Pasadena Well ID: MW-6
 Project No: 00HW019 Equipment: GRUNDFOS REDIFLO
 Date: 2/1/02
 Personnel: M&S/SNT Contractor: SOTA

	Before	Reference Point	After
Depth to Water (ft.)	199.50	TOC	199.50
Depth to Sediment (ft.)	NM		
Thickness of Sediment (ft.)			

Depth of Well (ft.)

245'

Diameter of Casing (ft.)

24.54"

Water Column Height (ft.)

45.5'

Casing Volume (gal.) = $\pi(\text{Casing Diam. [ft.]/2})^2 (\text{Water Column Ht. [ft.]}) 7.48 \text{ gal./ft}^3 =$ 30 gal
 Casing Volumes Purged 3

Total Volume Purged (gal.) 90 gal.

Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (µmhos)	Pump Rate (gpm)	Comments
946						START PUMP @ 29PM
950	6.05	338	17.7	1.16	2	8 gal. - WHITE CLOUDY TURBID *
954	6.02	12	17.1	1.20		16 gal. - CLEAR *
959	5.97	14	17.4	1.18		26 gal. - CLEAR
1001	5.98	16	17.9	1.18		30 gal. - CLEAR
1006	6.00	2013	17.2	1.17		40 gal. - CLEAR
1011	6.02	11	17.1	1.18		50 gal. - CLEAR
1016	6.07	14	17.3	1.17		60 gal. - CLEAR
1021	6.02	13	16.9	1.17		70 gal. - CLEAR
1026	6.10	14	15.8	1.17		80 gal. - CLEAR
1031	6.05	14	16.2	1.16		90 gal. - CLEAR

Notes: SAMPLED @ 1031
* PURGE WATER EFFERVESCING

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: JPL Pasadena Well ID: MW-9
 Project No: 00HW019 Equipment: GRUNDOS REDIFLO
 Date: 2/4/02
 Personnel: MES/JWT Contractor: SOTA

	Before	Reference Point	After
Depth to Water (ft.)	18.43'	TOC	
Depth to Sediment (ft.)	NM		
Thickness of Sediment (ft.)			

Depth of Well (ft.) 68'
 Diameter of Casing (ft.) 4"
 Water Column Height (ft.) 49.57

Casing Volume (gal.) = $\pi(\text{Casing Diam. [ft.]} / 2)^2 (\text{Water Column Ht. [ft.]}) 7.48 \text{ gal./ft}^3 = \underline{32 \text{ gal}}$
 Casing Volumes Purged 3

Total Volume Purged (gal.) 98 gal

Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (µmhos)	Pump Rate (gpm)	Comments
1345					2	START PUMP @ 2gpm
1347	6.26	3	18.0	0.423		4 gal. - CLEAR
1350	6.24	1	17.9	0.420		10 gal.
1355	6.19	-1	18.0	0.417		20 gal.
1400	6.12	-1	18.0	0.417		30 gal.
1405	6.12	3	18.1	0.415		40 gal.
1410	6.07	0	17.8	0.412		50 gal.
1415	6.05	-1	17.8	0.413		60 gal.
1420	6.03	0	17.7	0.414		70 gal.
1425 1430	5.96	0	17.8	0.417		80 gal.
1430 1440	6.00	0	17.8	0.418		90 gal.
1434 1444	5.98	0	17.8	0.418		98 gal.

Notes: SAMPLED @ 1444 1734

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: JPL Pasadena Well ID: MW-1
 Project No: 00HW019 Equipment: GRUNDOS REDUCO
 Date: 12/2/4/02
 Personnel: MES/JNT Contractor: SOTA

	Before	Reference Point	After
Depth to Water (ft.)	22.66'	TOC	22.66'
Depth to Sediment (ft.)	NM		
Thickness of Sediment (ft.)			

Depth of Well (ft.) 120'
 Diameter of Casing (ft.) 4"
 Water Column Height (ft.) 97.34'
 Casing Volume (gal.) = $\pi(\text{Casing Diam. [ft.]} / 2)^2 (\text{Water Column Ht. [ft.]}) 7.48 \text{ gal./ft}^3 =$ 64 gal.
 Casing Volumes Purged 3
 Total Volume Purged (gal.) 192 gal.

Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (µmhos)	Pump Rate (gpm)	Comments
1128						START PUMP @ 3 gpm
1130	6.78	0	15.2	0.481	3	6 gal. - CLEAR
1134	6.77	-1	15.2	0.476	3	18 gal.
1138	6.80	-2	15.2	0.472	3	30 gal.
1143	6.79	-2	15.2	0.471	3	45 gal.
1148	6.83	-2	15.2	0.470	3	60 gal.
1153	6.85	-2	15.3	0.469	3	75 gal.
1158	6.86	-2	15.2	0.470	3	90 gal.
1203	6.86	-2	15.3	0.469	3	105 gal.
1208	6.80	-2	15.3	0.465	3	120 gal.
1213	6.80	-2	15.2	0.465	3	135 gal.
1218	6.83	-2	15.2	0.465	3	150 gal.
1223	6.75	-2	15.2	0.466	3	165 gal.
1228	6.78	-2	15.2	0.464	3	190 gal.

Notes: SAMPLED @ 1230

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: JPL Pasadena Well ID: MW-8
 Project No: 00HW019 Equipment: BRUNNEN PEDI.FLO
 Date: 2/6/02
 Personnel: MES/JRT/TAM Contractor: SOTA

	Before	Reference Point	After
Depth to Water (ft.)	161.10'	TOC	161.10
Depth to Sediment (ft.)	NM	—————	—————
Thickness of Sediment (ft.)	—————	—————	—————

Depth of Well (ft.) 205'
 Diameter of Casing (ft.) 4"
 Water Column Height (ft.) 43.9'

Casing Volume (gal.) = $\pi(\text{Casing Diam. [ft.]/2})^2 (\text{Water Column Ht. [ft.]}) 7.48 \text{ gal./ft}^3 =$ 29 gal
 Casing Volumes Purged 3

Total Volume Purged (gal.) 90 gal.

Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (µmhos)	Pump Rate (gpm)	Comments
1039						
1043						Pump Start @ 1.5 gpm
1047	6.13	13	18.3	0.470	1.5	6 gal. - CLEAR/NO ODOR
1055	6.27	2	18.8	0.476		18 gal.
1101	6.32	0	18.8	0.476		27 gal.
1107	6.33	0	18.4	0.472		36 gal.
1113	6.32	0	18.3	0.470		45 gal.
1119	6.36	-1	18.3	0.471		54 gal.
1125	6.34	-1	18.3	0.472		63 gal.
1131	6.34	-2	18.1	0.470		72 gal.
1137	6.34	-1	18.2	0.471		81 gal.
1143	6.33	0	18.2	0.471		90 gal.

Notes: WELL SAMPLED @ 1144

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: JPL Pasadena Well ID: MW-7
 Project No: 00HW019 Equipment: SUBMERSIBLE PUMP
 Date: 2/22/02 3 1/2" GRUNDFOS REDIFLO *
 Personnel: MES Contractor: SOTA ENVIR. TECH.

	Before	Ref. Point	After
Depth to Water (ft.)			
Depth to Sediment (ft.)			
Thickness of Sediment (ft.)			

* SEE NOTES

Depth of Well (ft.) 275'
 Diameter of Casing (ft.) 4"
 Water Column Height (ft.) ~50' * SEE NOTES
 Casing Volume (gal.) = $\pi(\text{Casing Diam. [ft.]} / 2)^2 (\text{Water Column Ht. [ft.]}) 7.48 \text{ gal./ft}^3 =$ 33 gal.
 Casing Volumes Purged 3 * SEE NOTES
 Total Volume Purged (gal.) 103 gal.

Time	Pump Rate (gpm)	Volume Purged (gal.)	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (mS/cm)	Comments
1127	4.8	5	7.82	-1	20.1	0.441	WATER IS CLEAR NO ODOR
1130	4.9	19	7.85	0	19.9	0.440	
1133		34	7.92	27	19.9	0.440	
1136		49	7.86	-1	19.9	0.441	
1139		64	7.87	0	19.8	0.441	
1142		78	7.90	0	19.8	0.441	
1145		93	7.86	-1	19.7	0.442	
1147		103	7.89	0	19.7	0.441	

Notes: * WELL HEAD NOT ACCESSIBLE FOR WATER LEVEL MEASUREMENTS DUE TO PILOT TREATMENT SYSTEM INSTALLATION. WATER LEVEL ESTIMATED BASED ON PREVIOUS MEASUREMENTS FOR CALCULATING PURGE VOLUME.