

APPENDIX E
PURGE LOGS

Well Development Log

Location: JPL		Well No.: MW-25 Screen 1 Date: 10-14-04			Project No.: G486048			Page 1 of 3		
Equipment:					Personnel:					
HORIBA U 10 <input type="checkbox"/>		HORIBA U22 <input checked="" type="checkbox"/>			D. Conner					
S/N:		S/N:			EXPOSURE MONITORING			WELL CONDITION		
FID/PHOTO VAC <input type="checkbox"/>		ORION 290A <input type="checkbox"/>								
INTERFACE PROBE <input type="checkbox"/>		OVA 128 <input type="checkbox"/>			Reading: _____NA_____PPM			Fair <input type="checkbox"/>		
HORIBA ORP <input type="checkbox"/>		WATER LEVEL <input type="checkbox"/>						Poor <input type="checkbox"/>		
Total Well Depth (ft bgs): 740		Screen Interval (ft bgs): 355-365								
Static Water Level: NA		Depth to Product: NA			Pump Type: Peristaltic <input type="checkbox"/>			Submersible <input checked="" type="checkbox"/>		
Water Column: NA		Product Layer: NA						Bladder Pump <input type="checkbox"/>		
Well Casing Diameter: 4"					Pump Rate: 9 gpm					
Borehole Diameter: NA		Multiplier: NA			Purge Start Time: 0830 HRS					
Low Flow Method <input type="checkbox"/>					Purge Stop Time: 1600 HRS					
Minimal Purge Sampling <input type="checkbox"/>					Total volume Purged: 3,015 Gal.					
Criteria used to stop development: Dry Well <input type="checkbox"/>					Parameter Stabilization <input checked="" type="checkbox"/>					
Time	Water Depth (btoc)	Volume Recovered (gal)	PH (units) +/- 0.2	Conductivity (mS/cm) +/- 5%	Turbidity (NTU) +/- 10%	Dissolved Oxygen (mg/l) +/- 0.2	Temp. (°C) +/- 3%	Salinity (%)	ORP (mV) +/- 20	Comments
0840	NA	NA	7.48	1.10	24.4	8.72	21.4	0.0	147	Transcribed from field notes
0852	NA	NA	7.47	1.10	20.6	9.05	21.4	0.0	142	
0910	NA	NA	7.45	1.07	14.42	8.69	21.4	0.0	149	
0930	NA	NA	7.48	1.13	849	9.08	21.7	0.1	153	First reading after zone surged
0941	NA	NA	7.50	1.09	76.6	9.06	21.6	0.0	150	
0952	NA	NA	7.45	1.07	89	9.22	21.6	0.0	158	
1008	NA	NA	7.41	1.13	660	11.64	21.8	0.0	157	First reading after zone surged
1022	NA	NA	7.40	1.12	88.6	12.08	21.7	0.1	166	

Well Development Log

Location: JPL		Well No.: MW-25 Screen 1 Date: 10-14-04			Project No.: G486048			Page 2 of 3		
Equipment:					Personnel:					
HORIBA U 10 <input type="checkbox"/>		HORIBA U22 <input checked="" type="checkbox"/>			D. Conner					
S/N:		S/N:			EXPOSURE MONITORING			WELL CONDITION		
FID/PHOTO VAC <input type="checkbox"/>		ORION 290A <input type="checkbox"/>								
INTERFACE PROBE <input type="checkbox"/>		OVA 128 <input type="checkbox"/>			Reading: _____NA_____PPM			Fair <input type="checkbox"/>		
HORIBA ORP <input type="checkbox"/>		WATER LEVEL <input type="checkbox"/>						Poor <input type="checkbox"/>		
Total Well Depth (ft bgs): 740		Screen Interval (ft bgs): 355-365								
Static Water Level: NA		Depth to Product: NA			Pump Type: Peristaltic <input type="checkbox"/>			Submersible <input checked="" type="checkbox"/>		
Water Column: NA		Product Layer: NA						Bladder Pump <input type="checkbox"/>		
Well Casing Diameter: 4"					Pump Rate: 7 gpm					
Borehole Diameter:		Multiplier:			Purge Start Time: 0830 HRS					
Low Flow Method <input type="checkbox"/>					Purge Stop Time: 1600 HRS					
Minimal Purge Sampling <input type="checkbox"/>					Total volume Purged: 3,015 Gal.					
Criteria used to stop development: Dry Well <input type="checkbox"/>					Parameter Stabilization <input checked="" type="checkbox"/>					
Time	Water Depth (btoc)	Volume Recovered (gal)	PH (units) +/- 0.2	Conductivity (mS/cm) +/- 5%	Turbidity (NTU) +/- 10%	Dissolved Oxygen (mg/l) +/- 0.2	Temp. (°C) +/- 3%	Salinity (%)	ORP (mV) +/- 20	Comments
1033	NA	NA	7.43	1.08	42.5	11.95	21.7	0.0	167	
1052	NA	NA	7.33	1.16	132	9.46	21.8	0.0	136	
1130	NA	NA	7.39	1.18	569	8.59	22.7	0.1	153	First reading after zone surged
1159	NA	NA	7.40	1.13	92.7	11.98	21.9	0.1	143	
1212	NA	NA	7.41	1.06	58.4	11.90	21.9	0.0	130	
1223	NA	NA	7.46	1.15	688	14.01	21.8	0.0	147	First reading after zone surged
1240	NA	NA	7.38	1.11	136	12.21	21.7	0.0	167	
1256	NA	NA	7.46	1.06	193	12.49	21.7	0.0	168	

Well Development Log

Location: JPL		Well No.: MW-25 Screen 1 Date: 10-14-04			Project No.: G486048			Page 3 of 3		
Equipment:					Personnel:					
HORIBA U 10 <input type="checkbox"/>		HORIBA U22 <input checked="" type="checkbox"/>			D. Conner					
S/N:		S/N:			EXPOSURE MONITORING			WELL CONDITION		
FID/PHOTO VAC <input type="checkbox"/>		ORION 290A <input type="checkbox"/>								
INTERFACE PROBE <input type="checkbox"/>		OVA 128 <input type="checkbox"/>			Reading: _____NA_____PPM			Fair <input type="checkbox"/>		
HORIBA ORP <input type="checkbox"/>		WATER LEVEL <input type="checkbox"/>						Poor <input type="checkbox"/>		
Total Well Depth (ft bgs): 740		Screen Interval (ft bgs): 355-365								
Static Water Level: NA		Depth to Product: NA			Pump Type: Peristaltic <input type="checkbox"/>			Submersible <input checked="" type="checkbox"/>		
Water Column: NA		Product Layer: NA						Bladder Pump <input type="checkbox"/>		
Well Casing Diameter: 4"					Pump Rate: 7 gpm					
Borehole Diameter:		Multiplier:			Purge Start Time: 0830 HRS					
Low Flow Method <input type="checkbox"/>					Purge Stop Time: 1600 HRS					
Minimal Purge Sampling <input type="checkbox"/>					Total volume Purged: 3,015 Gal.					
Criteria used to stop development: Dry Well <input type="checkbox"/>					Parameter Stabilization <input checked="" type="checkbox"/>					
Time	Water Depth (btoc)	Volume Recovered (gal)	PH (units) +/- 0.2	Conductivity (mS/cm) +/- 5%	Turbidity (NTU) +/- 10%	Dissolved Oxygen (mg/l) +/- 0.2	Temp. (°C) +/- 3%	Salinity (%)	ORP (mV) +/- 20	Comments
1313	NA	NA	7.42	1.04	59.9	12.85	21.6	0.0	189	
1328	NA	NA	7.33	1.17	565	15.82	21.5	0.0	184	First reading after zone surged
1348	NA	NA	7.43	1.02	253	12.47	21.5	0.0	144	
1400	NA	NA	7.39	1.07	59.4	15.12	21.5	0.0	144	
1415	NA	NA	7.48	0.90	103	11.46	21.8	0.1	169	First reading after zone surged
1440	NA	NA	7.43	1.06	59.9	12.65	21.5	0.0	149	
1500	NA	NA	7.40	1.11	133	12.83	21.5	0.0	160	
1520	NA	NA	7.35	1.13	59.3	12.87	21.5	0.1	153	

Well Purge Log

Location: JPL		Well No.: MW-25 Screen 1 Date: 11-04-04			Project No.: G486048			Page 1 of 2		
Equipment:				Personnel:						
HORIBA U 10 <input type="checkbox"/>		HORIBA U22 <input checked="" type="checkbox"/>		D. Conner						
S/N:		S/N:		T. Worthington						
FID/PHOTO VAC <input type="checkbox"/>		ORION 290A <input type="checkbox"/>		EXPOSURE MONITORING			WELL CONDITION			
INTERFACE PROBE <input type="checkbox"/>		OVA 128 <input type="checkbox"/>					Background: _____NA_____PPM			Good <input checked="" type="checkbox"/>
HORIBA ORP <input type="checkbox"/>		WATER LEVEL <input type="checkbox"/>		Reading: _____NA_____PPM			Fair <input type="checkbox"/>			
Total Well Depth (ft bgs): 740		Screen Interval (ft bgs): 355-365						Poor <input type="checkbox"/>		
Static Water Level: NA		Depth to Product: NA		Pump Type: Peristaltic <input type="checkbox"/>			Submersible <input checked="" type="checkbox"/>			
Water Column: NA		Product Layer: NA					Bladder Pump <input type="checkbox"/>			
Well Casing Diameter: 4"				Pump Rate: 7 gpm						
Borehole Diameter: NA		Multiplier: NA		Purge Start Time: 0710 HRS						
Low Flow Method <input type="checkbox"/>				Purge Stop Time: 0935 HRS						
Minimal Purge Sampling <input type="checkbox"/>				Total volume Purged: 1,015 Gal.						
Criteria used to stop purging: Dry Well <input type="checkbox"/>				Parameter Stabilization <input checked="" type="checkbox"/>						
Time	Water Depth (btoc)	Volume Recovered (gal)	PH (units) +/- 0.2	Conductivity (mS/cm) +/- 5%	Turbidity (NTU) +/- 10%	Dissolved Oxygen (mg/l) +/- 0.2	Temp. (°C) +/- 3%	Salinity (%)	ORP (mV) +/- 20	Comments
0859	NA	NA	7.47	0.719	5.78	9.04	21.2	0	83	Transcribed from field notes
0902	NA	NA	7.47	0.718	5.17	9.18	21.2	0	84	
0905	NA	NA	7.47	0.720	5.28	8.73	21.2	0	83	
0908	NA	NA	7.47	0.716	5.59	8.61	21.2	0	70	
0911	NA	NA	7.47	0.713	5.61	8.57	21.2	0	69	
0914	NA	NA	7.47	0.708	5.76	8.44	21.2	0	70	
0917	NA	NA	7.47	0.714	4.71	8.48	21.3	0	73	
0920	NA	NA	7.47	0.719	4.77	8.44	21.3	0	72	

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Well Development / Purge Log

Location: JPL		Well No.: MW-25 Screen 1 Date: 11-04-04			Project No.: G486048			Page 2 of 2		
Equipment:					Personnel:					
HORIBA U 10 <input type="checkbox"/>		HORIBA U22 <input checked="" type="checkbox"/>			D. Conner					
S/N:		S/N:			T. Worthington					
FID/PHOTO VAC <input type="checkbox"/>		ORION 290A <input type="checkbox"/>			EXPOSURE MONITORING			WELL CONDITION		
INTERFACE PROBE <input type="checkbox"/>		OVA 128 <input type="checkbox"/>								
HORIBA ORP <input type="checkbox"/>		WATER LEVEL <input type="checkbox"/>			Reading: _____ NA _____ PPM			Fair <input type="checkbox"/>		
Total Well Depth (ft bgs): 740		Screen Interval (ft bgs): 355-365						Poor <input type="checkbox"/>		
Static Water Level: NA		Depth to Product: NA			Pump Type: Peristaltic <input type="checkbox"/>			Submersible <input checked="" type="checkbox"/>		
Water Column: NA		Product Layer: NA						Bladder Pump <input type="checkbox"/>		
Well Casing Diameter: 4"					Pump Rate: 7 gpm					
Borehole Diameter: _____					Multiplier: _____					
Low Flow Method <input type="checkbox"/>					Purge Start Time: 0710 HRS					
Minimal Purge Sampling <input type="checkbox"/>					Purge Stop Time: 0935 HRS					
					Total volume Purged: 1,015 Gal.					
Criteria used to stop purging / development: Dry Well <input type="checkbox"/>					Parameter Stabilization <input checked="" type="checkbox"/>					
Time	Water Depth (btoc)	Volume Recovered (gal)	PH (units) +/- 0.2	Conductivity (mS/cm) +/- 5%	Turbidity (NTU) +/- 10%	Dissolved Oxygen (mg/l) +/- 0.2	Temp. (°C) +/- 3%	Salinity (%)	ORP (mV) +/- 20	Comments
0923	NA	NA	7.47	0.717	4.83	8.43	21.3	0	73	
Sample Collected: 0930 HRS										

Well Development Log

Location: JPL		Well No.: MW-25 Screen 2 Date: 10-18-04			Project No.: G486048			Page 1 of 2		
Equipment:					Personnel:					
HORIBA U 10 <input type="checkbox"/>		HORIBA U22 <input checked="" type="checkbox"/>			D. Conner					
S/N:		S/N:			EXPOSURE MONITORING			WELL CONDITION		
FID/PHOTO VAC <input type="checkbox"/>		ORION 290A <input type="checkbox"/>								
INTERFACE PROBE <input type="checkbox"/>		OVA 128 <input type="checkbox"/>			Background: _____NA_____PPM			Good <input checked="" type="checkbox"/>		
HORIBA ORP <input type="checkbox"/>		WATER LEVEL <input type="checkbox"/>			Reading: _____NA_____PPM			Fair <input type="checkbox"/>		
Total Well Depth (ft bgs): 740		Screen Interval (ft bgs): 420-430						Poor <input type="checkbox"/>		
Static Water Level: NA		Depth to Product: NA			Pump Type: Peristaltic <input type="checkbox"/>			Submersible <input checked="" type="checkbox"/>		
Water Column: NA		Product Layer: NA						Bladder Pump <input type="checkbox"/>		
Well Casing Diameter: 4"					Pump Rate: 7 gpm					
Borehole Diameter: NA Multiplier: NA					Purge Start Time: 0830 (10/15/04) HRS					
Low Flow Method <input type="checkbox"/>					Purge Stop Time: 1655 HRS					
Minimal Purge Sampling <input type="checkbox"/>					Total volume Purged: 8,622 Gal.					
Criteria used to stop development: Dry Well <input type="checkbox"/>					Parameter Stabilization <input checked="" type="checkbox"/>					
Time	Water Depth (btoc)	Volume Recovered (gal)	PH (units) +/- 0.2	Conductivity (mS/cm) +/- 5%	Turbidity (NTU) +/- 10%	Dissolved Oxygen (mg/l) +/- 0.2	Temp. (°C) +/- 3%	Salinity (%)	ORP (mV) +/- 20	Comments
0950	NA	NA	7.59	0.90	386	9.89	21.4	0.0	127	Transcribed from field notes
1020	NA	NA	7.59	0.752	30.7	10.46	21.4	0.0	121	
1050	NA	NA	7.59	0.750	105	10.79	21.4	0.0	136	
1120	NA	NA	7.54	0.748	82.1	10.01	21.4	0.0	93	
1245	NA	NA	7.62	0.749	143	9.76	21.2	0.0	76	
1315	NA	NA	7.61	1.09	16.51	11.52	21.2	0.0	85	
1345	NA	NA	7.57	0.90	17.82	11.22	21.3	0.0	102	
1415	NA	NA	7.63	1.10	7.1	11.04	21.3	0.0	126	

Well Purge Log

Location: JPL		Well No.: MW-25 Screen 2 Date: 11-04-04			Project No.: G486048			Page 1 of 2		
Equipment:					Personnel:					
HORIBA U 10 <input type="checkbox"/>		HORIBA U22 <input checked="" type="checkbox"/>			D. Conner					
S/N:		S/N:			T. Worthington					
FID/PHOTO VAC <input type="checkbox"/>		ORION 290A <input type="checkbox"/>			EXPOSURE MONITORING			WELL CONDITION		
INTERFACE PROBE <input type="checkbox"/>		OVA 128 <input type="checkbox"/>								
HORIBA ORP <input type="checkbox"/>		WATER LEVEL <input type="checkbox"/>			Reading: _____NA_____PPM			Fair <input type="checkbox"/>		
Total Well Depth (ft bgs): 740		Screen Interval (ft bgs): 420-430						Poor <input type="checkbox"/>		
Static Water Level: NA		Depth to Product: NA			Pump Type: Peristaltic <input type="checkbox"/>			Submersible <input checked="" type="checkbox"/>		
Water Column: NA		Product Layer: NA						Bladder Pump <input type="checkbox"/>		
Well Casing Diameter: 4"					Pump Rate: 7 gpm					
Borehole Diameter: NA		Multiplier: NA			Purge Start Time: 0950 HRS					
Low Flow Method <input type="checkbox"/>					Purge Stop Time: 1425 HRS					
Minimal Purge Sampling <input type="checkbox"/>					Total volume Purged: 1,925 Gal.					
Criteria used to stop purging: Dry Well <input type="checkbox"/>					Parameter Stabilization <input checked="" type="checkbox"/>					
Time	Water Depth (btoc)	Volume Recovered (gal)	PH (units) +/- 0.2	Conductivity (mS/cm) +/- 5%	Turbidity (NTU) +/- 10%	Dissolved Oxygen (mg/l) +/- 0.2	Temp. (°C) +/- 3%	Salinity (%)	ORP (mV) +/- 20	Comments
1324	NA	NA	7.49	0.715	5.33	10.46	21.2	0	64	Transcribed from field notes
1327	NA	NA	7.49	0.719	6.36	10.45	21.2	0	66	
1330	NA	NA	7.49	0.719	6.97	10.74	21.2	0	69	
1342	NA	NA	7.49	0.717	6.25	10.38	21.2	0	66	
1400	NA	NA	7.49	0.723	4.58	10.63	21.2	0	73	
1403	NA	NA	7.48	0.725	5.10	10.54	21.2	0	43	
1406	NA	NA	7.49	0.719	5.31	10.50	21.2	0	42	
1409	NA	NA	7.49	0.729	4.13	10.55	21.2	0	70	

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Well Development / Purge Log

Location: JPL		Well No.: MW-25 Screen 1 Date: 11-04-04			Project No.: G486048			Page 2 of 2		
Equipment:					Personnel:					
HORIBA U 10 <input type="checkbox"/>		HORIBA U22 <input checked="" type="checkbox"/>			D. Conner					
S/N:		S/N:			T. Worthington					
FID/PHOTO VAC <input type="checkbox"/>		ORION 290A <input type="checkbox"/>			EXPOSURE MONITORING			WELL CONDITION		
INTERFACE PROBE <input type="checkbox"/>		OVA 128 <input type="checkbox"/>								
HORIBA ORP <input type="checkbox"/>		WATER LEVEL <input type="checkbox"/>			Reading: _____NA_____PPM			Fair <input type="checkbox"/>		
Total Well Depth (ft bgs): 740		Screen Interval (ft bgs): 355-365						Poor <input type="checkbox"/>		
Static Water Level: NA		Depth to Product: NA			Pump Type: Peristaltic <input type="checkbox"/>			Submersible <input checked="" type="checkbox"/>		
Water Column: NA		Product Layer: NA						Bladder Pump <input type="checkbox"/>		
Well Casing Diameter: 4"					Pump Rate: 7 gpm					
Borehole Diameter:		Multiplier:			Purge Start Time: 0950 HRS					
Low Flow Method <input type="checkbox"/>					Purge Stop Time: 1425 HRS					
Minimal Purge Sampling <input type="checkbox"/>					Total volume Purged: 1,925 Gal.					
Criteria used to stop purging / development: Dry Well <input type="checkbox"/>					Parameter Stabilization <input checked="" type="checkbox"/>					
Time	Water Depth (btoc)	Volume Recovered (gal)	PH (units) +/- 0.2	Conductivity (mS/cm) +/- 5%	Turbidity (NTU) +/- 10%	Dissolved Oxygen (mg/l) +/- 0.2	Temp. (°C) +/- 3%	Salinity (%)	ORP (mV) +/- 20	Comments
1412	NA	NA	7.49	0.729	4.29	10.56	21.2	0	72	
1415	NA	NA	7.49	0.729	4.04	10.56	21.2	0	75	
										Sample Collected: 1420 HRS

Well Development Log

Location: JPL		Well No.: MW-25 Screen 3 Date: 10-19-04			Project No.: G486048			Page 1 of 2		
Equipment:					Personnel:					
HORIBA U 10 <input type="checkbox"/>		HORIBA U22 <input checked="" type="checkbox"/>			D. Conner					
S/N:		S/N:			EXPOSURE MONITORING			WELL CONDITION		
FID/PHOTO VAC <input type="checkbox"/>		ORION 290A <input type="checkbox"/>								
INTERFACE PROBE <input type="checkbox"/>		OVA 128 <input type="checkbox"/>			Reading: _____NA_____PPM			Fair <input type="checkbox"/>		
HORIBA ORP <input type="checkbox"/>		WATER LEVEL <input type="checkbox"/>						Poor <input type="checkbox"/>		
Total Well Depth (ft bgs): 740		Screen Interval (ft bgs): 500-510								
Static Water Level: NA		Depth to Product: NA			Pump Type: Peristaltic <input type="checkbox"/>			Submersible <input checked="" type="checkbox"/>		
Water Column: NA		Product Layer: NA						Bladder Pump <input type="checkbox"/>		
Well Casing Diameter: 4"					Pump Rate: 8 gpm					
Borehole Diameter: NA		Multiplier: NA			Purge Start Time: 0802 HRS					
Low Flow Method <input type="checkbox"/>					Purge Stop Time: 1653 HRS					
Minimal Purge Sampling <input type="checkbox"/>					Total volume Purged: 3,568 Gal.					
Criteria used to stop development: Dry Well <input type="checkbox"/>					Parameter Stabilization <input checked="" type="checkbox"/>					
Time	Water Depth (btoc)	Volume Recovered (gal)	PH (units) +/- 0.2	Conductivity (mS/cm) +/- 5%	Turbidity (NTU) +/- 10%	Dissolved Oxygen (mg/l) +/- 0.2	Temp. (°C) +/- 3%	Salinity (%)	ORP (mV) +/- 20	Comments
1215	NA	NA	7.44	0.759	371	7.92	21.2	0.0	173	Transcribed from field notes
1245	NA	NA	7.52	0.999	105	11.71	21.3	0.0	156	
1315	NA	NA	7.70	1.11	146	11.10	21.4	0.0	208	
1345	NA	NA	7.55	1.11	40.2	11.39	21.3	0.0	189	
1415	NA	NA	7.60	1.11	131	11.25	21.3	0.0	142	
1445	NA	NA	7.62	1.09	45	11.35	21.3	0.0	153	
1515	NA	NA	7.62	1.09	37.7	7.73	21.4	0.0	167	

Well Purge Log

Location: JPL		Well No.: MW-25 Screen 3 Date: 11-05-04			Project No.: G486048			Page 1 of 1		
Equipment:					Personnel:					
HORIBA U 10 <input type="checkbox"/>		HORIBA U22 <input checked="" type="checkbox"/>			D. Conner					
S/N:		S/N:			T. Worthington					
FID/PHOTO VAC <input type="checkbox"/>		ORION 290A <input type="checkbox"/>			EXPOSURE MONITORING			WELL CONDITION		
INTERFACE PROBE <input type="checkbox"/>		OVA 128 <input type="checkbox"/>								
HORIBA ORP <input type="checkbox"/>		WATER LEVEL <input type="checkbox"/>			Reading: _____NA_____PPM			Fair <input type="checkbox"/>		
Total Well Depth (ft bgs): 740		Screen Interval (ft bgs): 500-510						Poor <input type="checkbox"/>		
Static Water Level: NA		Depth to Product: NA			Pump Type: Peristaltic <input type="checkbox"/>			Submersible <input checked="" type="checkbox"/>		
Water Column: NA		Product Layer: NA						Bladder Pump <input type="checkbox"/>		
Well Casing Diameter: 4"					Pump Rate: 7 gpm					
Borehole Diameter: NA					Multiplier: NA			Purge Start Time: Liquid Ring 1435 (11/4/05) HRS		
Low Flow Method <input type="checkbox"/>					Purge Stop Time: 0755 HRS					
Minimal Purge Sampling <input type="checkbox"/>					Total volume Purged: 1,540 Gal.					
Criteria used to stop purging: Dry Well <input type="checkbox"/>					Parameter Stabilization <input checked="" type="checkbox"/>					
Time	Water Depth (btoc)	Volume Recovered (gal)	PH (units) +/- 0.2	Conductivity (mS/cm) +/- 5%	Turbidity (NTU) +/- 10%	Dissolved Oxygen (mg/l) +/- 0.2	Temp. (°C) +/- 3%	Salinity (%)	ORP (mV) +/- 20	Comments
0730	NA	NA	7.31	0.743	2.48	10.46	21.2	0	64	Transcribed from field notes
0733	NA	NA	7.37	0.741	2.27	10.45	21.2	0	66	
0736	NA	NA	7.39	0.741	2.42	10.74	21.2	0	69	
0739	NA	NA	7.40	0.738	2.42	10.38	21.2	0	66	
0742	NA	NA	7.41	0.736	1.88	10.63	21.2	0	73	
0745	NA	NA	7.39	0.732	1.63	10.54	21.2	0	43	
										Sample Collected: 0750 HRS

Well Development Log

Location: JPL		Well No.: MW-25 Screen 4 Date: 10-22-04			Project No.: G486048			Page 1 of 2		
Equipment:					Personnel:					
HORIBA U 10 <input type="checkbox"/>		HORIBA U22 <input checked="" type="checkbox"/>			D. Conner					
S/N:		S/N:			EXPOSURE MONITORING			WELL CONDITION		
FID/PHOTO VAC <input type="checkbox"/>		ORION 290A <input type="checkbox"/>								
INTERFACE PROBE <input type="checkbox"/>		OVA 128 <input type="checkbox"/>			Background: _____NA_____PPM			Good <input checked="" type="checkbox"/>		
HORIBA ORP <input type="checkbox"/>		WATER LEVEL <input type="checkbox"/>			Reading: _____NA_____PPM			Fair <input type="checkbox"/>		
Total Well Depth (ft bgs): 740		Screen Interval (ft bgs): 630-640						Poor <input type="checkbox"/>		
Static Water Level: NA		Depth to Product: NA			Pump Type: Peristaltic <input type="checkbox"/>			Submersible <input checked="" type="checkbox"/>		
Water Column: NA		Product Layer: NA						Bladder Pump <input type="checkbox"/>		
Well Casing Diameter: 4"					Pump Rate: 7.7 gpm					
Borehole Diameter: NA					Multiplier: NA			Purge Start Time: 0718 (10/21/04) HRS		
Low Flow Method <input type="checkbox"/>					Purge Stop Time: 1515 HRS					
Minimal Purge Sampling <input type="checkbox"/>					Total volume Purged: 6,437 Gal.					
Criteria used to stop development: Dry Well <input type="checkbox"/>					Parameter Stabilization <input checked="" type="checkbox"/>					
Time	Water Depth (btoc)	Volume Recovered (gal)	PH (units) +/- 0.2	Conductivity (mS/cm) +/- 5%	Turbidity (NTU) +/- 10%	Dissolved Oxygen (mg/l) +/- 0.2	Temp. (°C) +/- 3%	Salinity (%)	ORP (mV) +/- 20	Comments
0845	NA	NA	7.39	0.754	229	8.10	21.2	0.0	170	Transcribed from field notes
0910	NA	NA	7.47	0.689	34.9	8.61	21.4	0.0	115	
1015	NA	NA	7.57	0.687	6.33	8.52	21.6	0.0	188	
1045	NA	NA	7.43	0.761	15.5	8.61	21.5	0.1	212	
1115	NA	NA	7.48	0.761	6.99	8.04	21.7	0.0	210	
1245	NA	NA	7.31	0.754	48.0	7.88	21.5	0.1	230	First reading after zone surged
1315	NA	NA	7.51	0.754	3.93	9.02	21.7	0.0	228	
1345	NA	NA	7.49	0.760	6.06	8.38	21.7	0.0	229	

Well Purge Log

Location: JPL		Well No.: MW-25 Screen 4 Date: 11-05-04			Project No.: G486048			Page 1 of 1		
Equipment:					Personnel:					
HORIBA U 10 <input type="checkbox"/>		HORIBA U22 <input checked="" type="checkbox"/>			D. Conner					
S/N:		S/N:			T. Worthington					
FID/PHOTO VAC <input type="checkbox"/>		ORION 290A <input type="checkbox"/>			EXPOSURE MONITORING Background: _____NA_____PPM Reading: _____NA_____PPM			WELL CONDITION		
INTERFACE PROBE <input type="checkbox"/>		OVA 128 <input type="checkbox"/>						Good <input checked="" type="checkbox"/>		
HORIBA ORP <input type="checkbox"/>		WATER LEVEL <input type="checkbox"/>						Fair <input type="checkbox"/>		
Total Well Depth (ft bgs): 740		Screen Interval (ft bgs): 630-640						Poor <input type="checkbox"/>		
Static Water Level: NA		Depth to Product: NA			Pump Type: Peristaltic <input type="checkbox"/>			Submersible <input checked="" type="checkbox"/>		
Water Column: NA		Product Layer: NA						Bladder Pump <input type="checkbox"/>		
Well Casing Diameter: 4"					Pump Rate: 7 gpm					
Borehole Diameter: NA		Multiplier: NA			Purge Start Time: 0815 HRS					
Low Flow Method <input type="checkbox"/>					Purge Stop Time: 1315 HRS					
Minimal Purge Sampling <input type="checkbox"/>					Total volume Purged: 2,100 Gal.					
Criteria used to stop purging: Dry Well <input type="checkbox"/>					Parameter Stabilization <input checked="" type="checkbox"/>					
Time	Water Depth (btoc)	Volume Recovered (gal)	PH (units) +/- 0.2	Conductivity (mS/cm) +/- 5%	Turbidity (NTU) +/- 10%	Dissolved Oxygen (mg/l) +/- 0.2	Temp. (°C) +/- 3%	Salinity (%)	ORP (mV) +/- 20	Comments
1245	NA	NA	7.52	0.740	5.35	8.82	21.3	0	43	Transcribed from field notes
1248	NA	NA	7.52	0.737	5.29	8.85	21.2	0	43	
1251	NA	NA	7.52	0.736	4.98	8.84	21.2	0	42	
1254	NA	NA	7.52	0.735	5.02	8.82	21.2	0	42	
1257	NA	NA	7.52	0.735	5.28	8.82	21.2	0	42	
1300	NA	NA	7.52	0.735	5.21	8.83	21.2	0	42	
1303	NA	NA	7.52	0.735	4.98	8.84	21.2	0	42	
1306	NA	NA	7.52	0.734	4.25	8.83	21.2	0	42	Sample Collected: 1310 HRS

Well Development Log

Location: JPL		Well No.: MW-25 Screen 5 Date: 10-28-04			Project No.: G486048			Page 1 of 2		
Equipment:					Personnel:					
HORIBA U 10 <input type="checkbox"/>		HORIBA U22 <input checked="" type="checkbox"/>			D. Conner					
S/N:		S/N:			EXPOSURE MONITORING			WELL CONDITION		
FID/PHOTO VAC <input type="checkbox"/>		ORION 290A <input type="checkbox"/>								
INTERFACE PROBE <input type="checkbox"/>		OVA 128 <input type="checkbox"/>			Background: _____NA_____PPM			Good <input checked="" type="checkbox"/>		
HORIBA ORP <input type="checkbox"/>		WATER LEVEL <input type="checkbox"/>			Reading: _____NA_____PPM			Fair <input type="checkbox"/>		
Total Well Depth (ft bgs): 740		Screen Interval (ft bgs): 710-720						Poor <input type="checkbox"/>		
Static Water Level: NA		Depth to Product: NA			Pump Type: Peristaltic <input type="checkbox"/>			Submersible <input checked="" type="checkbox"/>		
Water Column: NA		Product Layer: NA						Bladder Pump <input type="checkbox"/>		
Well Casing Diameter: 4"					Pump Rate: 6 gpm					
Borehole Diameter: NA Multiplier: NA					Purge Start Time: 1505 (10/25/04) HRS					
Low Flow Method <input type="checkbox"/>					Purge Stop Time: 1630 HRS					
Minimal Purge Sampling <input type="checkbox"/>					Total volume Purged: 6,911 Gal.					
Criteria used to stop development: Dry Well <input type="checkbox"/>					Parameter Stabilization <input checked="" type="checkbox"/>					
Time	Water Depth (btoc)	Volume Recovered (gal)	PH (units) +/- 0.2	Conductivity (mS/cm) +/- 5%	Turbidity (NTU) +/- 10%	Dissolved Oxygen (mg/l) +/- 0.2	Temp. (°C) +/- 3%	Salinity (%)	ORP (mV) +/- 20	Comments
0845	NA	NA	7.38	1.11	44.4	7.26	21.2	0.0	39	Transcribed from field notes
0915	NA	NA	7.50	0.742	15.75	7.41	21.2	0.0	62	
0945	NA	NA	7.58	0.745	23.0	9.51	21.2	0.0	58	
1015	NA	NA	7.44	0.749	10.86	8.89	21.3	0.0	62	
1045	NA	NA	7.47	0.737	10.74	9.02	21.3	0.0	54	
1115	NA	NA	7.46	0.735	31.7	9.23	21.3	0.0	69	
1245	NA	NA	7.48	0.760	78.0	8.75	21.2	0.0	41	
1315	NA	NA	7.47	0.90	21.9	8.33	21.4	0.0	70	

Well Purge Log

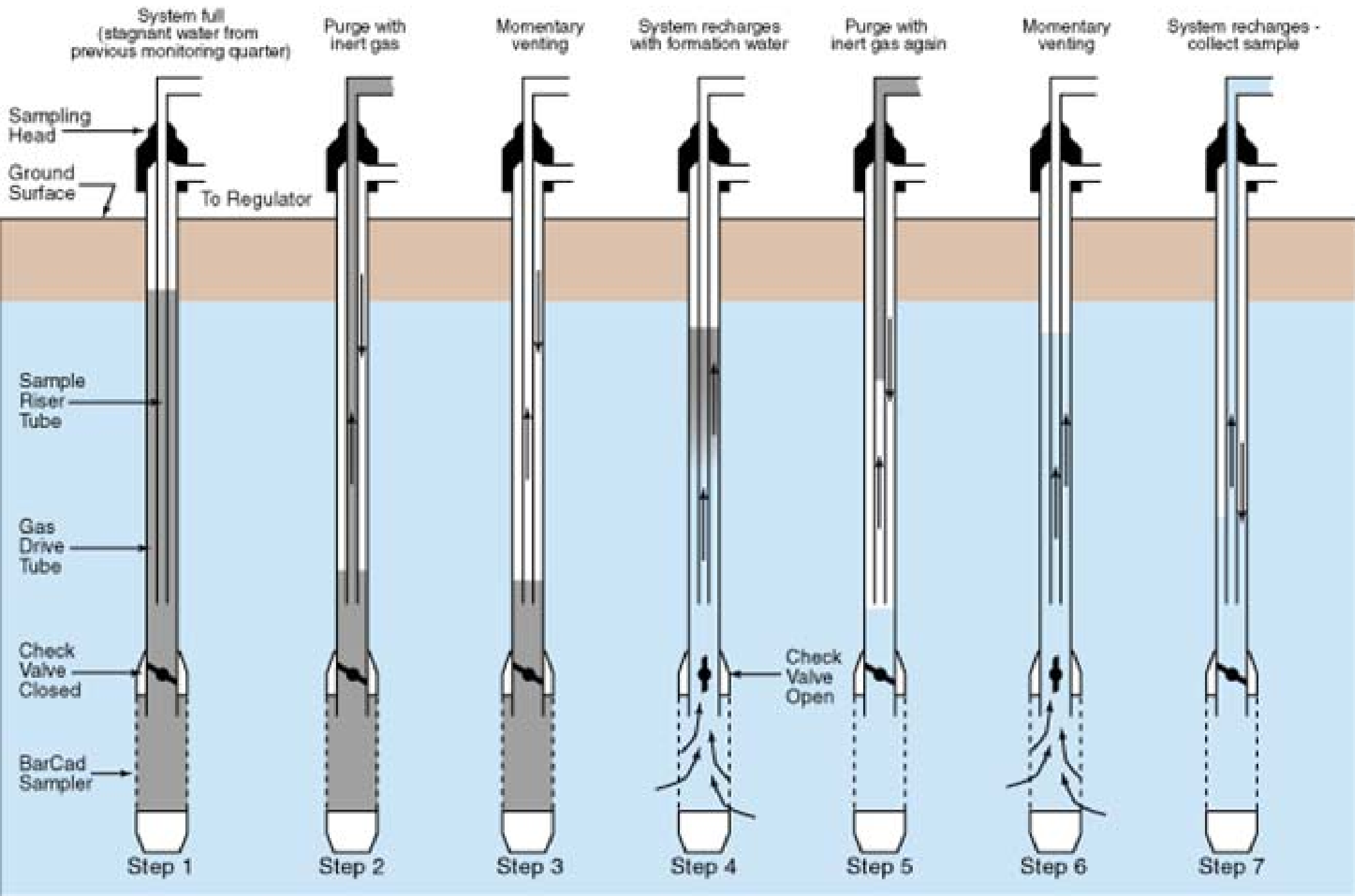
Location: JPL		Well No.: MW-25 Screen 5 Date: 11-05-04			Project No.: G486048			Page 1 of 1		
Equipment:				Personnel:						
HORIBA U 10 <input type="checkbox"/>		HORIBA U22 <input checked="" type="checkbox"/>		D. Conner						
S/N:		S/N:		T. Worthington						
FID/PHOTO VAC <input type="checkbox"/>		ORION 290A <input type="checkbox"/>		EXPOSURE MONITORING			WELL CONDITION			
INTERFACE PROBE <input type="checkbox"/>		OVA 128 <input type="checkbox"/>					Background: _____NA_____PPM			Good <input checked="" type="checkbox"/>
HORIBA ORP <input type="checkbox"/>		WATER LEVEL <input type="checkbox"/>		Reading: _____NA_____PPM			Fair <input type="checkbox"/>			
Total Well Depth (ft bgs): 740		Screen Interval (ft bgs): 710-720						Poor <input type="checkbox"/>		
Static Water Level: NA		Depth to Product: NA		Pump Type: Peristaltic <input type="checkbox"/>			Submersible <input checked="" type="checkbox"/>			
Water Column: NA		Product Layer: NA					Bladder Pump <input type="checkbox"/>			
Well Casing Diameter: 4"				Pump Rate: 7 gpm						
Borehole Diameter: NA		Multiplier: NA		Purge Start Time: 1320 HRS						
Low Flow Method <input type="checkbox"/>				Purge Stop Time: 1405 HRS						
Minimal Purge Sampling <input type="checkbox"/>				Total volume Purged: 315 Gal.						
Criteria used to stop purging: Dry Well <input type="checkbox"/>				Parameter Stabilization <input checked="" type="checkbox"/>						
Time	Water Depth (btoc)	Volume Recovered (gal)	PH (units) +/- 0.2	Conductivity (mS/cm) +/- 5%	Turbidity (NTU) +/- 10%	Dissolved Oxygen (mg/l) +/- 0.2	Temp. (°C) +/- 3%	Salinity (%)	ORP (mV) +/- 20	Comments
1349	NA	NA	7.61	0.736	4.91	10.29	21.3	0	41	Transcribed from field notes
1352	NA	NA	7.61	0.738	4.70	10.27	21.3	0	41	
1355	NA	NA	7.61	0.738	4.42	10.28	21.3	0	41	
										Sample Collected: 1400 HRS

APPENDIX F

MW-25 VIDEO LOG (Available on CD, by Request)

APPENDIX G

BARCAD PUMP OPERATIONAL DIAGRAM

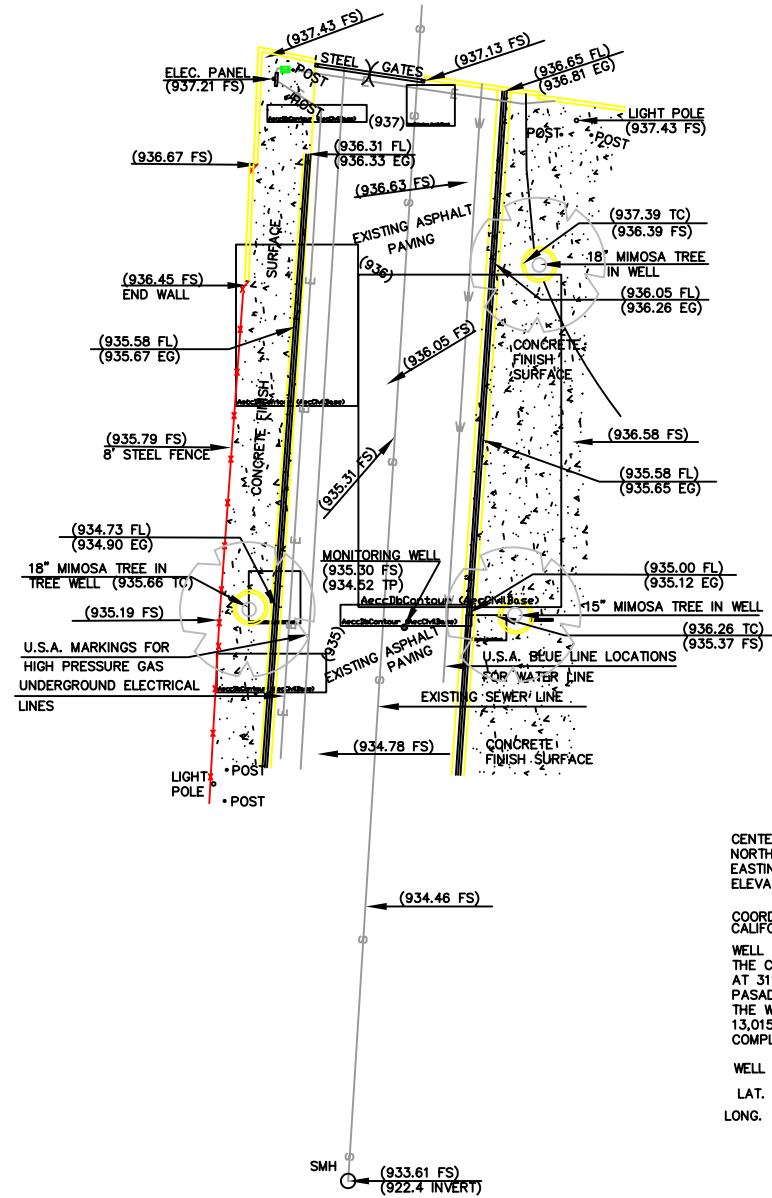


■ Stagnant Water □ Fresh Water

APPENDIX H
SURVEYOR'S REPORT



SCALE: 1" = 20'



CENTERLINE WELL COORDINATES:
 NORTHING 1,882,639.53
 EASTING 6,514,027.89
 ELEVATION = 934.52' TOP OF WELL CASING

COORDINATE BASED ON JPL ZONE 5 COORDINATE NET, CALIFORNIA STATE PLANE COORDINATE SYSTEM.

WELL IS LOCATED AT THE NORTHWEST CORNER OF THE CITY OF PASADENA WATER AND POWER FACILITY AT 311 WEST MOUNTAIN AVENUE IN THE CITY OF PASADENA.

THE WELL IS LOCATED SOUTH 24° 13' 10" EAST, 13,015.23' FROM THE ENTRANCE TO THE MAIN JPL COMPLEX.

WELL GEOGRAPHIC COORDINATES:

LAT. 34° 09' 55.715" NORTH
 LONG. 118° 09' 26.936" WEST

LEGEND:

THE FOLLOWING ABBREVIATIONS MAY APPEAR ON THIS MAP:
 TC = TOP OF CURB
 EG = EDGE OF GUTTER
 TW = TOP OF WALL
 FF = FINISH FLOOR
 PDS = POINT ON SLOPE
 GRD = GROUND ELEVATION
 (XXX.XX) = SPOT ELEVATION
 (XXXX) = EXISTING CONTOUR
 FS = FINISH SURFACE
 GB = GRADE BREAK
 FL = FLOWLINE GUTTER
 SMH = SEWER MANHOLE

BASIS OF BEARINGS:

ASTRONOMIC NORTH

BENCHMARK:

LOS ANGELES CO. BENCHMARK NO. Y 7709 BASELINE (1995) ADJ.
 RDBM TAG W CB 600MM N/O BCR @ NW COR LINCOLN AVE. & WOODBURY RD. 3.5 M N & 9M W/O C/L INT.
 ELEVATION = 1090.398' (U.S. FEET)
 ELEVATION = 332.354' (METER)

REVISIONS:

NO.	DESCRIPTION	APP.	DATE



PROJECT SURVEYOR:

EUGENE C. DUNCAN DATE
 ORIGINAL PLAN BEARS THE WET STAMP AND SIGNATURE OF THE PROJECT SURVEYOR. DIGITAL DATA IS SUBJECT TO CHANGE BY OTHERS AND SHOULD BE USED WITH CAUTION. CHANGES MADE BY W.S.S., INC. ARE NOTED IN THE REVISION BLOCK HEREON.

PLANS PREPARED BY:

WESTERN STATES SURVEYING, INC.
 899 W. FOOTHILL BOULEVARD, SUITE 'E'
 MONROVIA, CA. 91016
 Phone: (626) 357-5144
 Fax: (626) 357-4255

CITY OF PASADENA

LIMITED TOPOGRAPHIC SURVEY OF MONITORING WELL SITE
 311 WEST MOUNTAIN AVENUE, CITY OF PASADENA,
 LOS ANGELES COUNTY, STATE OF CALIFORNIA

DESIGN:	N/A	CHECKED:	J.T.K.	DRAWN:	E.C.D.
SURVEY DATE:	DEC., 2004	JOB NO.:	WSS 04585	SHEET 1 OF 1	