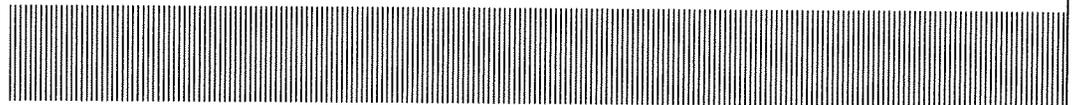


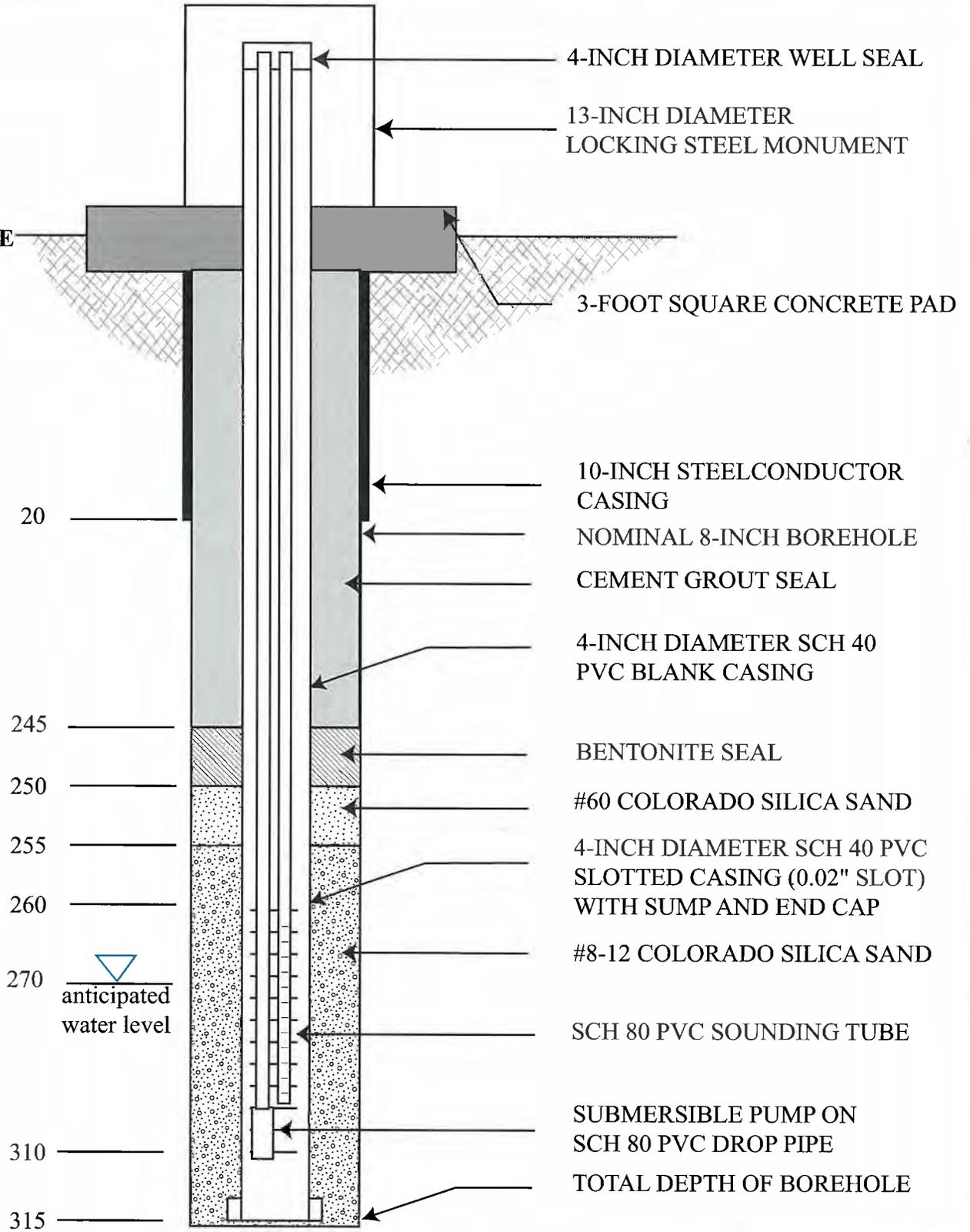
Universal Propulsion Company
2010 Annual Monitoring Report

Appendix A
Well Construction Diagram



DEPTH
(FT BGS)

SURFACE



NOT TO SCALE



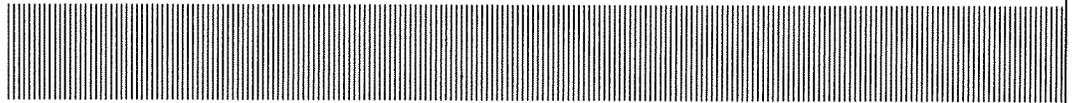
MW-11
As-Built Construction Diagram
2010 Annual Monitoring Report

July 2011

Appendix A

Universal Propulsion Company
2010 Annual Monitoring Report

Appendix B
IDW Documents





LIQUID ENVIRONMENTAL SOLUTIONS

NON-HAZARDOUS WASTE MANIFEST

73908

Profile Number

19789

Generator Name	Name: <u>W. W. ...</u>	Generator Address	Address: <u>...</u>
	Phone: ()		City: _____ State: _____ Zip: _____

Check with your state and local regulatory agencies for manifest retention requirements. NOTE: Many regulatory agencies require records to be kept on-site and available to review for up to 3 years.

Waste Type	<input type="checkbox"/> Grease Trap	<input type="checkbox"/> Grit Trap	<input type="checkbox"/> Septic/Chemical Toilet	<input checked="" type="checkbox"/> Non-Industrial	<input type="checkbox"/> Industrial	<input type="checkbox"/> Special
	<input type="checkbox"/> Used Cooking Oil	<input type="checkbox"/> Recyclable Used Oil				

I certify that the waste material removed from the above premises does not contain any radioactive, flammable, explosive, toxic or hazardous material ("Excluded Waste"). The term "hazardous material" is defined as any one or more pollutant, toxic substance, hazardous substance, solvent or oil as defined in or pursuant to the Resource Conservation and Recovery Act, the Comprehensive Environmental Response Compensation and Liability Act, the Federal Clean Water Act, or any other federal, state or local environmental law, regulation, ordinance, or rule, whether existing as of the date of this agreement or subsequently enacted. I also acknowledge that the Generator shall be responsible for any costs incurred by the Transporter or Disposal Facility in handling or proper disposal of any hazardous waste and that the Generator expressly agrees to defend, indemnify and hold harmless the Transporter from and against any and all damages, costs, fines and liabilities resulting from or arising out of any such hazardous waste.

Generator Rep. Name (please print)	<u>Ryan Schmitt</u>	Generator Rep. Signature	<u>[Signature]</u>
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Transporter Name	Name: _____ Phone: ()	Transporter Address	Address: _____ City: _____ State: _____ Zip: _____
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Waste Removed (Gallons)	<u>4200</u>	Date	Time

I certify that the information above is accurate, and that only the waste certified for removal by the Generator is contained in the servicing vehicle. I am aware that falsification of this manifest may result in prosecution.

Driver Name (please print)	<u>[Name]</u>	Driver Signature	<u>[Signature]</u>
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Disposal Facility	Liquid Environmental Solutions of Arizona	Address	5159 West Van Buren Street Phoenix, AZ 85043
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Waste Received (Gallons)		Date	Time

Facility Rep. Name (please print)		Facility Rep. Signature	
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WHITE - Generator Final Copy YELLOW - Liquid Environmental Solutions Copy GOLDENROD - Transporter Copy PINK - Generator 1st Copy



ENVIRONMENTAL SOLUTIONS

LIQUID ENVIRONMENTAL SOLUTIONS

NON-HAZARDOUS WASTE MANIFEST

50002

017747

Profile Number

195624

Generator Name	Name: <u>MPCO</u>	Generator Address	Address: <u>2501 S. ...</u>
	Phone: <u>(602) 241-1770</u>		City: <u>Phoenix</u> State: <u>AZ</u> Zip: <u></u>

Check with your state and local regulatory agencies for manifest retention requirements. NOTE: Many regulatory agencies require records to be kept on-site and available to review for up to 3 years.

Waste Type	<input type="checkbox"/> Grease Trap	<input type="checkbox"/> Grit Trap	<input type="checkbox"/> Septic/Chemical Toilet	<input checked="" type="checkbox"/> Non-Industrial	<input type="checkbox"/> Industrial	<input type="checkbox"/> Special
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I certify that the waste material removed from the above premises does not contain any radioactive, flammable, explosive, toxic or hazardous material ("Excluded Waste"). The term "hazardous material" is defined as any one or more pollutant, toxic substance, hazardous substance, solvent or oil as defined in or pursuant to the Resource Conservation and Recovery Act, the Comprehensive Environmental Response Compensation and Liability Act, the Federal Clean Water Act, or any other federal, state or local environmental law, regulation, ordinance, or rule, whether existing as of the date of this agreement or subsequently enacted. I also acknowledge that the Generator shall be responsible for any costs incurred by the Transporter or Disposal Facility in handling or proper disposal of any hazardous waste and that the Generator expressly agrees to defend, indemnify and hold harmless the Transporter from and against any and all damages, costs, fines and liabilities resulting from or arising out of any such hazardous waste.

Generator Rep. Name (please print)	<u>Gregory L. ...</u>	Generator Rep. Signature	<u>[Signature]</u>
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Transporter Name	Name: <u>MPCO</u>	Transporter Address	Address: <u>5159 West Van Buren Street</u>
	Phone: <u>(602) 278-6233</u>		City: <u>Phoenix</u> State: <u>AZ</u> Zip: <u>85043</u>

Waste Removed (Gallons)	<u>1000</u>	Date	Time
		<u>6-17-10</u>	

I certify that the information above is accurate, and that only the waste certified for removal by the Generator is contained in the servicing vehicle. I am aware that falsification of this manifest may result in prosecution.

Driver Name (please print)	<u>[Name]</u>	Driver Signature	<u>[Signature]</u>
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Disposal Facility	Liquid Environmental Solutions of Arizona	Address	5159 West Van Buren Street Phoenix, AZ 85043
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Waste Received (Gallons)		Date	Time

Facility Rep. Name (please print)		Facility Rep. Signature	
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WHITE - Generator Final Copy YELLOW - Liquid Environmental Solutions Copy GOLDENROD - Transporter Copy PINK - Generator 1st Copy



LIQUID ENVIRONMENTAL SOLUTIONS

NON-HAZARDOUS WASTE MANIFEST

50002

017747

Profile Number

175000

Generator Name	Name: <u>UPCO</u>	Generator Address	Address: <u>2501 Van Buren Ave</u>
	Phone: <u>(602) 271-1770</u>		City: <u>Phoenix</u> State: <u>AZ</u> Zip: <u></u>

Check with your state and local regulatory agencies for manifest retention requirements. NOTE: Many regulatory agencies require records to be kept on-site and available to review for up to 3 years.

Waste Type	<input type="checkbox"/> Grease Trap <input type="checkbox"/> Grit Trap <input type="checkbox"/> Septic/Chemical Toilet <input checked="" type="checkbox"/> Non-Industrial <input type="checkbox"/> Industrial <input type="checkbox"/> Special
------------	---

I certify that the waste material removed from the above premises does not contain any radioactive, flammable, explosive, toxic or hazardous material ("Excluded Waste"). The term "hazardous material" is defined as any one or more pollutant, toxic substance, hazardous substance, solvent or oil as defined in or pursuant to the Resource Conservation and Recovery Act, the Comprehensive Environmental Response Compensation and Liability Act, the Federal Clean Water Act, or any other federal, state or local environmental law, regulation, ordinance, or rule, whether existing as of the date of this agreement or subsequently enacted. I also acknowledge that the Generator shall be responsible for any costs incurred by the Transporter or Disposal Facility in handling or proper disposal of any hazardous waste and that the Generator expressly agrees to defend, indemnify and hold harmless the Transporter from and against any and all damages, costs, fines and liabilities resulting from or arising out of any such hazardous waste.

Generator Rep. Name (please print)	<u>Cony L. Miller</u>	Generator Rep. Signature	
------------------------------------	-----------------------	--------------------------	--

Transporter Name	Name: <u>MPK</u>	Transporter Address	Address: <u>3005 S 5th Ave</u>
	Phone: <u>(602) 271-6233</u>		City: <u>Phoenix</u> State: <u>AZ</u> Zip: <u>85018</u>

Waste Removed (Gallons)	<u>000</u>	Date	Time
		<u>6-15-0</u>	

I certify that the information above is accurate, and that only the waste certified for removal by the Generator is contained in the servicing vehicle. I am aware that falsification of this manifest may result in prosecution.

Driver Name (please print)	<u>Tom</u>	Driver Signature	
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Disposal Facility	Liquid Environmental Solutions of Arizona	Address	5159 West Van Buren Street Phoenix, AZ 85043
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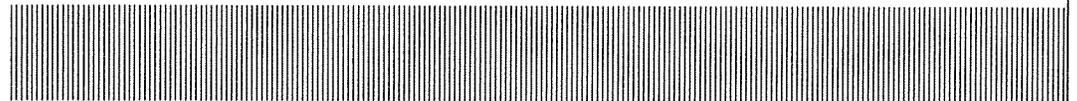
Waste Received (Gallons)		Date	Time

Facility Rep. Name (please print)		Facility Rep. Signature	
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WHITE - Generator Final Copy YELLOW - Liquid Environmental Solutions Copy GOLDENROD - Transporter Copy PINK - Generator 1st Copy

Universal Propulsion Company
2010 Annual Monitoring Report

Appendix C
Historic Water Level Data



Appendix C
Historic Water Level Data
UPCO and Private Wells

Well Identification	Date of Measurement	Measuring Point Elevation (ft amsl)	Depth to Water from Measuring Point (ft)	Groundwater Elevation (ft amsl)
MW-1	1/6/2004	1557.19	206.64	1350.55
	3/19/2004	1557.22	206.70	1350.57
	4/16/2004	1557.22	206.66	1350.61
	9/7/2004	1557.22	207.79	1349.43
	10/22/2004	1557.22	207.42	1349.80
	11/22/2004	1557.22	207.71	1349.51
	12/7/2004	1557.22	207.80	1349.42
	1/17/2005	1557.22	207.62	1349.60
	2/14/2005	1557.22	207.52	1349.70
	3/15/2005	1557.22	207.36	1349.86
	4/25/2005	1557.22	207.47	1349.75
	5/20/2005	1557.22	207.69	1349.53
	6/27/2005	1557.22	207.82	1349.40
	7/18/2005	1557.22	208.13	1349.09
	8/22/2005	1557.22	208.04	1349.18
	9/22/2005	1557.22	208.03	1349.19
	10/24/2005	1557.22	208.03	1349.19
	12/2/2005	1557.22	207.97	1349.25
	12/22/2005	1557.22	208.15	1349.07
	3/20/2006	1557.22	207.98	1349.24
	5/22/2006	1557.22	208.08	1349.14
	8/28/2006	1557.22	208.04	1349.18
	11/13/2006	1557.22	208.04	1349.18
	2/12/2007	1557.22	208.08	1349.14
	4/9/2007	1557.22	208.03	1349.19
	7/30/2007	1557.22	207.84	1349.38
	10/15/2007	1557.22	208.16	1349.06
	1/14/2008	1557.22	208.37	1348.85
	3/31/2008	1557.22	208.24	1348.98
	4/29/2008	1557.22	208.27	1348.95
	5/27/2008	1557.22	208.37	1348.85
	6/27/2008	1557.22	208.53	1348.69
7/28/2008	1557.22	208.50	1348.72	
8/29/2008	1557.22	208.55	1348.67	
9/20/2008	1557.22	208.44	1348.78	
10/14/2008	1557.22	208.37	1348.85	
11/21/2008	1557.22	208.36	1348.86	
12/15/2008	1557.22	208.44	1348.78	
1/12/2009	1557.22	208.41	1348.81	
2/16/2009	1557.22	208.47	1348.75	

Appendix C
Historic Water Level Data
UPCO and Private Wells

Well Identification	Date of Measurement	Measuring Point Elevation (ft amsl)	Depth to Water from Measuring Point (ft)	Groundwater Elevation (ft amsl)
MW-1	3/17/2009	1557.22	208.42	1348.80
	4/13/2009	1557.22	208.38	1348.84
	5/20/2009	1557.22	208.71	1348.51
	6/15/2009	1557.22	208.58	1348.64
	7/6/2009	1557.22	208.58	1348.64
	8/13/2009	1557.22	208.68	1348.54
	9/28/2009	1560.43	211.92	1348.51
	10/27/2009	1560.43	211.98	1348.45
	11/25/2009	1560.43	212.29	1348.14
	12/18/2009	1560.43	212.35	1348.08
	1/18/2010	1560.43	212.47	1347.96
	6/8/2010	1560.43	211.75	1348.68
6/22/2010	1560.43	211.76	1348.67	
MW-2	1/6/2004	1567.51	216.90	1350.61
	3/19/2004	1567.67	217.40	1350.27
	4/16/2004	1567.67	217.06	1350.61
	9/7/2004	1567.62	218.06	1349.56
	10/22/2004	1567.62	217.62	1350.00
	11/22/2004	1567.62	218.10	1349.52
	12/7/2004	1567.62	218.15	1349.47
	1/17/2005	1567.62	218.02	1349.60
	2/14/2005	1567.62	217.93	1349.69
	3/15/2005	1567.62	217.83	1349.79
	4/25/2005	1567.62	217.88	1349.74
	5/20/2005	1567.62	218.06	1349.56
	6/27/2005	1567.62	218.20	1349.42
	7/18/2005	1567.62	218.53	1349.09
	8/22/2005	1567.62	218.43	1349.19
	9/22/2005	1567.62	218.44	1349.18
	10/24/2005	1567.62	218.44	1349.18
	12/2/2005	1567.62	218.34	1349.28
	12/22/2005	1567.62	218.48	1349.14
	3/20/2006	1567.62	218.33	1349.29
	5/22/2006	1567.62	218.43	1349.19
	8/28/2006	1567.62	218.35	1349.27
	11/13/2006	1567.62	218.38	1349.24
2/12/2007	1567.62	218.48	1349.14	
4/9/2007	1567.62	218.41	1349.21	
7/30/2007	1567.62	218.19	1349.43	
10/15/2007	1567.62	218.45	1349.17	

Appendix C
Historic Water Level Data
UPCO and Private Wells

Well Identification	Date of Measurement	Measuring Point Elevation (ft amsl)	Depth to Water from Measuring Point (ft)	Groundwater Elevation (ft amsl)
MW-2	1/14/2008	1567.62	218.70	1348.92
	3/31/2008	1567.62	218.55	1349.07
	4/29/2008	1567.62	218.54	1349.08
	5/27/2008	1567.62	218.69	1348.93
	6/27/2008	1567.62	218.89	1348.73
	7/28/2008	1567.62	218.81	1348.81
	8/29/2008	1567.62	218.83	1348.79
	9/20/2008	1567.62	218.75	1348.87
	10/14/2008	1567.62	218.69	1348.93
	11/21/2008	1567.62	218.69	1348.93
	12/15/2008	1567.62	218.77	1348.85
	1/12/2009	1567.62	218.81	1348.81
	2/16/2009	1567.62	218.85	1348.77
	3/17/2009	1567.62	218.48	1349.14
	4/13/2009	1567.62	218.73	1348.89
	5/20/2009	1567.62	219.05	1348.57
	6/15/2009	1567.62	218.95	1348.67
	7/6/2009	1567.62	218.95	1348.67
	8/13/2009	1567.62	219.03	1348.59
	9/28/2009	1571.22	222.74	1348.48
	10/27/2009	1571.22	222.71	1348.51
	11/25/2009	1571.22	223.06	1348.16
	12/18/2009	1571.22	223.08	1348.14
	1/18/2010	1571.22	223.25	1347.97
6/8/2010	1571.22	222.57	1348.65	
6/22/2010	1571.22	222.57	1348.65	
MW-3	9/7/2004	1583.59	229.10	1354.50
	10/22/2004	1583.59	227.92	1355.67
	11/22/2004	1583.59	228.91	1354.68
	12/7/2004	1583.59	229.03	1354.56
	1/17/2005	1583.59	229.35	1354.24
	2/14/2005	1583.59	229.73	1353.86
	3/15/2005	1583.59	229.86	1353.73
	4/25/2005	1583.59	229.94	1353.65
	5/20/2005	1583.59	230.21	1353.38
	6/27/2005	1583.59	230.30	1353.29
	7/18/2005	1583.59	230.61	1352.98
	8/22/2005	1583.59	230.63	1352.96
	9/22/2005	1583.59	231.67	1351.92
	10/24/2005	1583.59	230.94	1352.65

Appendix C
Historic Water Level Data
UPCO and Private Wells

Well Identification	Date of Measurement	Measuring Point Elevation (ft amsl)	Depth to Water from Measuring Point (ft)	Groundwater Elevation (ft amsl)
MW-3	11/30/2005	1583.59	231.12	1352.47
	12/22/2005	1583.59	231.15	1352.44
	3/21/2006	1583.59	231.59	1352.00
	5/22/2006	1583.59	231.91	1351.68
	8/28/2006	1583.59	232.24	1351.35
	11/13/2006	1583.59	232.82	1350.77
	2/12/2007	1583.59	232.76	1350.83
	4/9/2007	1583.59	233.11	1350.48
	7/30/2007	1583.59	233.52	1350.07
	10/15/2007	1583.59	234.45	1349.14
	1/14/2008	1583.59	234.93	1348.66
	3/31/2008	1583.59	235.42	1348.17
	4/29/2008	1583.59	235.21	1348.38
	5/27/2008	1583.59	235.48	1348.11
	6/27/2008	1583.59	235.66	1347.93
	7/28/2008	1583.59	235.79	1347.80
	8/29/2008	1583.59	236.07	1347.52
	9/20/2008	1583.59	236.10	1347.49
	10/14/2008	1583.59	236.30	1347.29
	11/21/2008	1583.59	236.45	1347.14
	12/15/2008	1583.59	236.59	1347.00
	1/12/2009	1583.59	236.60	1346.99
	2/16/2009	1583.59	236.86	1346.73
	3/17/2009	1583.59	237.00	1346.59
	4/13/2009	1583.59	237.07	1346.52
	5/20/2009	1583.59	237.24	1346.35
	6/15/2009	1583.59	237.31	1346.28
	7/6/2009	1583.59	237.35	1346.24
	8/12/2009	1583.59	237.47	1346.12
	9/28/2009	1583.59	237.81	1345.78
	10/27/2009	1583.59	237.82	1345.77
	11/25/2009	1583.59	238.13	1345.46
12/18/2009	1583.59	238.13	1345.46	
1/18/2010	1583.59	238.35	1345.24	
6/8/2010	1583.59	239.06	1344.53	
6/22/2010	1583.59	239.16	1344.43	
MW-4	9/7/2004	1620.34	269.13	1351.21
	10/22/2004	1620.34	268.92	1351.42
	11/22/2004	1620.34	269.58	1350.76
	12/7/2004	1620.34	269.83	1350.51

Appendix C
Historic Water Level Data
UPCO and Private Wells

Well Identification	Date of Measurement	Measuring Point Elevation (ft amsl)	Depth to Water from Measuring Point (ft)	Groundwater Elevation (ft amsl)
MW-4	1/17/2005	1620.34	269.84	1350.50
	2/14/2005	1620.34	270.04	1350.30
	3/15/2005	1620.34	270.15	1350.19
	4/25/2005	1620.34	270.12	1350.22
	5/20/2005	1620.34	270.22	1350.12
	6/27/2005	1620.34	270.26	1350.08
	7/18/2005	1620.34	270.56	1349.78
	8/22/2005	1620.34	270.40	1349.94
	9/22/2005	1620.34	270.44	1349.90
	10/24/2005	1620.34	270.78	1349.56
	11/30/2005	1620.34	270.82	1349.52
	12/22/2005	1620.34	270.80	1349.54
	3/20/2006	1620.34	271.28	1349.06
	5/22/2006	1620.34	271.43	1348.91
	8/28/2006	1620.34	271.82	1348.52
	11/13/2006	1620.34	271.33	1349.01
	2/12/2007	1620.34	271.51	1348.83
	4/9/2007	1620.34	271.66	1348.68
	7/30/2007	1620.34	272.63	1347.71
	10/15/2007	1620.34	273.35	1346.99
	1/14/2008	1620.34	273.81	1346.53
	3/31/2008	1620.34	274.00	1346.34
	4/29/2008	1620.34	273.76	1346.58
	5/27/2008	1620.34	274.05	1346.29
	6/27/2008	1620.34	274.18	1346.16
	7/28/2008	1620.34	274.22	1346.12
	8/29/2008	1620.34	274.40	1345.94
	9/20/2008	1620.34	274.48	1345.86
	10/14/2008	1620.34	274.68	1345.66
	11/21/2008	1620.34	274.70	1345.64
	12/15/2008	1620.34	274.90	1345.44
	1/12/2009	1620.34	274.93	1345.41
2/16/2009	1620.34	274.78	1345.56	
3/17/2009	1620.34	275.07	1345.27	
4/13/2009	1620.34	275.04	1345.30	
5/20/2009	1620.34	275.19	1345.15	
6/15/2009	1620.34	275.23	1345.11	
7/6/2009	1620.34	275.26	1345.08	
8/12/2009	1620.34	275.39	1344.95	
9/28/2009	1620.34	275.50	1344.84	

Appendix C
Historic Water Level Data
UPCO and Private Wells

Well Identification	Date of Measurement	Measuring Point Elevation (ft amsl)	Depth to Water from Measuring Point (ft)	Groundwater Elevation (ft amsl)
MW-4	10/27/2009	1620.34	275.50	1344.84
	11/25/2009	1620.34	275.86	1344.48
	12/18/2009	1620.34	275.82	1344.52
	1/18/2010	1620.34	275.97	1344.37
	6/8/2010	1620.34	276.21	1344.13
	6/22/2010	1620.34	276.35	1343.99
MW-5	9/7/2004	1590.45	240.17	1350.28
	10/22/2004	1590.45	239.67	1350.78
	11/22/2004	1590.45	240.40	1350.05
	12/7/2004	1590.45	240.49	1349.96
	1/17/2005	1590.45	240.47	1349.98
	2/14/2005	1590.45	240.44	1350.01
	3/15/2005	1590.45	240.36	1350.09
	4/25/2005	1590.45	240.38	1350.07
	5/20/2005	1590.45	240.48	1349.97
	6/27/2005	1590.45	240.58	1349.87
	7/18/2005	1590.45	240.90	1349.55
	8/22/2005	1590.45	240.81	1349.64
	9/22/2005	1590.45	240.81	1349.64
	10/24/2005	1590.45	240.85	1349.60
	11/30/2005	1590.45	240.81	1349.64
	12/22/2005	1590.45	240.90	1349.55
	3/20/2006	1590.45	240.92	1349.53
	5/22/2006	1590.45	241.07	1349.38
	8/28/2006	1590.45	240.97	1349.48
	11/13/2006	1590.45	241.04	1349.41
	2/12/2007	1590.45	241.09	1349.36
	4/9/2007	1590.45	241.10	1349.35
	7/30/2007	1590.45	240.81	1349.64
	10/15/2007	1590.45	241.12	1349.33
	1/14/2008	1590.45	241.28	1349.17
	3/31/2008	1590.45	241.31	1349.14
	4/29/2008	1590.45	241.28	1349.17
	5/27/2008	1590.45	241.33	1349.12
	6/27/2008	1590.45	241.48	1348.97
	7/28/2008	1590.45	241.44	1349.01
8/29/2008	1590.45	241.45	1349.00	
9/20/2008	1590.45	241.48	1348.97	
10/14/2008	1590.45	241.43	1349.02	
11/21/2008	1590.45	241.45	1349.00	

Appendix C
Historic Water Level Data
UPCO and Private Wells

Well Identification	Date of Measurement	Measuring Point Elevation (ft amsl)	Depth to Water from Measuring Point (ft)	Groundwater Elevation (ft amsl)
MW-5	12/15/2008	1590.45	241.43	1349.02
	1/12/2009	1590.45	241.42	1349.03
	2/16/2009	1590.45	241.45	1349.00
	3/17/2009	1590.45	241.43	1349.02
	4/13/2009	1590.45	241.43	1349.02
	5/20/2009	1590.45	241.53	1348.92
	6/15/2009	1590.45	241.57	1348.88
	7/6/2009	1590.45	241.54	1348.91
	8/12/2009	1590.45	241.58	1348.87
	9/28/2009	1594.08	245.32	1348.76
	10/27/2009	1594.08	245.38	1348.70
	11/25/2009	1594.08	245.54	1348.54
	12/18/2009	1594.08	245.59	1348.49
	1/18/2010	1594.08	245.76	1348.32
	6/8/2010	1594.08	245.39	1348.69
6/22/2010	1594.08	245.38	1348.70	
MW-6	9/7/2004	1548.22	162.22	1386.00
	10/22/2004	1548.22	161.27	1386.95
	11/22/2004	1548.22	161.77	1386.45
	12/7/2004	1548.22	161.99	1386.23
	1/17/2005	1548.22	162.32	1385.90
	2/14/2005	1548.22	162.50	1385.72
	3/15/2005	1548.22	160.38	1387.84
	4/25/2005	1548.22	149.74	1398.48
	5/20/2005	1548.22	148.31	1399.91
	6/27/2005	1548.22	148.82	1399.40
	7/18/2005	1548.22	149.61	1398.61
	8/22/2005	1548.22	150.88	1397.34
	9/22/2005	1548.22	151.89	1396.33
	10/24/2005	1548.22	153.11	1395.11
	11/30/2005	1548.22	154.16	1394.06
	12/22/2005	1548.22	154.68	1393.54
	3/20/2006	1548.22	156.61	1391.61
	5/22/2006	1548.22	157.80	1390.42
	8/28/2006	1548.22	159.64	1388.58
	11/13/2006	1548.22	161.11	1387.11
	2/12/2007	1548.22	161.95	1386.27
4/9/2007	1548.22	161.63	1386.59	
7/30/2007	1548.22	162.92	1385.30	
10/15/2007	1548.22	163.95	1384.27	

Appendix C
Historic Water Level Data
UPCO and Private Wells

Well Identification	Date of Measurement	Measuring Point Elevation (ft amsl)	Depth to Water from Measuring Point (ft)	Groundwater Elevation (ft amsl)
MW-6	1/14/2008	1548.22	164.94	1383.28
	3/31/2008	1548.22	165.42	1382.80
	4/29/2008	1548.22	164.28	1383.94
	5/27/2008	1548.22	163.05	1385.17
	6/27/2008	1548.22	162.08	1386.14
	7/28/2008	1548.22	161.50	1386.72
	8/29/2008	1548.22	161.30	1386.92
	9/20/2008	1548.22	161.33	1386.89
	10/14/2008	1548.22	161.48	1386.74
	11/21/2008	1548.22	161.71	1386.51
	12/15/2008	1548.22	161.89	1386.33
	1/12/2009	1548.22	162.28	1385.94
	2/16/2009	1548.22	162.43	1385.79
	3/17/2009	1548.22	162.81	1385.41
	4/13/2009	1548.22	162.83	1385.39
	5/20/2009	1548.22	162.78	1385.44
	6/15/2009	1548.22	162.57	1385.65
	7/6/2009	1548.22	162.50	1385.72
	8/12/2009	1548.22	162.64	1385.58
	9/28/2009	1551.65	166.25	1385.40
	10/27/2009	1551.65	166.33	1385.32
	11/25/2009	1551.65	167.02	1384.63
	12/18/2009	1551.65	167.10	1384.55
1/18/2010	1551.65	167.37	1384.28	
6/8/2010	1551.65	162.94	1388.71	
6/22/2010	1551.65	162.17	1389.48	
MW-7	10/22/2004	1541.35	157.21	1384.14
	11/22/2004	1541.35	154.14	1387.21
	12/7/2004	1541.35	154.55	1386.80
	1/17/2005	1541.35	155.02	1386.33
	2/14/2005	1541.35	155.20	1386.15
	3/15/2005	1541.35	155.48	1385.87
	4/25/2005	1541.35	155.56	1385.79
	5/20/2005	1541.35	155.56	1385.79
	6/27/2005	1541.35	155.60	1385.75
	7/18/2005	1541.35	155.94	1385.41
	8/22/2005	1541.35	156.09	1385.26
	9/22/2005	1541.35	156.37	1384.98
	10/24/2005	1541.35	157.01	1384.34
11/30/2005	1541.35	157.41	1383.94	

Appendix C
Historic Water Level Data
UPCO and Private Wells

Well Identification	Date of Measurement	Measuring Point Elevation (ft amsl)	Depth to Water from Measuring Point (ft)	Groundwater Elevation (ft amsl)
MW-7	12/22/2005	1541.35	157.73	1383.62
	3/20/2006	1541.35	158.83	1382.52
	5/22/2006	1541.35	159.39	1381.96
	8/28/2006	1541.35	159.54	1381.81
	11/13/2006	1541.35	159.48	1381.87
	2/12/2007	1541.35	159.37	1381.98
	4/9/2007	1541.35	159.30	1382.05
	7/30/2007	1541.35	159.48	1381.87
	10/15/2007	1541.35	160.12	1381.23
	1/14/2008	1541.35	160.61	1380.74
	3/31/2008	1541.35	160.53	1380.82
	4/29/2008	1541.35	160.46	1380.89
	5/27/2008	1541.35	160.63	1380.72
	6/27/2008	1541.35	160.83	1380.52
	7/28/2008	1541.35	160.92	1380.43
	8/29/2008	1541.35	160.85	1380.50
	9/20/2008	1541.35	160.98	1380.37
	10/14/2008	1541.35	161.21	1380.14
	11/21/2008	1541.35	161.22	1380.13
	12/15/2008	1541.35	161.19	1380.16
	1/12/2009	1541.35	161.39	1379.96
	2/16/2009	1541.35	161.17	1380.18
	3/17/2009	1541.35	161.42	1379.93
	4/13/2009	1541.35	161.39	1379.96
	5/20/2009	1541.35	161.49	1379.86
	6/15/2009	1541.35	161.57	1379.78
	7/6/2009	1541.35	161.58	1379.77
	8/12/2009	1541.35	161.71	1379.64
	9/28/2009	1541.35	161.71	1379.64
	10/27/2009	1541.35	161.70	1379.65
11/25/2009	1541.35	162.06	1379.29	
12/18/2009	1541.35	162.07	1379.28	
1/18/2010	1541.35	162.03	1379.32	
6/8/2010	1541.35	162.04	1379.31	
6/22/2010	1541.35	162.16	1379.19	
MW-8	10/22/2004	1542.18	193.21	1348.97
	11/22/2004	1542.18	192.27	1349.91
	12/7/2004	1542.18	192.29	1349.89
	1/17/2005	1542.18	192.27	1349.91
	2/14/2005	1542.18	192.29	1349.89

Appendix C
Historic Water Level Data
UPCO and Private Wells

Well Identification	Date of Measurement	Measuring Point Elevation (ft amsl)	Depth to Water from Measuring Point (ft)	Groundwater Elevation (ft amsl)
MW-8	3/15/2005	1542.18	192.27	1349.91
	4/25/2005	1542.18	192.29	1349.89
	5/20/2005	1542.18	192.50	1349.68
	6/27/2005	1542.18	192.57	1349.61
	7/18/2005	1542.18	192.88	1349.30
	8/22/2005	1542.18	192.90	1349.28
	9/22/2005	1542.18	192.84	1349.34
	10/24/2005	1542.18	192.89	1349.29
	11/30/2005	1542.18	192.84	1349.34
	12/22/2005	1542.18	192.91	1349.27
	3/20/2006	1542.18	192.83	1349.35
	5/22/2006	1542.18	192.97	1349.21
	8/28/2006	1542.18	192.95	1349.23
	11/13/2006	1542.18	192.98	1349.20
	2/12/2007	1542.18	193.01	1349.17
	4/9/2007	1542.18	192.79	1349.39
	7/30/2007	1542.18	192.71	1349.47
	10/15/2007	1542.18	193.18	1349.00
	1/14/2008	1542.18	193.32	1348.86
	3/31/2008	1542.18	193.17	1349.01
	4/29/2008	1542.18	193.08	1349.10
	5/27/2008	1542.18	193.25	1348.93
	6/27/2008	1542.18	193.39	1348.79
	7/28/2008	1542.18	193.36	1348.82
	8/29/2008	1542.18	193.37	1348.81
	9/20/2008	1542.18	193.35	1348.83
	10/14/2008	1542.18	193.37	1348.81
	11/21/2008	1542.18	193.38	1348.80
	12/15/2008	1542.18	193.35	1348.83
	1/12/2009	1542.18	193.34	1348.84
	2/16/2009	1542.18	193.37	1348.81
	3/17/2009	1542.18	193.38	1348.80
4/13/2009	1542.18	193.33	1348.85	
5/20/2009	1542.18	193.55	1348.63	
6/15/2009	1542.18	193.51	1348.67	
7/6/2009	1542.18	193.49	1348.69	
8/12/2009	1542.18	193.52	1348.66	
9/28/2009	1542.18	193.70	1348.48	
10/27/2009	1542.18	193.80	1348.38	
11/25/2009	1542.18	193.99	1348.19	

Appendix C
Historic Water Level Data
UPCO and Private Wells

Well Identification	Date of Measurement	Measuring Point Elevation (ft amsl)	Depth to Water from Measuring Point (ft)	Groundwater Elevation (ft amsl)
MW-8	12/18/2009	1542.18	194.08	1348.10
	1/18/2010	1542.18	194.20	1347.98
	6/8/2010	1542.18	193.56	1348.62
	6/22/2010	1542.18	193.62	1348.56
MW-9	2/14/2005	1565.60	215.29	1350.31
	3/15/2005	1565.60	215.36	1350.24
	4/25/2005	1565.60	215.34	1350.26
	5/20/2005	1565.60	215.36	1350.24
	6/27/2005	1565.60	215.41	1350.19
	7/18/2005	1565.60	215.68	1349.92
	8/22/2005	1565.60	215.57	1350.03
	9/22/2005	1565.60	215.59	1350.01
	10/24/2005	1565.60	215.72	1349.88
	11/30/2005	1565.60	215.70	1349.90
	12/22/2005	1565.60	215.64	1349.96
	3/20/2006	1565.60	215.82	1349.78
	5/22/2006	1565.60	216.03	1349.57
	8/28/2006	1565.60	215.95	1349.65
	11/13/2006	1565.60	216.07	1349.53
	2/12/2007	1565.60	216.12	1349.48
	4/9/2007	1565.60	216.19	1349.41
	7/30/2007	1565.60	215.83	1349.77
	10/15/2007	1565.60	216.16	1349.44
	1/14/2008	1565.60	216.30	1349.30
	3/31/2008	1565.60	216.26	1349.34
	4/29/2008	1565.60	216.15	1349.45
	5/27/2008	1565.60	216.24	1349.36
	6/27/2008	1565.60	216.37	1349.23
	7/28/2008	1565.60	216.34	1349.26
	8/29/2008	1565.60	216.38	1349.22
	9/20/2008	1565.60	216.42	1349.18
	10/14/2008	1565.60	216.46	1349.14
	11/21/2008	1565.60	216.51	1349.09
	12/15/2008	1565.60	216.52	1349.08
	1/12/2009	1565.60	216.53	1349.07
	2/16/2009	1565.60	216.52	1349.08
3/17/2009	1565.60	216.56	1349.04	
4/13/2009	1565.60	216.54	1349.06	
5/20/2009	1565.60	216.58	1349.02	
6/15/2009	1565.60	216.60	1349.00	

Appendix C
Historic Water Level Data
UPCO and Private Wells

Well Identification	Date of Measurement	Measuring Point Elevation (ft amsl)	Depth to Water from Measuring Point (ft)	Groundwater Elevation (ft amsl)
MW-9	7/6/2009	1565.60	216.61	1348.99
	8/12/2009	1565.60	216.62	1348.98
	9/28/2009	1565.60	216.68	1348.92
	10/27/2009	1565.60	216.62	1348.98
	11/25/2009	1565.60	216.80	1348.80
	12/18/2009	1565.60	216.85	1348.75
	1/18/2010	1565.60	216.94	1348.66
	6/8/2010	1565.60	216.85	1348.75
	6/22/2010	1565.60	216.92	1348.68
MW-10	2/14/2005	1536.11	149.92	1386.19
	3/15/2005	1536.11	149.71	1386.40
	4/25/2005	1536.11	149.56	1386.55
	5/20/2005	1536.11	149.33	1386.78
	6/27/2005	1536.11	149.04	1387.07
	7/18/2005	1536.11	149.08	1387.03
	8/22/2005	1536.11	149.02	1387.09
	9/22/2005	1536.11	148.88	1387.23
	10/24/2005	1536.11	149.20	1386.91
	11/30/2005	1536.11	149.27	1386.84
	12/22/2005	1536.11	149.33	1386.78
	3/20/2006	1536.11	149.54	1386.57
	5/22/2006	1536.11	149.66	1386.45
	8/28/2006	1536.11	150.05	1386.06
	11/13/2006	1536.11	150.45	1385.66
	2/12/2007	1536.11	150.63	1385.48
	4/9/2007	1536.11	150.75	1385.36
	7/30/2007	1536.11	150.88	1385.23
	10/15/2007	1536.11	151.45	1384.66
	1/14/2008	1536.11	151.93	1384.18
	3/31/2008	1536.11	152.04	1384.07
	4/29/2008	1536.11	151.98	1384.13
	5/27/2008	1536.11	152.20	1383.91
	6/27/2008	1536.11	152.37	1383.74
	7/28/2008	1536.11	152.48	1383.63
	8/29/2008	1536.11	152.41	1383.70
	9/20/2008	1536.11	152.58	1383.53
	10/14/2008	1536.11	152.83	1383.28
11/21/2008	1536.11	152.88	1383.23	
12/15/2008	1536.11	152.87	1383.24	
1/12/2009	1536.11	153.14	1382.97	

Appendix C
Historic Water Level Data
UPCO and Private Wells

Well Identification	Date of Measurement	Measuring Point Elevation (ft amsl)	Depth to Water from Measuring Point (ft)	Groundwater Elevation (ft amsl)
MW-10	2/16/2009	1536.11	152.95	1383.16
	3/17/2009	1536.11	153.23	1382.88
	4/13/2009	1536.11	153.24	1382.87
	5/20/2009	1536.11	153.28	1382.83
	6/15/2009	1536.11	153.35	1382.76
	7/6/2009	1536.11	153.42	1382.69
	8/12/2009	1536.11	153.61	1382.50
	9/28/2009	1536.11	153.62	1382.49
	10/27/2009	1536.11	153.64	1382.47
	11/25/2009	1536.11	153.98	1382.13
	12/18/2009	1536.11	154.00	1382.11
	1/18/2010	1536.11	154.02	1382.09
	6/8/2010	1536.11	154.47	1381.64
6/22/2010	1536.11	154.54	1381.57	
MW-11	12/22/2005	1603.35	253.68	1349.67
	3/20/2006	1603.35	253.71	1349.64
	5/22/2006	1603.35	253.83	1349.52
	8/28/2006	1603.35	253.78	1349.57
	11/13/2006	1603.35	253.80	1349.55
	2/12/2007	1603.35	253.86	1349.49
	4/9/2007	1603.35	253.87	1349.48
	7/30/2007	1603.35	253.51	1349.84
	10/15/2007	1603.35	253.90	1349.45
	1/14/2008	1603.35	254.07	1349.28
	4/29/2008	1603.35	254.13	1349.22
	5/27/2008	1603.35	254.12	1349.23
	6/27/2008	1603.35	254.20	1349.15
	7/28/2008	1603.35	254.26	1349.09
	8/29/2008	1603.35	254.28	1349.07
	9/20/2008	1603.35	254.25	1349.10
	10/14/2008	1603.35	254.23	1349.12
	11/21/2008	1603.35	254.23	1349.12
	12/15/2008	1603.35	254.20	1349.15
	1/12/2009	1603.35	254.22	1349.13
	2/16/2009	1603.35	254.20	1349.15
	3/17/2009	1603.35	254.25	1349.10
4/13/2009	1603.35	254.24	1349.11	
5/20/2009	1603.35	254.32	1349.03	
6/15/2009	1603.35	254.35	1349.00	
7/6/2009	1603.35	254.35	1349.00	

Appendix C
Historic Water Level Data
UPCO and Private Wells

Well Identification	Date of Measurement	Measuring Point Elevation (ft amsl)	Depth to Water from Measuring Point (ft)	Groundwater Elevation (ft amsl)
MW-11	8/12/2009	1603.35	254.38	1348.97
	9/28/2009	1603.35	254.52	1348.83
	10/27/2009	1603.35	254.61	1348.74
	11/25/2009	1603.35	254.73	1348.62
	12/18/2009	1603.35	254.80	1348.55
	1/18/2010	1603.35	254.92	1348.43
	6/8/2010	1606.14	257.63	1348.51
	6/22/2010	1606.14	257.62	1348.52
MW-12	12/22/2005	1557.46	209.16	1348.30
	3/20/2006	1557.46	209.09	1348.37
	5/22/2006	1557.46	209.17	1348.29
	8/28/2006	1557.46	209.12	1348.34
	11/13/2006	1557.46	209.14	1348.32
	2/12/2007	1557.46	209.23	1348.23
	4/9/2007	1557.46	209.16	1348.30
	7/30/2007	1557.46	208.85	1348.61
	10/15/2007	1557.46	209.23	1348.23
	1/14/2008	1557.46	209.46	1348.00
	3/31/2008	1557.46	209.31	1348.15
	4/29/2008	1557.46	209.31	1348.15
	5/27/2008	1557.46	209.42	1348.04
	6/27/2008	1557.46	209.63	1347.83
	7/28/2008	1557.46	209.58	1347.88
	8/29/2008	1557.46	209.58	1347.88
	9/20/2008	1557.46	209.50	1347.96
	10/14/2008	1557.46	209.40	1348.06
	11/21/2008	1557.46	209.41	1348.05
	12/15/2008	1557.46	209.50	1347.96
	1/12/2009	1557.46	209.46	1348.00
	2/16/2009	1557.46	209.52	1347.94
	3/17/2009	1557.46	209.48	1347.98
	4/13/2009	1557.46	209.45	1348.01
	5/20/2009	1557.46	209.79	1347.67
	6/15/2009	1557.46	209.64	1347.82
	7/6/2009	1557.46	209.66	1347.80
	8/13/2009	1557.46	209.75	1347.71
9/28/2009	1560.91	213.59	1347.32	
10/27/2009	1560.91	213.61	1347.30	
11/25/2009	1560.91	213.94	1346.97	
12/18/2009	1560.91	213.99	1346.92	

Appendix C
Historic Water Level Data
UPCO and Private Wells

Well Identification	Date of Measurement	Measuring Point Elevation (ft amsl)	Depth to Water from Measuring Point (ft)	Groundwater Elevation (ft amsl)
MW-12	1/18/2010	1560.91	214.11	1346.80
	6/8/2010	1560.91	213.38	1347.53
	6/22/2010	1560.91	213.38	1347.53
MW-13	8/29/2008	1595.77	246.82	1348.95
	9/20/2008	1595.77	246.75	1349.02
	10/14/2008	1595.77	246.75	1349.02
	11/21/2008	1595.77	246.78	1348.99
	12/15/2008	1595.77	246.83	1348.94
	1/12/2009	1595.77	246.79	1348.98
	2/16/2009	1595.77	246.81	1348.96
	3/17/2009	1595.77	246.80	1348.97
	4/13/2009	1595.77	246.80	1348.97
	5/20/2009	1595.77	246.90	1348.87
	6/15/2009	1595.77	246.95	1348.82
	7/6/2009	1595.77	246.89	1348.88
	8/12/2009	1595.77	246.98	1348.79
	9/28/2009	1599.52	250.74	1348.78
	10/27/2009	1599.52	250.71	1348.81
	11/25/2009	1599.52	250.98	1348.54
	12/18/2009	1599.52	251.00	1348.52
	1/18/2010	1599.52	251.13	1348.39
	6/8/2010	1599.52	250.83	1348.69
	6/22/2010	1599.52	250.87	1348.65
MW-14	8/29/2008	1602.48	263.25	1339.23
	9/20/2008	1602.48	263.38	1339.10
	10/14/2008	1602.48	263.69	1338.79
	11/21/2008	1602.48	264.15	1338.33
	12/15/2008	1602.48	264.02	1338.46
	1/12/2009	1602.48	263.57	1338.91
	2/16/2009	1602.48	263.66	1338.82
	3/17/2009	1602.48	264.03	1338.45
	4/13/2009	1602.48	264.08	1338.40
	5/20/2009	1602.48	264.55	1337.93
	6/15/2009	1602.48	264.65	1337.83
	7/6/2009	1602.48	264.89	1337.59
	8/12/2009	1602.48	265.10	1337.38
	9/28/2009	1602.48	265.59	1336.89
	10/27/2009	1602.48	265.78	1336.70
11/25/2009	1602.48	266.72	1335.76	
12/18/2009	1602.48	265.98	1336.50	

Appendix C
Historic Water Level Data
UPCO and Private Wells

Well Identification	Date of Measurement	Measuring Point Elevation (ft amsl)	Depth to Water from Measuring Point (ft)	Groundwater Elevation (ft amsl)
MW-14	1/18/2010	1602.48	266.03	1336.45
	6/8/2010	1602.48	266.04	1336.44
	6/22/2010	1602.48	266.49	1335.99
MW-15	8/29/2008	1600.48	261.95	1338.53
	9/20/2008	1600.48	262.09	1338.39
	10/14/2008	1600.48	262.18	1338.30
	11/21/2008	1600.48	262.45	1338.03
	12/15/2008	1600.48	262.58	1337.90
	1/12/2009	1600.48	262.51	1337.97
	2/16/2009	1600.48	262.53	1337.95
	3/17/2009	1600.48	262.60	1337.88
	4/13/2009	1600.48	262.72	1337.76
	5/20/2009	1600.48	262.96	1337.52
	6/15/2009	1600.48	263.03	1337.45
	7/6/2009	1600.48	263.19	1337.29
	8/12/2009	1600.48	263.36	1337.12
	9/28/2009	1600.48	263.69	1336.79
	10/27/2009	1600.48	263.80	1336.68
	11/25/2009	1600.48	264.20	1336.28
	12/18/2009	1600.48	264.28	1336.20
	1/18/2010	1600.48	264.39	1336.09
	6/8/2010	1600.48	264.50	1335.98
6/22/2010	1600.48	264.68	1335.80	
MW-18	9/28/2009	1533.53	181.20	1352.33
	10/7/2009	1533.53	137.39	1396.14
	10/27/2009	1533.53	132.18	1401.35
	11/25/2009	1533.53	131.17	1402.36
	12/18/2009	1533.53	130.11	1403.42
	1/18/2010	1533.53	129.84	1403.69
	6/8/2010	1533.53	129.81	1403.72
	6/22/2010	1533.53	129.85	1403.68
PW-1	3/13/2008	1554.55	211.31	1343.24
	4/29/2008	1554.55	240.30	1314.25
	5/27/2008	1554.55	280.72	1273.83
	6/27/2008	1554.55	220.65	1333.90
	8/29/2008	1554.55	213.00	1341.55
	9/3/2008	1554.55	211.54	1343.01
	9/20/2008	1554.55	NM	NM
	10/14/2008	1554.55	210.93	1343.62
	11/21/2008	1554.55	270.60	1283.95

Appendix C
Historic Water Level Data
UPCO and Private Wells

Well Identification	Date of Measurement	Measuring Point Elevation (ft amsl)	Depth to Water from Measuring Point (ft)	Groundwater Elevation (ft amsl)
PW-1	12/15/2008	1554.55	305.95	1248.60
	1/12/2009	1554.55	223.60	1330.95
	2/16/2009	1554.55	211.37	1343.18
	3/17/2009	1554.55	211.00	1343.55
	4/13/2009	1554.55	209.26	1345.29
	5/20/2009	1554.55	214.21	1340.34
	6/15/2009	1554.55	209.89	1344.66
	8/12/2009	1554.55	262.80	1291.75
	9/28/2009	1554.55	376.20	1178.35
	10/27/2009	1554.55	219.60	1334.95
	11/25/2009	1554.55	345.45	1209.10
	12/18/2009	1554.55	355.78	1198.77
	1/18/2010	1554.55	213.10	1341.45
	6/8/2010	1554.55	208.96	1345.59
6/22/2010	1554.55	208.89	1345.66	
18 East Yearling	3/30/07	1596.79	NA	NA
	5/25/07	1596.79	NA	NA
	6/4/07	1596.79	NA	NA
	6/20/2007	1596.79	NA	NA
	7/30/2007	1596.79	NA	NA
	8/2/2007	1596.79	351.13	1245.66
	8/30/2007	1596.79	346.66	1250.13
	9/12/2007	1596.79	365.49	1231.30
	9/24/2007	1596.79	358.82	1237.97
	9/27/2007	1596.79	365.22	1231.57
	10/15/2007	1596.79	362.45	1234.34
	11/19/2007	1596.79	363.82	1232.97
	12/11/2007	1596.79	360.47	1236.32
	1/14/2008	1596.79	354.74	1242.05
	3/13/2008	1596.79	358.96	1237.83
	5/16/2008	1596.79	350.67	1246.12
	7/28/2008	1596.79	below transducer	NM
	8/29/2008	1596.79	258.19	1338.60
	10/14/2008	1596.79	362.65	1234.14
	12/3/2008	1596.79	358.64	1238.15
12/15/2008	1596.79	358.88	1237.91	
1/12/2009	1596.79	357.04	1239.75	
2/16/2009	1596.79	355.66	1241.13	
3/17/2009	1596.79	358.48	1238.31	
4/13/2009	1596.79	369.10	1227.69	

Appendix C
Historic Water Level Data
UPCO and Private Wells

Well Identification	Date of Measurement	Measuring Point Elevation (ft amsl)	Depth to Water from Measuring Point (ft)	Groundwater Elevation (ft amsl)
18 East Yearling	5/20/2009	1596.79	399.30	1197.49
	6/15/2009	1596.79	372.35	1224.44
	7/6/2009	1596.79	377.89	1218.90
	8/12/2009	1596.79	399.60	1197.19
	9/28/2009	1596.79	dry	dry
	10/27/2009	1596.79	dry	dry
	11/25/2009	1596.79	dry	dry
	12/18/2009	1596.79	392.78	1204.01
	1/18/2010	1596.79	dry	dry
	6/8/2010	1596.79	NA	NA
	6/22/2010	1596.79	NA	NA
218 East Yearling	3/30/2007	1617.01	325.20	1291.81
	5/25/07	1617.01	313.19	1303.82
	6/4/07	1617.01	325.92	1291.09
	6/20/2007	1617.01	317.50	1299.51
	7/30/2007	1617.01	NA	NA
	8/2/2007	1617.01	NA	NA
	8/30/2007	1617.01	313.80	1303.21
	9/12/2007	1617.01	334.26	1282.75
	9/24/2007	1617.01	NA	NA
	9/27/2007	1617.01	317.38	1299.63
	10/15/2007	1617.01	323.81	1293.20
	11/19/2007	1617.01	322.32	1294.69
	12/11/2007	1617.01	315.75	1301.26
	1/14/2008	1617.01	313.32	1303.69
	3/13/2008	1617.01	obstruction	NM
	5/16/2008	1617.01	344.85	1272.16
	7/28/2008	1617.01	316.35	1300.66
	8/29/2008	1617.01	329.46	1287.55
	10/14/2008	1617.01	340.00	1277.01
	12/3/2008	1617.01	317.34	1299.67
	12/15/2008	1617.01	313.89	1303.12
	1/12/2009	1617.01	310.40	1306.61
	2/16/2009	1617.01	314.42	1302.59
	3/17/2009	1617.01	311.95	1305.06
	4/13/2009	1617.01	311.63	1305.38
	5/20/2009	1617.01	332.30	1284.71
	6/15/2009	1617.01	321.86	1295.15
7/6/2009	1617.01	325.00	1292.01	
8/12/2009	1617.01	325.93	1291.08	

**Appendix C
Historic Water Level Data
UPCO and Private Wells**

Well Identification	Date of Measurement	Measuring Point Elevation (ft amsl)	Depth to Water from Measuring Point (ft)	Groundwater Elevation (ft amsl)
218 East Yearling	9/28/2009	1617.01	323.18	1293.83
	10/27/2009	1617.01	324.80	1292.21
	11/25/2009	1617.01	322.86	1294.15
	12/18/2009	1617.01	320.08	1296.93
	1/18/2010	1617.01	327.30	1289.71
	6/8/2010	1617.01	NA	NA
	6/22/2010	1617.01	NA	NA
520 East Yearling	3/30/07	1635.71	293.60	1342.11
	5/25/07	1635.71	293.68	1342.03
	6/4/07	1635.71	292.33	1343.38
	6/20/2007	1635.71	292.54	1343.17
	7/30/2007	1635.71	293.69	1342.02
	8/2/2007	1635.71	NA	NA
	8/30/2007	1635.71	292.04	1343.67
	9/12/2007	1635.71	294.56	1341.15
	9/24/2007	1635.71	294.59	1341.12
	9/27/2007	1635.71	295.18	1340.53
	10/15/2007	1635.71	294.94	1340.77
	11/19/2007	1635.71	295.66	1340.05
	12/11/2007	1635.71	295.41	1340.30
	1/14/2008	1635.71	295.30	1340.41
	3/13/2008	1635.71	294.71	1341.00
	5/16/2008	1635.71	295.80	1339.91
	7/28/2008	1635.71	296.54	1339.17
	8/29/2008	1635.71	305.50	1330.21
	10/14/2008	1635.71	297.20	1338.51
	12/3/2008	1635.71	297.37	1338.34
	12/15/2008	1635.71	297.42	1338.29
	1/12/2009	1635.71	296.90	1338.81
	2/16/2009	1635.71	296.90	1338.81
	3/17/2009	1635.71	297.42	1338.29
	4/13/2009	1635.71	299.90	1335.81
	5/20/2009	1635.71	298.10	1337.61
	6/15/2009	1635.71	298.18	1337.53
	7/6/2009	1635.71	311.26	1324.45
8/12/2009	1635.71	311.69	1324.02	
9/28/2009	1635.71	312.45	1323.26	
10/27/2009	1635.71	290.65	1345.06	
11/25/2009	1635.71	299.85	1335.86	
12/18/2009	1635.71	299.38	1336.33	

Appendix C
Historic Water Level Data
UPCO and Private Wells

Well Identification	Date of Measurement	Measuring Point Elevation (ft amsl)	Depth to Water from Measuring Point (ft)	Groundwater Elevation (ft amsl)
520 East Yearling	1/18/2010	1635.71	299.30	1336.41
	6/8/2010	1635.71	300.29	1335.42
	6/22/2010	1635.71	300.39	1335.32

Note:

Measured depth to water and calculated groundwater elevations at private wells may not represent actual static water levels because these are active pumping wells, subject to frequent water level fluctuations.

NM = Not measured

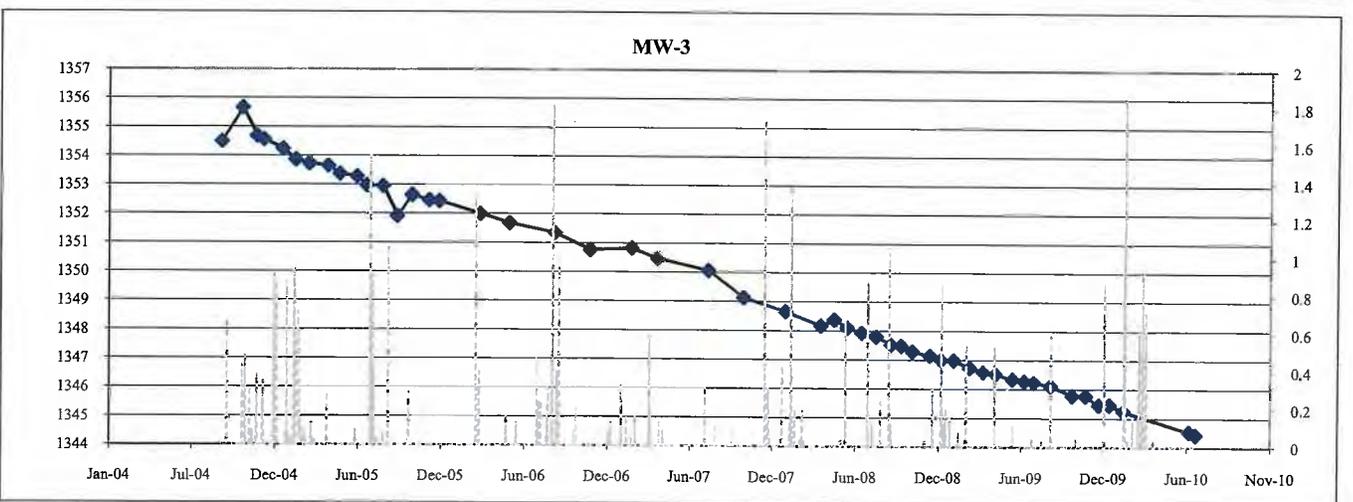
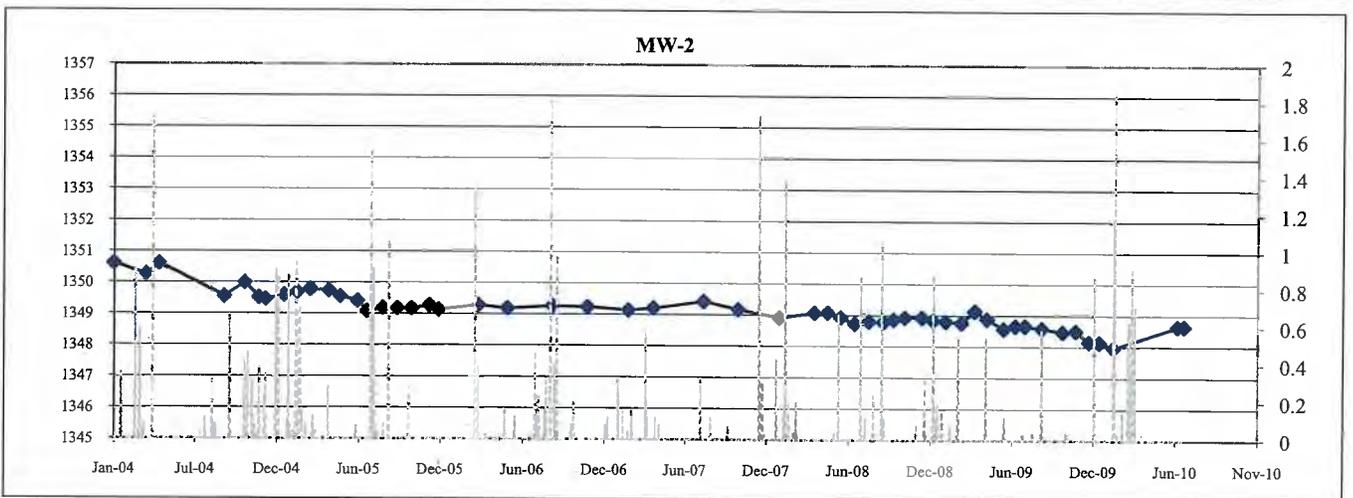
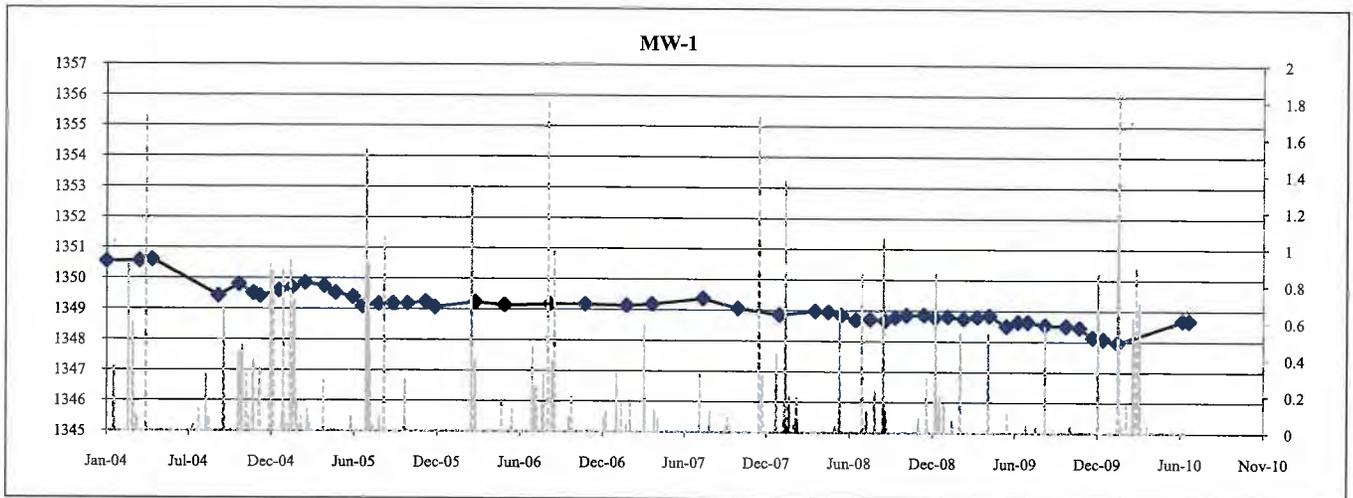
NA = No access

dry = Sounder did not detect water

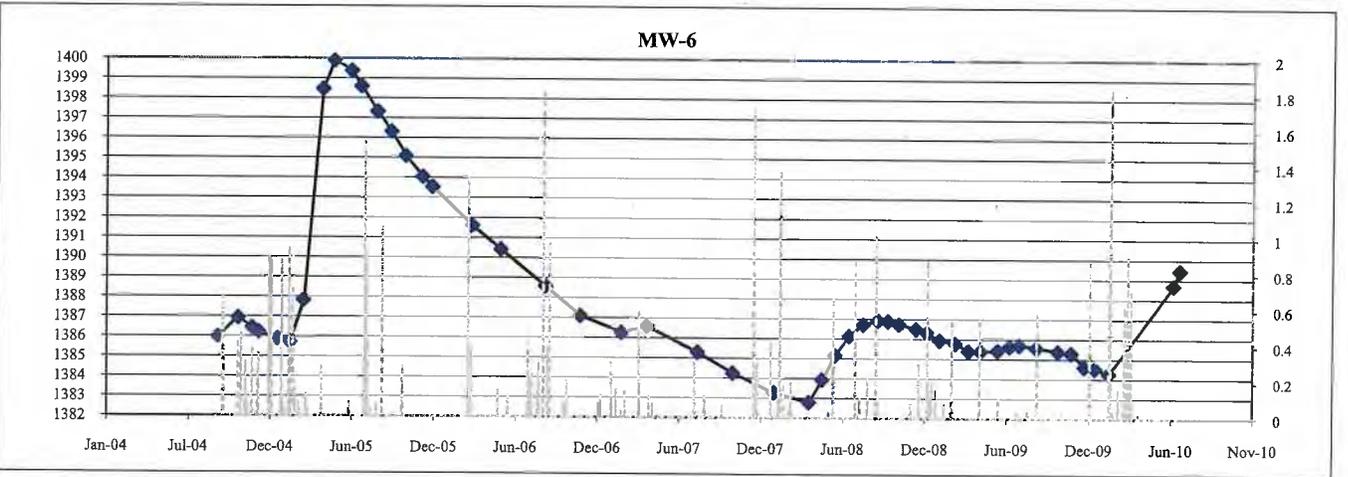
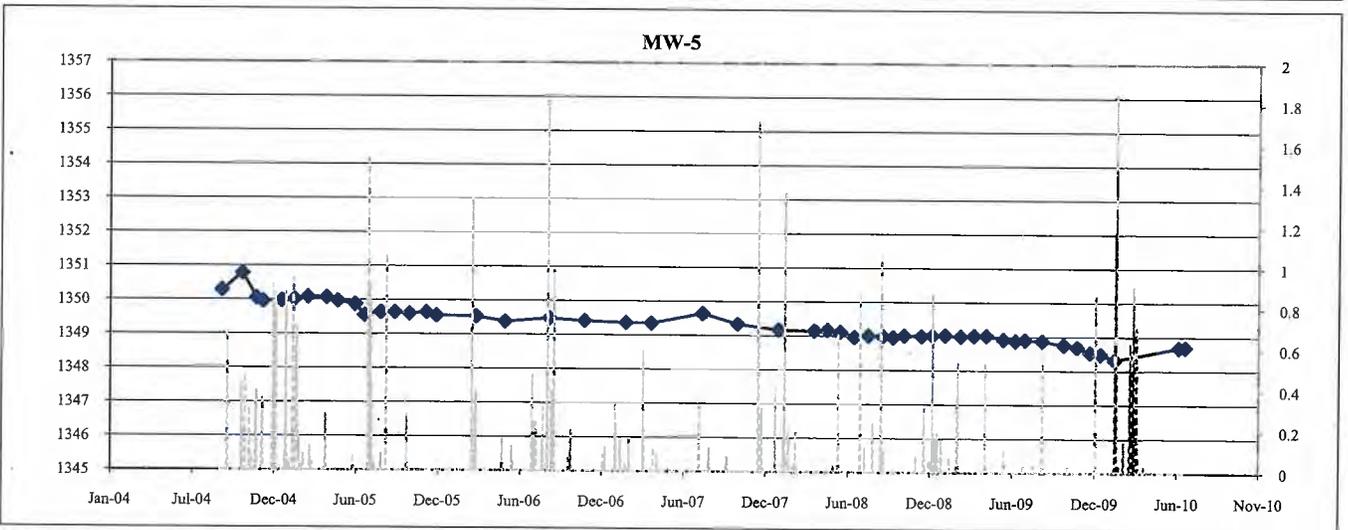
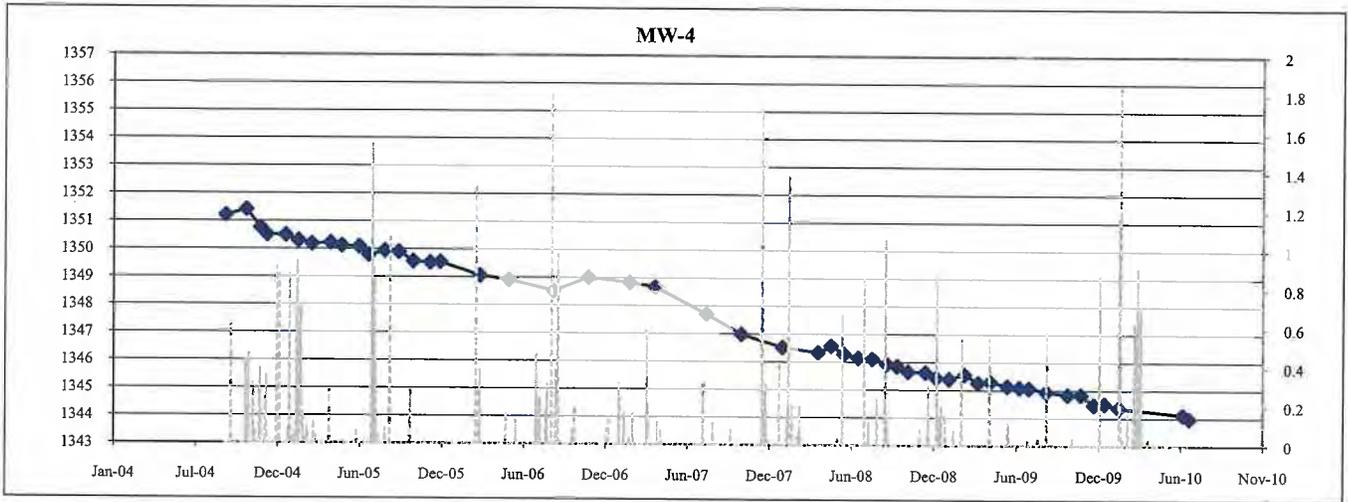
Appendix D
Monitor Well Hydrographs



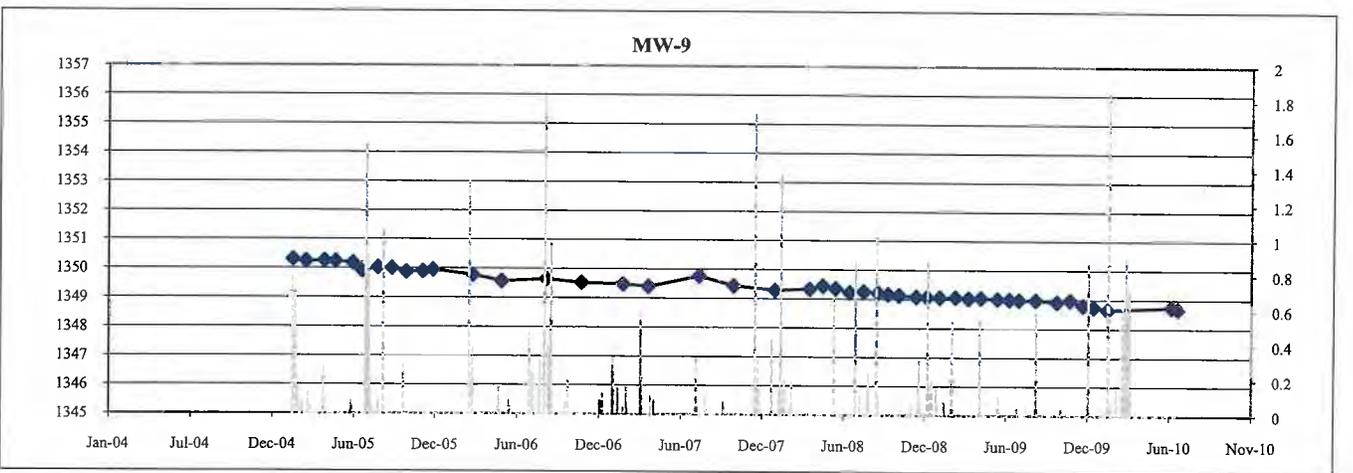
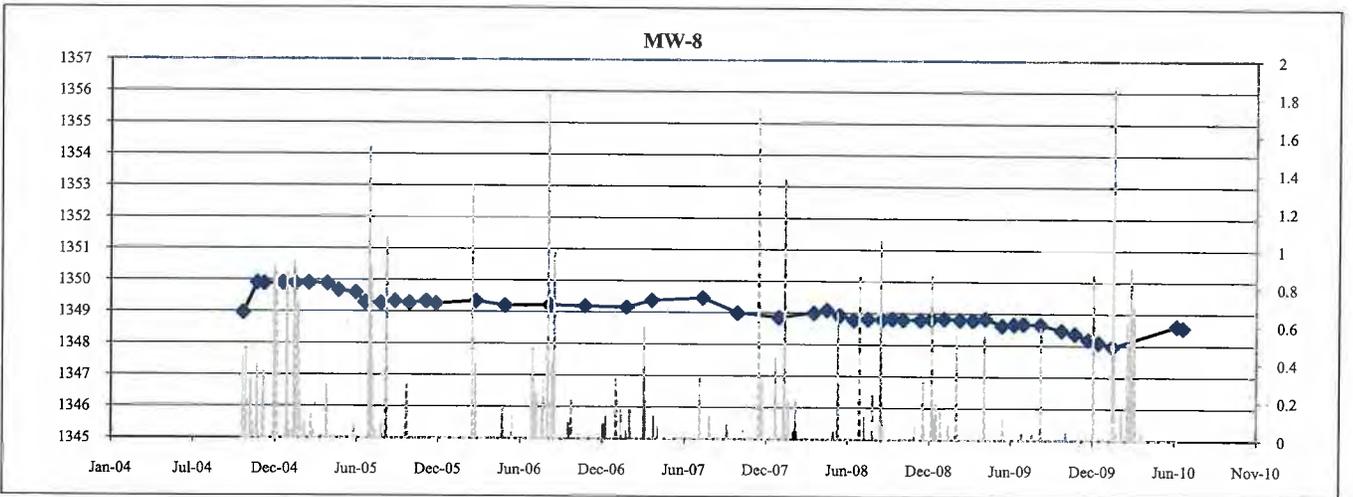
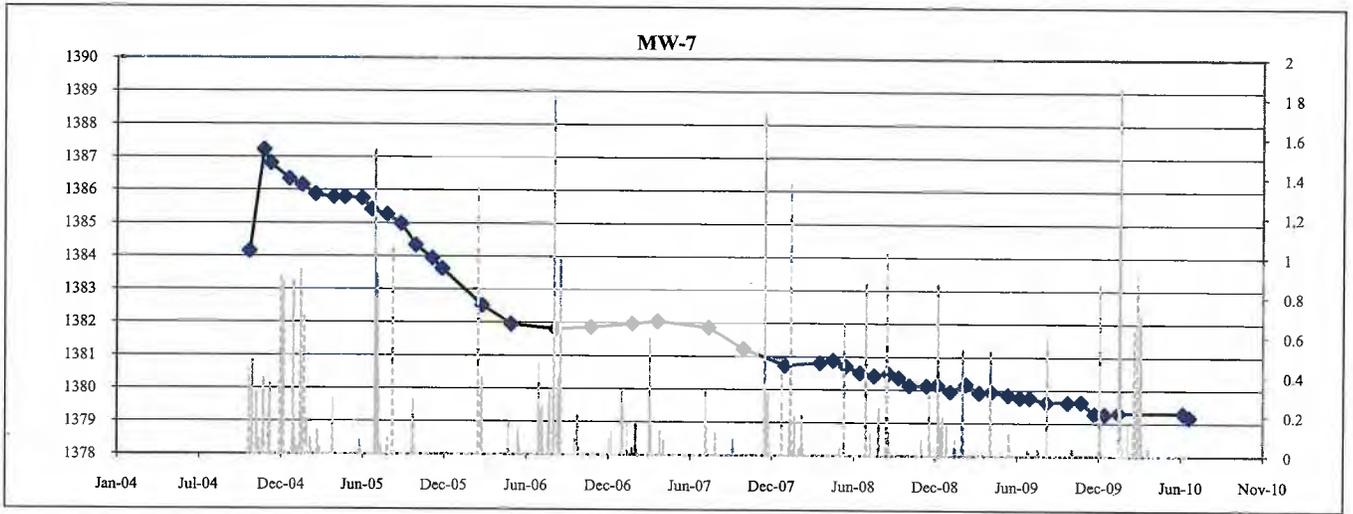
Appendix D Well Hydrographs (feet amsl) with Precipitation (in/day)



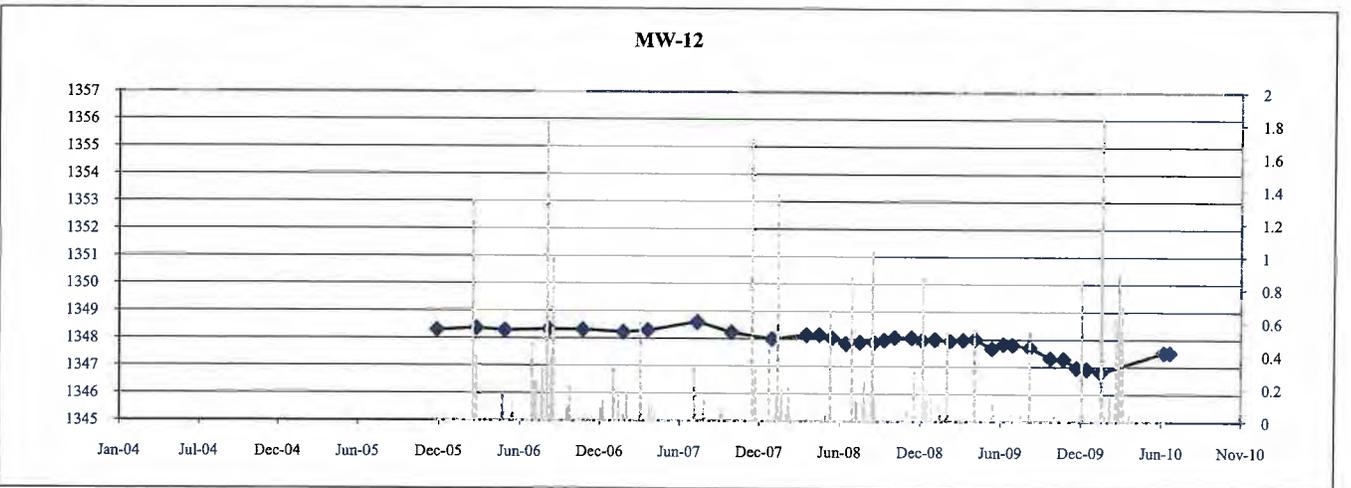
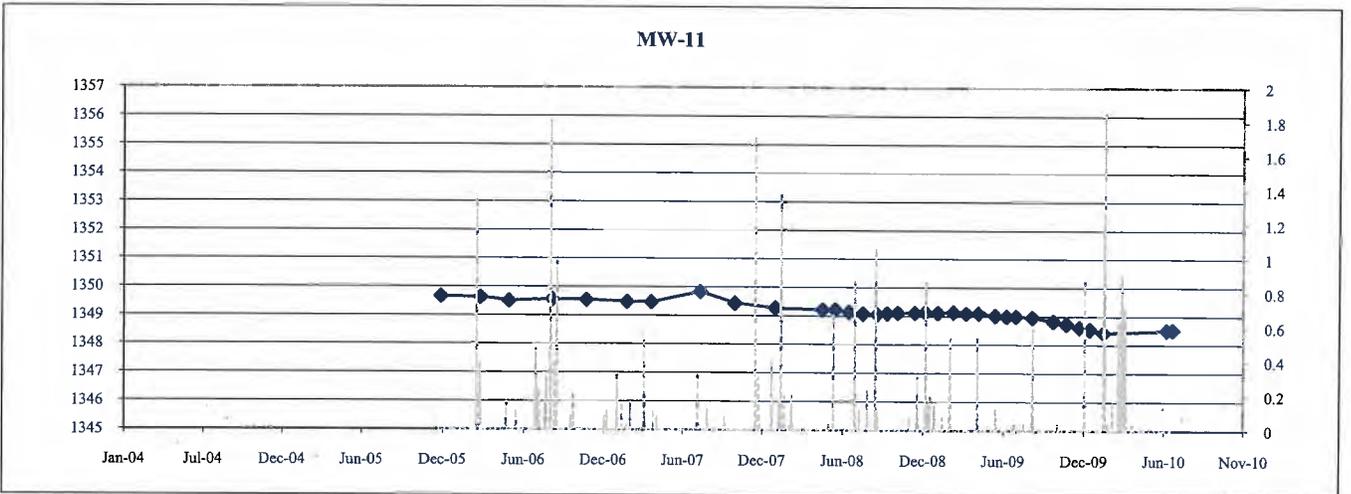
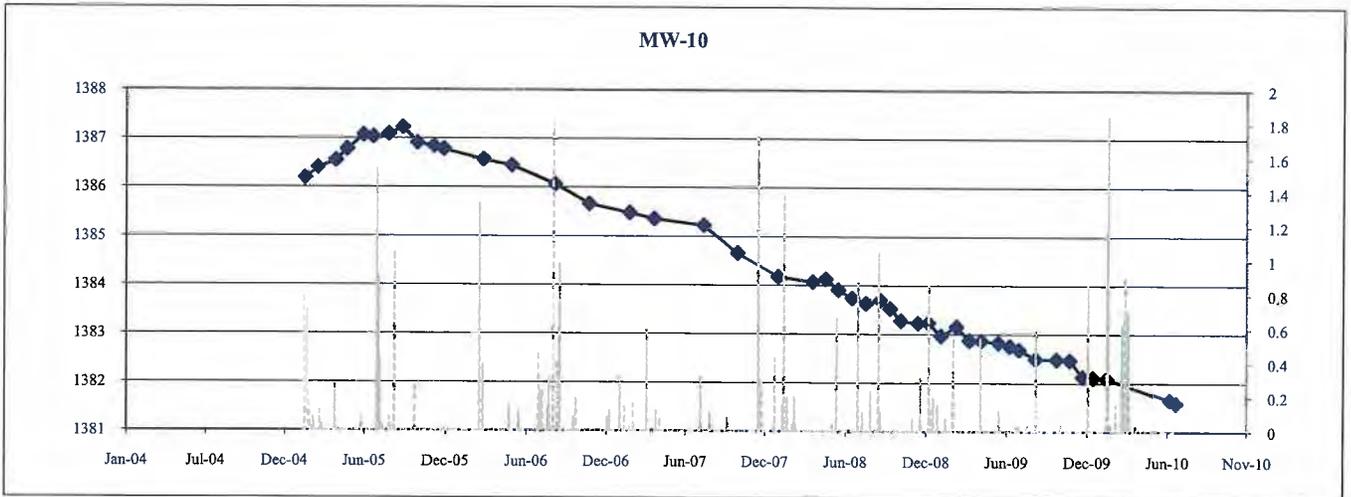
Appendix D Well Hydrographs (feet amsl) with Precipitation (in/day)



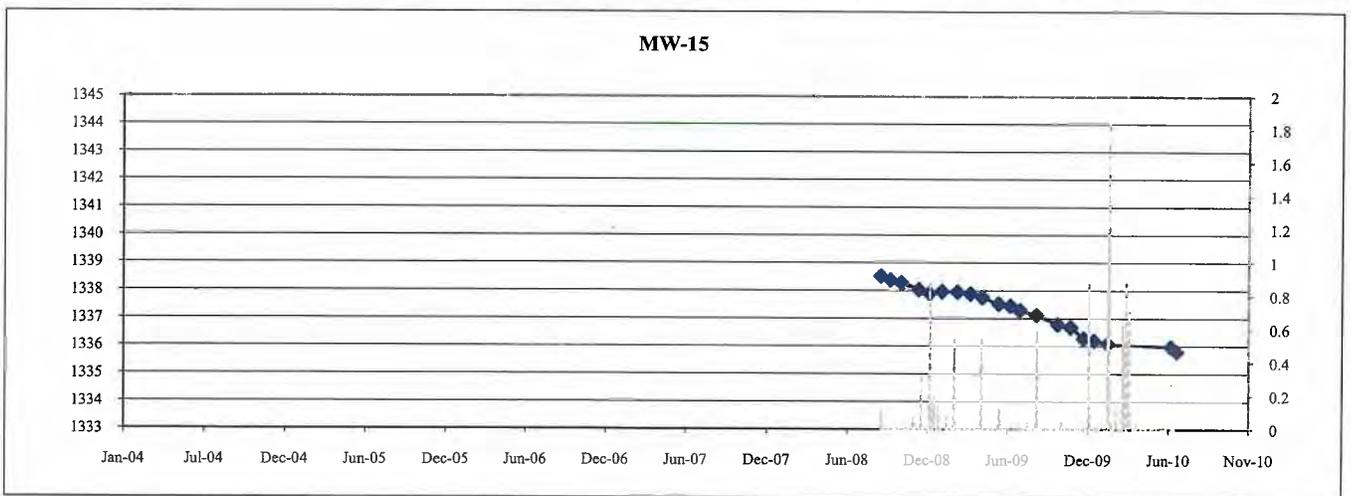
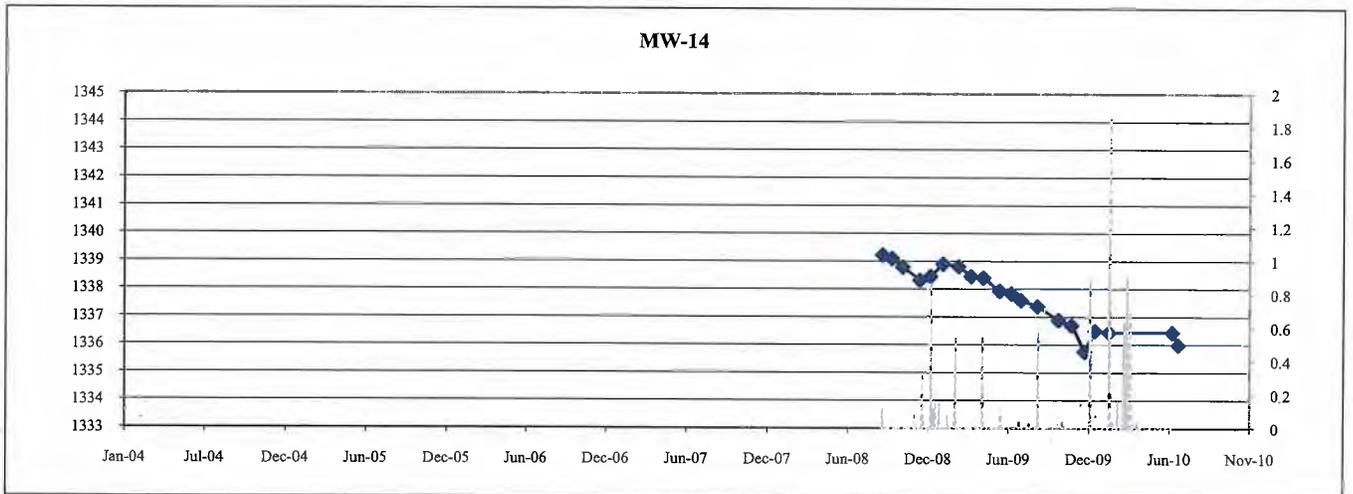
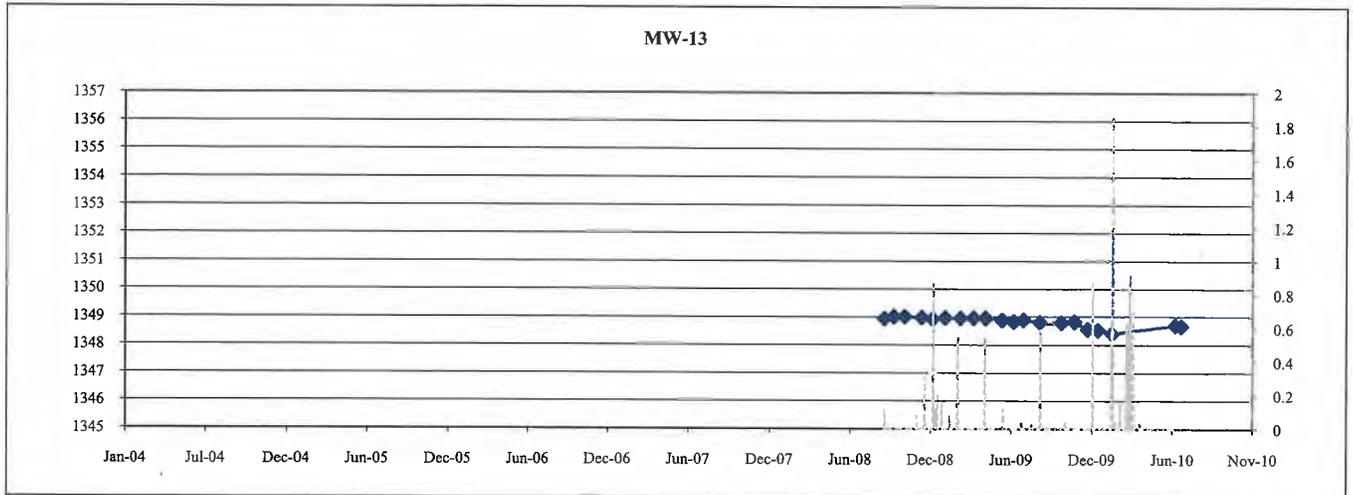
Appendix D Well Hydrographs (feet amsl) with Precipitation (in/day)



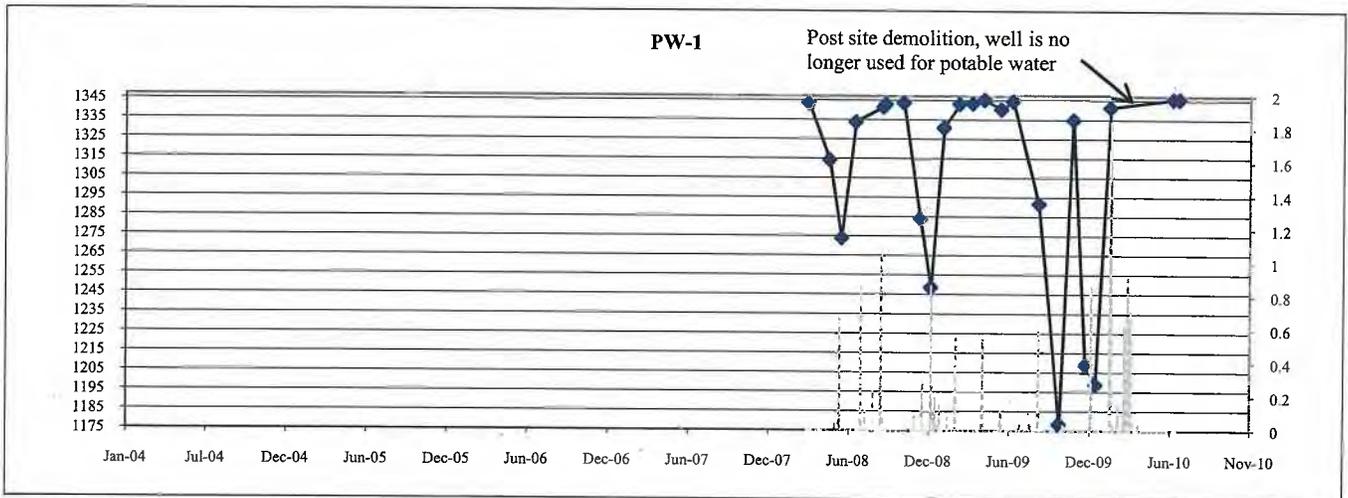
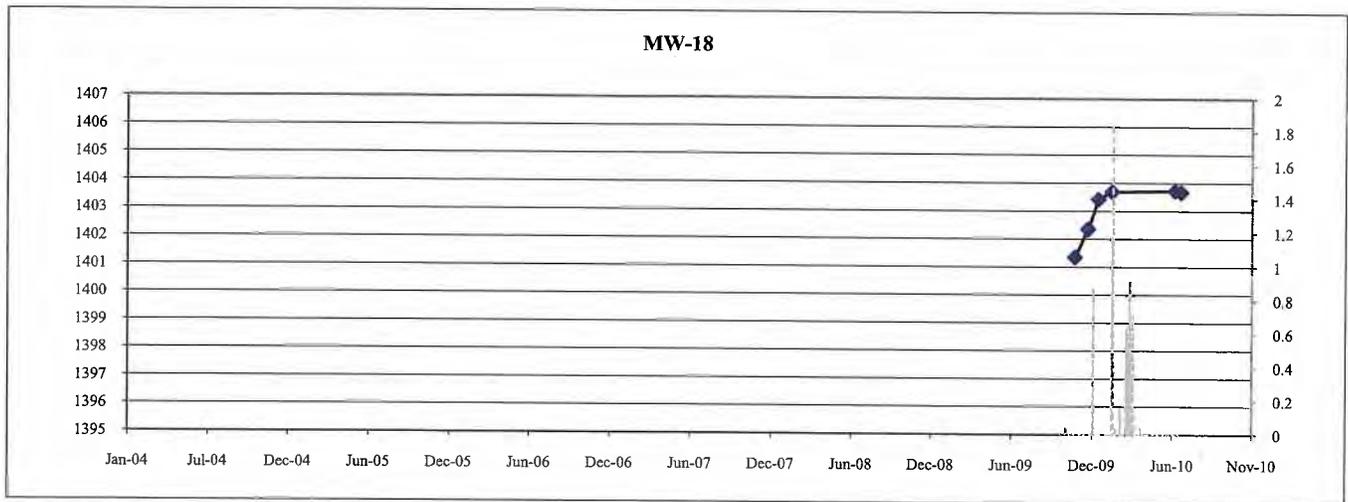
Appendix D Well Hydrographs (feet amsl) with Precipitation (in/day)



Appendix D Well Hydrographs (feet amsl) with Precipitation (in/day)

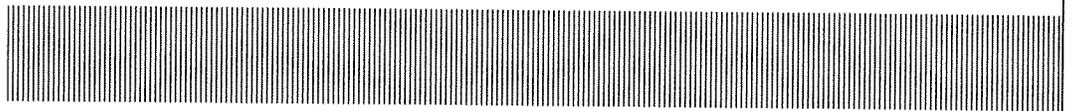


Appendix D Well Hydrographs (feet amsl) with Precipitation (in/day)



Universal Propulsion Company
2010 Annual Monitoring Report

Appendix E
2010 Monitor Well Water Quality



**Appendix E
Monitor Well Groundwater Quality Summary**

Parameter	MW-1 1/25/2010	MW-1 6/14/2010	MW-2 1/25/2010	MW-2 6/14/2010	MW-3 1/20/2010	MW-4 1/20/2010	MW-5 1/25/2010	MW-5 6/14/2010	MW-6 1/20/2010	MW-6 6/15/2010	MW-7 1/22/2010	MW-8 1/20/2010
Inorganics (mg/L)												
Arsenic	0.010	NA	0.0082	NA	0.0053	0.0026	0.010	NA	0.0068	NA	0.026	0.048
Barium	0.044	NA	0.074	NA	0.022	0.078	0.053	NA	0.016	NA	0.0065	0.0022
Cadmium	<0.0010	NA	<0.0010	NA	<0.0010	<0.0010	<0.0010	NA	<0.0010	NA	<0.0010	<0.0010
Chromium	0.0023	NA	0.015	NA	0.0020	<0.0010	0.031	NA	0.0032	NA	0.0030	0.024
Lead	0.0015	NA	0.0013	NA	0.0019	0.0014	0.0017	NA	0.0013	NA	<0.0010	0.0029
Mercury	<0.00020	NA	<0.00020	NA	<0.00020	<0.00020	<0.00020	NA	<0.00020	NA	<0.00020	<0.00020
Selenium	<0.0020	NA	<0.0020	NA	<0.0020	<0.0020	<0.0020	NA	<0.0020	NA	<0.0020	<0.0020
Silver	<0.0010	NA	<0.0010	NA	<0.0010	<0.0010	<0.0010	NA	<0.0010	NA	<0.0010	<0.0010
Volatile Organic Compounds (ug/L)												
1,1,1,2-Tetrachloroethane	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
1,1,1-Trichloroethane	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
1,1,2,2-Tetrachloroethane	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
1,1,2-Trichloroethane	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
1,1-Dichloroethane	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
1,1-Dichloroethene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
1,1-Dichloropropene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
1,2,3-Trichlorobenzene	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	NA	<1.0	NA	<1.0	<1.0
1,2,3-Trichloropropane	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	NA	<1.0	NA	<1.0	<1.0
1,2,4-Trichlorobenzene	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	NA	<1.0	NA	<1.0	<1.0
1,2,4-Trimethylbenzene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
1,2-Dibromo-3-chloropropane	<2.5	NA	<2.5	NA	<2.5	<2.5	<2.5	NA	<2.5	NA	<2.5	<2.5
1,2-Dibromoethane (EDB)	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
1,2-Dichlorobenzene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
1,2-Dichloroethane	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
1,2-Dichloropropane	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
1,3,5-Trimethylbenzene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
1,3-Dichlorobenzene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
1,3-Dichloropropane	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
1,4-Dichlorobenzene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
1,4-Dioxane	<1.0	NA	2.7	NA	<1.0	<1.0	<1.0	NA	<1.0	NA	<1.0	<1.0
2,2-Dichloropropane	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	NA	<1.0	NA	<1.0	<1.0
2-Butanone (MEK)	<2.5	NA	<2.5	NA	<2.5	<2.5	<2.5	NA	<2.5	NA	<2.5	<2.5
2-Chlorotoluene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
2-Hexanone	<2.5	NA	<2.5	NA	<2.5	<2.5	<2.5	NA	<2.5	NA	<0.50	<0.50
4-Chlorotoluene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<2.5	<2.5
4-Methyl-2-pentanone (MIBK)	<2.5	NA	<2.5	NA	<2.5	<2.5	<2.5	NA	<0.50	NA	<0.50	<0.50
Acetone	<10	NA	<10	NA	<10	<10	<10	NA	<10	NA	<2.5	<2.5
Benzene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<10	<10
Bromobenzene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
Bromochloromethane	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
Bromodichloromethane	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
Bromoform	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	NA	<1.0	NA	<0.50	<0.50
Bromomethane	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	NA	<1.0	NA	<1.0	<1.0
Carbon disulfide	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
Carbon tetrachloride	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
Chlorobenzene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
Chloroethane	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	NA	<1.0	NA	<1.0	<1.0

Appendix E
Monitor Well Groundwater Quality Summary

Parameter	MW-1 1/25/2010	MW-1 6/14/2010	MW-2 1/25/2010	MW-2 6/14/2010	MW-3 1/20/2010	MW-4 1/20/2010	MW-5 1/25/2010	MW-5 6/14/2010	MW-6 1/20/2010	MW-6 6/15/2010	MW-7 1/22/2010	MW-8 1/20/2010
Volatile Organic Compounds (ug/L)												
Chloroform	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
Chloromethane	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	NA	<1.0	NA	<1.0	<1.0
cis-1,2-Dichloroethene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
cis-1,3-Dichloropropene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
Dibromochloromethane	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
Dibromomethane	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
Dichlorodifluoromethane	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
Ethylbenzene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
Hexachlorobutadiene	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	NA	<1.0	NA	<1.0	<1.0
Iodomethane	<2.5	NA	<2.5	NA	<2.5	<2.5	<2.5	NA	<2.5	NA	<2.5	<2.5
Isopropylbenzene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
Methylene Chloride	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	NA	<1.0	NA	<1.0	<1.0
Methyl-tert-butyl Ether (MTBE)	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
Naphthalene	<2.5	NA	<2.5	NA	<2.5	<2.5	<2.5	NA	<2.5	NA	<2.5	<2.5
n-Butylbenzene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
n-Propylbenzene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
Perchlorate	69	78	90	94	0.47 J	0.49 J	32	27	16	19	0.51 J	0.93 J
p-Isopropyltoluene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
sec-Butylbenzene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
Styrene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
tert-Butylbenzene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
Tetrachloroethene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
Toluene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
trans-1,2-Dichloroethene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
trans-1,3-Dichloropropene	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
Trichloroethene	<0.50	NA	<0.50	NA	5.4	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
Trichlorofluoromethane	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
Vinyl Acetate	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
Vinyl chloride	<0.50	NA	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	NA	<0.50	<0.50
Xylenes, Total	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	NA	<1.0	NA	<1.0	<1.0

Notes:
 NA = Not analyzed
 < = Analyte not detected above the listed
 laboratory reporting limit
 J = Estimated value
 UJ = Estimated reporting limit
 mg/L = Milligrams per liter
 ug/L = Micrograms per liter

Appendix E
Monitor Well Groundwater Quality Summary

Parameter	MW-9 1/20/2010	MW-10 1/20/2010	MW-11 1/21/2010	MW-12 1/21/2010	MW-13 1/22/2010	MW-13 6/15/2010	MW-14 1/20/2010	MW-15 1/22/2010	MW-18 1/27/2010
Inorganics (mg/L)									
Arsenic	0.0079	0.018	0.0072	0.0074	0.0046	NA	0.0014	0.0030	0.051
Barium	0.061	0.0086	0.14	0.027	0.064	NA	0.28	0.25	0.015
Cadmium	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	NA	<0.0010	<0.0010	<0.0010
Chromium	<0.0010	0.0027	0.0051	0.0071	0.0015	NA	0.0021	<0.0010	0.013
Lead	<0.0010	0.0012	<0.0010	<0.0010	<0.0010	NA	0.0016	<0.0010	<0.0010
Mercury	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	NA	<0.00020	<0.00020	<0.00020
Selenium	<0.0020	<0.0020	0.0027	<0.0020	<0.0020	NA	0.0023	<0.0020	<0.0020
Silver	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	NA	<0.0010	<0.0010	<0.0010
Volatile Organic Compounds (ug/L)									
1,1,1,2-Tetrachloroethane	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
1,1-Dichloroethane	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
1,1-Dichloroethene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
1,1-Dichloropropene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
1,2,3-Trichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	<1.0	<1.0
1,2,3-Trichloropropane	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	<1.0	<1.0
1,2,4-Trichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
1,2-Dibromo-3-chloropropane	<2.5	<2.5	<2.5	<2.5	<2.5	NA	<2.5	<2.5	<2.5
1,2-Dibromoethane (EDB)	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
1,2-Dichlorobenzene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
1,2-Dichloroethane	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
1,2-Dichloropropane	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
1,3,5-Trimethylbenzene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
1,3-Dichloropropane	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
1,4-Dioxane	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	<1.0	<1.0
2,2-Dichloropropane	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	<1.0	<1.0
2-Butanone (MEK)	<2.5	<2.5	<2.5	<2.5	<2.5	NA	<2.5	<2.5	<2.5
2-Chlorotoluene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
2-Hexanone	<2.5	<2.5	<2.5	<2.5	<2.5	NA	<2.5	<2.5	<2.5
4-Chlorotoluene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
4-Methyl-2-pentanone (MIBK)	<2.5	<2.5	<2.5	<2.5	<2.5	NA	<2.5	<2.5	<2.5
Acetone	<10	<10	<10	<10	<10	NA	<10	<10	<10
Benzene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Bromobenzene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Bromochloromethane	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Bromodichloromethane	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Bromoform	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	<1.0	<1.0
Bromomethane	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	<1.0	<1.0
Carbon disulfide	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Carbon tetrachloride	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Chlorobenzene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Chloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	<1.0	<1.0

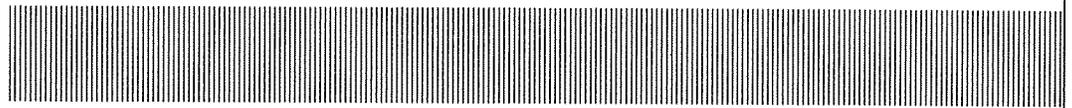
Appendix E
Monitor Well Groundwater Quality Summary

Parameter	MW-9 1/20/2010	MW-10 1/20/2010	MW-11 1/21/2010	MW-12 1/21/2010	MW-13 1/22/2010	MW-13 6/15/2010	MW-14 1/20/2010	MW-15 1/22/2010	MW-18 1/27/2010
Volatile Organic Compounds (ug/L)									
Chloroform	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Chloromethane	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Dibromochloromethane	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Dibromomethane	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Dichlorodifluoromethane	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Ethylbenzene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Hexachlorobutadiene	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	<1.0	<1.0
Iodomethane	<2.5	<2.5	<2.5	<2.5	<2.5	NA	<2.5	<2.5	<2.5
Isopropylbenzene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Methylene Chloride	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	<1.0	<1.0
Methyl-tert-butyl Ether (MTBE)	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Naphthalene	<2.5	<2.5	<2.5	<2.5	<2.5	NA	<2.5	<2.5	<2.5
n-Butylbenzene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
n-Propylbenzene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Perchlorate	0.64 J	1.2 J	2.1 J	1.1 J	22	12	0.98 J	0.86 J	<2.0 UJ
p-Isopropyltoluene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
sec-Butylbenzene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Styrene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
tert-Butylbenzene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Tetrachloroethene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Toluene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
trans-1,2-Dichloroethene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
trans-1,3-Dichloropropene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Trichloroethene	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Trichlorofluoromethane	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Vinyl Acetate	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Vinyl chloride	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50
Xylenes, Total	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	<1.0	<1.0

Notes:
 NA = Not analyzed
 < = Analyte not detected above the listed
 laboratory reporting limit
 J = Estimated value
 UJ = Estimated reporting limit
 mg/L = Milligrams per liter
 ug/L = Micrograms per liter

Universal Propulsion Company
2010 Annual Monitoring Report

Appendix F
Historic Private Well Water Quality
Data



Appendix F
Historic Private Well Water Quality Data

Sample ID	Date Collected	Perchlorate	
		EPA Method 314.0 (ug/L)	EPA Method 332.0 (ug/L)
104 E. Yearling	11/15/2006	<2.0	2.0
	12/28/2007	<2.0	1.3
	4/1/2008	<2.0	1.1
	10/15/2008	<2.0	0.75
	4/16/2009	<2.0	0.65
122 W. Yearling	12/28/2007	<2.0	1.4
	4/1/2008	<2.0	1.2
	10/13/2008	<2.0	0.72
	4/16/2009	<2.0	0.67
	10/30/2009	<2.0	1.2
	6/17/2010	<2.0	0.65 J
16 E Yearling	11/19/2004	<2.0	NA
	4/29/2005	<2.0	NA
	10/28/2005	<2.0	NA
	5/23/2006	<2.0	NA
	11/13/2006	<2.0	0.68
	10/16/2007	<2.0	0.64
	4/1/2008 *	<2.0	2.6
	4/1/2008	<2.0	2.9
	10/15/2008	<2.0	0.77
	4/17/2009	<2.0	0.63
	10/30/2009	<2.0	1.0
	6/17/2010	<2.0	0.58 J
18 E. Yearling	10/27/2005	<2.0	NA
	5/23/2006	<2.0	NA
	11/14/2006	<2.0	0.94
	4/4/2007	<2.0	0.98
	10/16/2007	<2.0	0.77
	4/1/2008	<2.0	1.0
	10/15/2008	<2.0	1.1
	4/16/2009	<2.0	0.86
	10/30/2009	<2.0	1.1
	6/17/2010	<2.0	0.81 J
204 E. Yearling	10/27/2005	<2.0	NA
	4/16/2009	<2.0	0.64
	10/30/2009	<2.0	1.3
	6/17/2010	<2.0	0.62 J
218 E Yearling***	11/19/2004	<2.0	NA
	10/28/2005	<2.0	NA
	5/23/2006	<2.0	NA
	11/14/2006	<2.0	0.68
	4/4/2007	<2.0	0.67
	10/16/2007	<2.0	NA
	4/1/2008	<2.0	1.3
	10/15/2008	<2.0	0.80
	10/15/2008 **	<2.0	0.73
4/16/2009	<2.0	0.68	
10/30/2009	<2.0	1.2	

Appendix F
Historic Private Well Water Quality Data

Sample ID	Date Collected	Perchlorate	
		EPA Method 314.0 (ug/L)	EPA Method 332.0 (ug/L)
25825 N 1st Place	11/17/2004	<2.0	NA
	4/28/2005	<2.0	NA
	10/28/2005	<2.0	NA
	5/23/2006	<2.0	NA
	11/14/2006	<2.0	1.0
	4/4/2007	<2.0	0.93
	10/16/2007	<2.0	0.89
	4/1/2008	<2.0	1.1
	10/15/2008	<2.0	0.97
	4/16/2009	<2.0	0.89
	10/30/2009	<2.0	1.2
25903 N 2nd St	6/16/2010	<2.0	0.89
	11/19/2004	<2.0	NA
	10/28/2005	<2.0	NA
	5/23/2006	<2.0	NA
	11/14/2006	<2.0	0.78
	4/4/2007	<2.0	0.76
	4/1/2008	2.2	3.1
	10/15/2008	<2.0	0.84
	4/16/2009	<2.0	0.88
	10/30/2009	<2.0	1.3
	6/17/2010	<2.0	0.65 J
412 E Yearling	11/19/2004	<2.0	NA
	4/29/2005	<2.0	NA
	10/28/2005	<2.0	NA
	5/23/2006	<2.0	NA
	4/1/2008	<2.0	2.1
	10/15/2008	<2.0	1.5
	4/16/2009	<2.0	1.1
	10/30/2009	<2.0	1.5
424 E Yearling	6/17/2010	<2.0	1.0 J
	1/19/2008	<2.0	1.2
	4/1/2008	<2.0	2.2
	10/15/2008	<2.0	1.6
	4/16/2009	<2.0	1.2
	10/30/2009	<2.0	1.8
520 E Yearling	6/17/2010	<2.0	1.1 J
	11/17/2004	<2.0	NA
	4/28/2005	<2.0	NA
	5/23/2006	<2.0	NA
	11/14/2006	<2.0	1.5
	4/4/2007	2.4	1.3
	10/16/2007	<2.0	1.4
	4/1/2008	<2.0	2.2
	10/15/2008	<2.0	1.3
	4/16/2009	<2.0	1.3
10/30/2009	<2.0	1.9	
6/17/2010	<2.0	1.2 J	

Appendix F
Historic Private Well Water Quality Data

Sample ID	Date Collected	Perchlorate	
		EPA Method 314.0 (ug/L)	EPA Method 332.0 (ug/L)
604/616 E. Yearling	11/17/2004	<2.0	NA
	4/29/2005	<2.0	NA
	10/28/2005	<2.0	NA
	5/23/2006	<2.0	NA
	11/14/2006	<2.0	1.1
	4/6/2007	<2.0	1.2
	10/16/2007	<2.0	1.0
	4/1/2008	<2.0	1.5
	10/15/2008	<2.0	1.1
	4/16/2009	<2.0	0.98
	10/30/2009	<2.0	1.6
8 W. Yearling	6/17/2010	<2.0	0.91 J
	12/28/2007	<2.0	1.2
	4/4/2008	<2.0	0.78
	10/15/2008	<2.0	1.1
	10/30/2009	<2.0	1.1
	6/17/2010	<2.0	0.62 J

Notes:

ug/L = Micrograms per liter

< = Analyte not detected above the listed laboratory reporting limit

* = Well in front yard sampled for comparison purposes, labeled as 16 E. Yearling - N

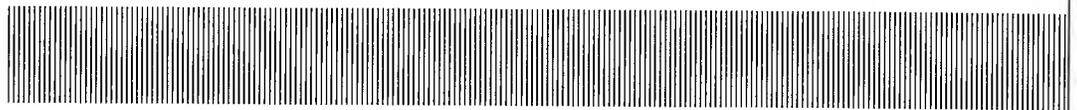
** = Older well located in front yard of 218 E. Yearling that previously supplied both 204 E. Yearling and 218 E. Yearling residences before installation of new wells in back yards of both residences.

***=218 East Yearling was not sampled; unable to gain access to well after 2 attempts to contact resident

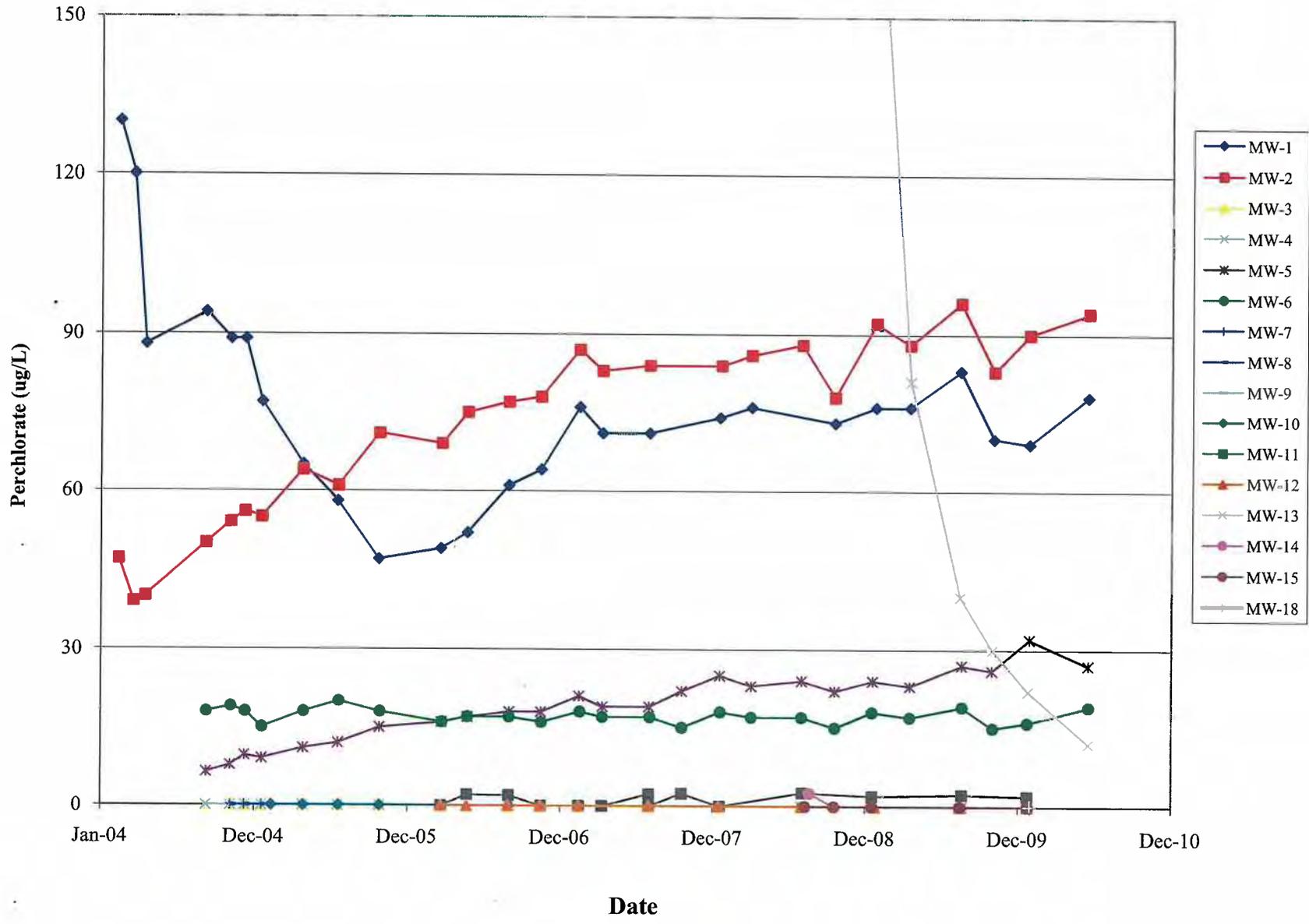
J = Analyte was positively identified, however the result should be considered an estimated value

NA = Not analyzed

Appendix G
Historic Perchlorate Concentration
Graph – Monitor Wells

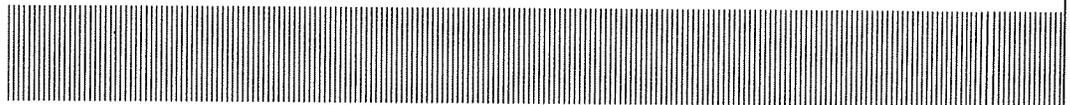


Appendix G Historic Monitor Well Perchlorate Concentration Graph



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Appendix H
Summary of 2010 Field Data



Appendix H 2010 Field Data Summary

Quarter Sampled	Well ID	Date	Purge Volume (gallons)	Time (HH:MM)	Temperature (°C)	Conductivity (µs/cm)	pH (SU)
First Quarter 2010	MW-1	1/25/2010	21	9:37	26.10	583	7.86
	MW-1	1/25/2010	41	9:41	26.94	591	7.93
	MW-1	1/25/2010	58	9:44	27.06	593	7.95
	MW-1	1/25/2010	87	9:50	27.03	594	7.98
	MW-1	1/25/2010	112	9:55	27.13	597	8.00
	MW-1	1/25/2010	138	10:00	27.18	598	8.01
	MW-1	1/25/2010	204	10:13	purge end time		
	MW-2	1/25/2010	18	11:54	26.50	631	7.90
	MW-2	1/25/2010	47	11:57	26.43	613	7.97
	MW-2	1/25/2010	76	12:00	27.40	603	8.01
	MW-2	1/25/2010	92	12:02	27.38	601	7.98
	MW-2	1/25/2010	116	12:04	27.40	625	8.01
	MW-2	1/25/2010	234	12:18	purge end time		
	MW-3	1/19/2010	8	10:31	26.95	733	7.36
	MW-3	1/19/2010	18	10:33	28.03	737	7.44
	MW-3	1/19/2010	27	10:35	28.17	732	7.46
	MW-3	1/19/2010	37	10:37	28.29	738	7.48
	MW-3	1/19/2010	49	10:39	28.38	741	7.50
	MW-3	1/19/2010	59	10:41	28.43	743	7.52
	MW-3	1/19/2010	65	10:43	dry		
	MW-4	1/19/2010	8	9:21	26.03	980	7.94
	MW-4	1/19/2010	12	9:23	27.44	968	7.98
	MW-4	1/19/2010	18	9:26	dry		
	MW-5	1/25/2010	21	8:26	24.05	578	7.90
	MW-5	1/25/2010	41	8:29	26.73	564	7.57
	MW-5	1/25/2010	68	8:34	26.78	554	7.72
	MW-5	1/25/2010	99	8:39	27.03	550	7.84
	MW-5	1/25/2010	141	8:47	26.87	545	8.01
	MW-5	1/25/2010	151	8:49	26.83	543	8.01
	MW-5	1/25/2010	213	9:00	purge end time		
	MW-6	1/19/2010	12	8:21	24.06	975	7.45
	MW-6	1/19/2010	18	8:23	24.83	990	7.65
	MW-6	1/19/2010	30	8:27	26.64	1008	7.76
	MW-6	1/19/2010	36	8:29	27.21	1049	7.81
	MW-6	1/19/2010	44	8:32	27.05	1034	7.84
	MW-6	1/19/2010	52	8:35	dry		
	MW-7	1/22/2010	35	8:15	25.60	419	6.56
	MW-7	1/22/2010	58	8:19	25.96	420	6.70
	MW-7	1/22/2010	100	8:25	26.02	418	6.92
	MW-7	1/22/2010	126	8:30	25.97	416	7.02
	MW-7	1/22/2010	168	8:37	26.11	415	7.11
	MW-7	1/22/2010	198	8:42	26.16	414	7.16
	MW-7	1/22/2010	264	8:53	purge end time		
	MW-8	1/19/2010	6	11:52	27.12	550	7.76
	MW-8	1/19/2010	20	11:57	27.73	527	7.93
MW-8	1/19/2010	35	12:02	28.35	502	8.11	
MW-8	1/19/2010	48	12:07	29.15	509	8.12	
MW-8	1/19/2010	57	12:13	29.21	523	8.10	
MW-8	1/19/2010	64	12:18	29.14	520	8.10	
MW-8	1/19/2010	73	12:26	dry			
MW-9	1/20/2010	28	11:42	26.48	540	5.59	
MW-9	1/20/2010	50	11:46	27.29	543	5.79	
MW-9	1/20/2010	80	11:52	27.48	544	6.01	

Appendix H
2010 Field Data Summary

Quarter Sampled	Well ID	Date	Purge Volume (gallons)	Time (HH:MM)	Temperature (°C)	Conductivity (µs/cm)	pH (SU)
First Quarter 2010	MW-9	1/20/2010	112	11:57	27.60	543	6.15
	MW-9	1/20/2010	134	12:01	27.50	539	6.22
	MW-9	1/20/2010	154	12:05	27.36	533	6.27
	MW-9	1/20/2010	171	12:08	27.63	534	6.27
	MW-9	1/20/2010	234	12:19	purge end time		
	MW-10	1/19/2010	10	13:14	27.64	867	7.64
	MW-10	1/19/2010	20	13:18	28.35	876	7.66
	MW-10	1/19/2010	28	13:21	28.41	880	7.60
	MW-10	1/19/2010	35	13:24	28.51	888	7.58
	MW-10	1/19/2010	45	13:29	28.60	887	7.60
	MW-10	1/19/2010	47	13:30	dry		
	MW-11	1/21/2010	74	8:40	25.31		6.45
	MW-11	1/21/2010	113	8:47	25.82		6.66
	MW-11	1/21/2010	157	8:55	26.07		6.76
	MW-11	1/21/2010	212	9:05	26.12	1428	6.83
	MW-11	1/21/2010	256	9:13	24.84	1517	6.85
	MW-11	1/21/2010	322	9:25	purge end time		
	MW-12	1/21/2010	36	11:28	26.15	1083	6.76
	MW-12	1/21/2010	89	11:32	26.21	1078	6.77
	MW-12	1/21/2010	203	11:43	28.42	1107	6.82
	MW-12	1/21/2010	399	12:00	28.02	1035	6.84
	MW-12	1/21/2010	505	12:10	purge stop		
	MW-12	1/21/2010	56	13:10	27.62	1047	6.56
	MW-12	1/21/2010	123	13:16	27.98	1044	6.50
	MW-12	1/21/2010	224	13:25	28.04	1037	6.49
	MW-12	1/21/2010	482	13:48	purge end time		
	MW-13	1/22/2010	50	12:36	26.65	588	7.28
	MW-13	1/22/2010	96	12:41	27.97	597	7.26
	MW-13	1/22/2010	284	12:59	27.56	580	7.29
	MW-13	1/22/2010	377	13:08	28.29	602	7.37
	MW-13	1/22/2010	473	13:18	27.38	576	7.38
	MW-13	1/22/2010	531	13:24	purge stop		
	MW-13	1/22/2010	48	14:00	27.97	568	7.36
	MW-13	1/22/2010	125	14:08	27.99	567	7.31
	MW-13	1/22/2010	202	14:16	28.07	577	7.36
	MW-13	1/22/2010	288	14:25	28.01	577	7.35
	MW-13	1/22/2010	547	14:52	purge end time		
	MW-14	1/19/2010	30	14:28	28.01	1640	7.59
	MW-14	1/19/2010	85	14:34	28.81	1680	7.57
	MW-14	1/19/2010	141	14:43	28.44	1667	7.48
	MW-14	1/19/2010	159	14:48	28.40	1666	7.50
	MW-14	1/19/2010	187	14:57	29.93	1689	7.53
	MW-14	1/19/2010	219	15:07	29.12	1699	7.51
	MW-14	1/19/2010	231	15:15	29.34	1703	7.50
	MW-14	1/19/2010	237	15:19	purge end time		
MW-15	1/22/2010	18	10:28	25.44	588	7.08	
MW-15	1/22/2010	46	10:32	26.74	599	7.03	
MW-15	1/22/2010	82	10:39	26.87	598	7.05	
MW-15	1/22/2010	118	10:45	27.44	603	7.10	
MW-15	1/22/2010	188	10:58	27.63	597	7.18	
MW-15	1/22/2010	241	11:07	27.65	591	7.23	
MW-15	1/22/2010	328	11:23	purge end time			
MW-18	1/26/2010	0	9:30	25.07	550	8.93	

Appendix H 2010 Field Data Summary

Quarter Sampled	Well ID	Date	Purge Volume (gallons)	Time (HH:MM)	Temperature (°C)	Conductivity (µs/cm)	pH (SU)
First Quarter 2010	MW-18	1/26/2010	10	9:47	25.13	541	9.12
	MW-18	1/26/2010	20	10:02	24.06	542	9.18
	MW-18	1/26/2010	29	10:18	25.53	544	9.10
	MW-18	1/26/2010	38	10:32	25.80	552	9.15
	MW-18	1/26/2010	50	10:52	25.79	552	9.15
	MW-18	1/26/2010	62	11:11	26.02	711	9.14
	MW-18	1/26/2010	71	11:27	26.56	566	9.20
	MW-18	1/26/2010	83	11:46	26.47	532	9.18
	MW-18	1/26/2010	95	12:06	26.34	522	9.27
	MW-18	1/26/2010	106	12:23	26.41	525	9.35
	MW-18	1/26/2010	120	12:46	26.49	527	9.39
	MW-18	1/26/2010	131	13:04	26.57	536	9.35
	MW-18	1/26/2010	146	13:30	26.64	540	9.52
	MW-18	1/26/2010	153	13:40	26.61	643	9.81
	MW-18	1/26/2010	160	13:52	purge end time		
Second Quarter 2010	MW-1	6/14/2010	10	12:02	28.43	463	6.76
	MW-1	6/14/2010	35	12:07	29.16	412	7.07
	MW-1	6/14/2010	60	12:12	29.20	413	7.16
	MW-1	6/14/2010	85	12:17	29.22	414	7.18
	MW-1	6/14/2010	110	12:22	29.12	414	7.15
	MW-2	6/14/2010	18	13:22	29.45	454	6.74
	MW-2	6/14/2010	53	13:26	29.66	452	6.95
	MW-2	6/14/2010	88	13:30	28.62	442	7.09
	MW-2	6/14/2010	114	13:33	28.56	440	7.13
	MW-5	6/14/2010	11	14:30	28.82	399	6.81
	MW-5	6/14/2010	39	14:35	29.26	393	6.96
	MW-5	6/14/2010	66	14:40	29.26	391	7.19
	MW-5	6/14/2010	94	14:45	29.32	388	7.12
	MW-5	6/14/2010	121	14:50	29.39	388	7.22
	MW-5	6/14/2010	149	14:55	29.36	386	7.30
	MW-6	6/14/2010	8	10:57	28.13	471	7.01
	MW-6	6/14/2010	28	11:02	28.71	469	7.11
	MW-6	6/14/2010	40	11:05	28.98	471	7.14
	MW-6	6/14/2010	56	11:09	29.15	476	7.15
	MW-6	6/14/2010	68	11:12	dry		
	MW-13	6/15/2010	78	10:20	30.04	485	7.09
	MW-13	6/15/2010	189	10:30	30.13	486	7.34
	MW-13	6/15/2010	300	10:40	30.24	489	7.37
	MW-13	6/15/2010	411	10:50	30.23	488	7.39
	MW-13	6/15/2010	522	11:00	30.18	484	7.37
MW-13	6/15/2010	911	11:35	30.35	480	7.02	
MW-13	6/15/2010	56	11:45	30.29	481	7.21	

Notes:

HH:MM = Hour : Minute

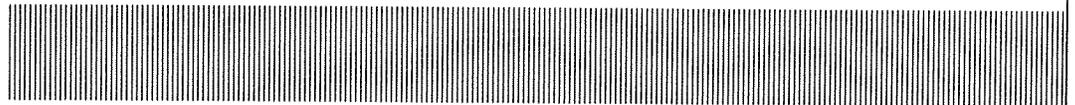
°C = Degrees Celsius

us/cm - Microsiemen per centimeter

SU = Standard unit

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Appendix I
2010 Data Verification Summaries



GROUNDWATER MONITORING DATA VERIFICATION SUMMARY PRIVATE WELLS – JUNE 2010

1.0 INTRODUCTION

This summary presents data verification results for private residential wells adjacent to Universal Propulsion Company, Inc. (UPCO) during the June 2010 monitoring event. The data review was performed in accordance with the procedures specified in the Remedial Investigation Workplan Vol. II Quality Assurance Project Plan (QAPP) (Hargis+Associates, Inc. 2004), USEPA Functional Guidelines for Inorganic Data Review (USEPA, 2002), and quality assurance and control parameters set by the project laboratory (TestAmerica).

A total of 11 groundwater samples were collected and submitted to TestAmerica for the following parameters:

- perchlorate by USEPA Method 314.0; and
- perchlorate by USEPA Method 332.0.

Table B-1 lists the samples and associated analytical parameters.

2.0 QUALITY CONTROL PARAMETERS REVIEWED

Sample results were subject to a Level III data review that includes an evaluation of the following quality control (QC) parameters:

- Chain-of-Custody;
- Sample preservation and Temperature Upon Laboratory Receipt;
- Holding Times;
- Blank Contamination (method blanks, trip blanks);
- Laboratory Control Sample (LCS) Recovery and Relative Percent Difference (RPD); and
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recovery and RPD.

The data qualifiers used to qualify the analytical results associated with QC parameters outside of the established data quality objectives are defined below:

- J The analyte was positively identified; however, the result should be considered an estimated value.
- UJ The reporting limit is considered an estimated value.
- R Quality control indicates that the data is not usable.

Results qualified as "J" or UJ" are of acceptable data quality and may be used quantitatively to fulfill the objectives of the analytical program, per EPA guidelines.

Qualified results are summarized in Table B-2.

2.1 CHAIN-OF-CUSTODY

The chain-of-custody documentation associated with project samples was found to be complete. Chain-of-custodies included sample identifications, date and time of collection, requested parameters, and relinquished/received signatures.

2.2 SAMPLE PRESERVATION AND TEMPERATURE UPON LABORATORY RECEIPT

Samples collected were received preserved and intact at the project laboratory. Samples were received at the correct temperature ($4\pm 2^{\circ}$ Celsius) at the project laboratory.

2.3 HOLDING TIMES

Samples were extracted and analyzed within the holding time limits set by the respective USEPA methods.

2.4 BLANK CONTAMINATION

2.4.1 Method Blank

Method blanks were analyzed at the appropriate frequency as specified in the project laboratory's QAPP. Target compounds were not detected in method blanks.

2.5 LCS RECOVERY AND RPD

LCS/LCS duplicates were performed at the required frequency and were evaluated based on the following criteria:

- If the analyte recovery was above acceptance limits for the LCS or LCS duplicate, but the analyte was not detected in the associated batch, then data qualification was not required.

- If the analyte recovery was above acceptance limits for the LCS or LCS duplicate and the analyte was detected in the associated batch, then the analyte results were qualified “J”.
- If the analyte recovery was below acceptance limits for LCS or LCS duplicate then the analyte results in the associated analytical batch were qualified (“UJ” for non-detects and “J” for detected results).
- If the analyte recovery was less than 10 percent, the analyte results in the associated analytical batch were rejected and qualified “R”.

LCS/LCSD percent recoveries and RPDs were within acceptance limits.

2.6 MS/MSD RECOVERY AND RPD

MS/MSD samples were performed at the required frequency and were evaluated by the following criteria:

- If the MS or MSD recovery for an analyte was above acceptance limits but the analyte was not detected in the associated analytical batch, then data qualification was not required.
- If the MS or MSD recovery for an analyte was above acceptance limits and the analyte was detected in the associated analytical batch, then analyte results were qualified “J”.
- Low MS/MSD recoveries for inorganic parameters result in sample qualification of the associated analytical batch.
- Low MS/MSD recoveries for organic parameters result in the data qualification of the unspiked sample rather than the analytical batch.
- Results were not qualified based on non-project specific MS/MSD (i.e., batch QC) recoveries.

Percent recoveries and RPDs for the MS/MSD duplicate were within acceptance limits except for the following:

- The MS for analytical batch 10F2953 had a recovery for perchlorate (method 332.0) of 77 percent, which was below acceptance limits. Data were qualified “J” for associated samples in the analytical batch, to indicate a potential low bias.

3.0 COMPLETENESS SUMMARY

Two types of completeness were calculated for this project: contract and technical. Results indicated as not reportable by the laboratory are not included in the completeness calculations. The following equations were used to calculate the two types of completeness:

$$\% \text{ Contract Completeness} = \left(\frac{\text{Number of contract compliant results}}{\text{Number of reported results}} \right) \times 100$$

$$\% \text{ Technical Completeness} = \left(\frac{\text{Number of usable results}}{\text{Number of reported results}} \right) \times 100$$

The overall contract completeness, which includes the evaluation of protocol and contract deviations, which includes the evaluation of the QC parameters listed in Section 2.0, was 9.1 percent. The technical completeness attained for this monitoring period was 100 percent. The completeness results are provided in Table B-3. The results for the performance monitoring events were considered usable for the intended purposes and the project DQOs have been met.

**Table B-1
Sampling and Analysis Schedule**

Sample ID	Lab ID	Collected	Sample Type	Parameters
25825 N 1st Place	PTF1009-01	6/16/2010	N	Perchlorate ¹
	PTF1010-01	6/16/2010	N	Perchlorate ²
122 W Yearling	PTF1095-01	6/17/2010	N	Perchlorate ¹
	PTF1111-01	6/17/2010	N	Perchlorate ²
8 W Yearling	PTF1087-01	6/17/2010	N	Perchlorate ¹
	PTF1103-01	6/17/2010	N	Perchlorate ²
18 E Yearling	PTF1082-01	6/17/2010	N	Perchlorate ¹
	PTF1097-01	6/17/2010	N	Perchlorate ²
204 E Yearling	PTF1084-01	6/17/2010	N	Perchlorate ¹
	PTF1098-01	6/17/2010	N	Perchlorate ²
25903 N 2nd St	PTF1094-01	6/17/2010	N	Perchlorate ¹
	PTF1110-01	6/17/2010	N	Perchlorate ²
412 E Yearling	PTF1093-01	6/17/2010	N	Perchlorate ¹
	PTF1108-01	6/17/2010	N	Perchlorate ²
520 E Yearling	PTF1092-01	6/17/2010	N	Perchlorate ¹
	PTF1107-01	6/17/2010	N	Perchlorate ²
616-604 E Yearling	PTF1091-01	6/17/2010	N	Perchlorate ¹
	PTF1106-01	6/17/2010	N	Perchlorate ²
424 E Yearling	PTF1089-01	6/17/2010	N	Perchlorate ¹
	PTF1105-01	6/17/2010	N	Perchlorate ²
16 E Yearling	PTF1085-01	6/17/2010	N	Perchlorate ¹
	PTF1099-01	6/17/2010	N	Perchlorate ²

Notes:

¹ Perchlorate by USEPA Method 314.0

² Perchlorate by USEPA Method 332.0

N = normal field sample

**Table B-2
Qualified Results**

Sample ID	Analyte	Result	Units	Data Qualifier	Comments
122 W Yearling	Perchlorate (method 332.0)	0.65	ug/l	J	Qualified due to low MS/MSD recovery
8 W Yearling	Perchlorate (method 332.0)	0.62	ug/l	J	Qualified due to low MS/MSD recovery
18 E Yearling	Perchlorate (method 332.0)	0.81	ug/l	J	Qualified due to low MS/MSD recovery
204 E Yearling	Perchlorate (method 332.0)	0.62	ug/l	J	Qualified due to low MS/MSD recovery
25903 N 2nd St	Perchlorate (method 332.0)	0.65	ug/l	J	Qualified due to low MS/MSD recovery
412 E Yearling	Perchlorate (method 332.0)	1.0	ug/l	J	Qualified due to low MS/MSD recovery
520 E Yearling	Perchlorate (method 332.0)	1.2	ug/l	J	Qualified due to low MS/MSD recovery
616-604 E Yearling	Perchlorate (method 332.0)	0.91	ug/l	J	Qualified due to low MS/MSD recovery
424 E Yearling	Perchlorate (method 332.0)	1.1	ug/l	J	Qualified due to low MS/MSD recovery
16 E Yearling	Perchlorate (method 332.0)	0.58	ug/l	J	Qualified due to low MS/MSD recovery

Notes:

ug/l = microgram per liter

J = Estimated result

MS/MSD = Matrix spike/matrix spike duplicate samples

**Table B-3
Completeness Summary**

Parameters	Total Number of Samples	Number in Contractual Compliance	Percent Contractual Compliance	Number of Usable Results	Percent Technical Compliance
Perchlorate (USEPA Method 314.0)					
Perchlorate	11	11	100	11	100
Perchlorate (USEPA Method 332.0)					
Perchlorate	11	1	9.1	11	100

Notes:

Number of samples used in completeness calculations includes field samples but not field duplicates or trip blanks.

Percent Contractual Compliance = (Number of contract compliant results/Number of reported results) * 100

Percent Technical Compliance = (Number of usable results/Number of reported results) * 100

GROUNDWATER MONITORING DATA VERIFICATION SUMMARY SITE MONITORING WELLS – JANUARY 2010

1.0 INTRODUCTION

This summary presents data verification results for groundwater samples collected from Universal Propulsion Company, Inc. (UPCO) wells during the January 2010 monitoring event. The data review was performed in accordance with the procedures specified in the Remedial Investigation Workplan Vol. II Quality Assurance Project Plan (QAPP) (Hargis+Associates, Inc. 2004), USEPA Functional Guidelines for Organic and Inorganic Data Review (USEPA, 1999 and 2002), and quality assurance and control parameters set by the project laboratory (TestAmerica).

A total of 16 groundwater samples were collected and submitted to TestAmerica for the following parameters:

- metals by USEPA Methods 200.8, and 245.1;
- perchlorate by USEPA Method 314.0; and
- volatile organic compounds (VOCs) by USEPA Method 8260B.

Additionally, eleven field quality assurance samples (i.e., trip blanks and field duplicate) were collected and analyzed as part of the sampling program. Table A-1 lists the samples and associated analytical parameters.

2.0 QUALITY CONTROL PARAMETERS REVIEWED

Sample results were subject to a Level III data review that includes an evaluation of the following quality control (QC) parameters:

- Chain-of-Custody
- Sample preservation and Temperature Upon Laboratory Receipt;
- Holding Times;
- Blank Contamination (method blanks, trip blanks);
- Surrogate Recovery (for organic parameters);
- Laboratory Control Sample (LCS) Recovery and Relative Percent Difference (RPD);
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recovery and RPD;

- Duplicates (field duplicate, laboratory duplicates); and
- Calibration.

The data qualifiers used to qualify the analytical results associated with QC parameters outside of the established data quality objectives are defined below:

- J The analyte was positively identified; however, the result should be considered an estimated value.
- UJ The reporting limit is considered an estimated value.
- R Quality control indicates that the data is not usable.

Results qualified as “J” or UJ” are of acceptable data quality and may be used quantitatively to fulfill the objectives of the analytical program, per EPA guidelines.

The results associated with this sampling event required no data qualification.

2.1 CHAIN-OF-CUSTODY

The chain-of-custody documentation associated with project samples was found to be complete. Chain-of-custodies included sample identifications, date and time of collection, requested parameters, and relinquished/received signatures.

2.2 SAMPLE PRESERVATION AND TEMPERATURE UPON LABORATORY RECEIPT

Samples collected were received preserved and intact at the project laboratory. Samples were received at the correct temperature ($4\pm 2^{\circ}$ Celsius) at the project laboratory with the following exception:

- Samples collected on January 22, 2010, were received at 1.4 degrees Celsius. This temperature outlier did not significantly impact the sample results; therefore, data qualification was not required.
- Samples collected on January 25, 2010, were received at 1.6 degrees Celsius. This temperature outlier did not significantly impact the sample results; therefore, data qualification was not required.

2.3 HOLDING TIMES

Samples were extracted and analyzed within the holding time limits set by the respective USEPA methods.

2.4 BLANK CONTAMINATION

2.4.1 Method Blank

Method blanks were analyzed at the appropriate frequency as specified in the project laboratory's QAPP. Target compounds were not detected in method blanks.

2.4.2 Trip Blank

Trip blanks were analyzed at the appropriate frequency as specified in the Remedial Investigation Workplan Vol. II Quality Assurance Project Plan (QAPP) (Hargis+Associates, Inc. 2004). Target compounds were not detected in the trip blanks.

2.5 SURROGATE RECOVERY

Surrogate recoveries for the organic analyses were within laboratory acceptance limits.

2.6 LCS RECOVERY AND RPD

LCS/LCS duplicates were performed at the required frequency and were evaluated based on the following criteria:

- If the analyte recovery was above acceptance limits for the LCS or LCS duplicate, but the analyte was not detected in the associated batch, then data qualification was not required.
- If the analyte recovery was above acceptance limits for the LCS or LCS duplicate and the analyte was detected in the associated batch, then the analyte results were qualified "J".
- If the analyte recovery was below acceptance limits for LCS or LCS duplicate then the analyte results in the associated analytical batch were qualified ("UJ" for non-detects and "J" for detected results).
- If the analyte recovery was less than 10 percent, the analyte results in the associated analytical batch were rejected and qualified "R".

LCS/LCSD percent recoveries and RPDs were within acceptance limits except for the following:

- For the analytical batch 10B0036, the LCS and LCS duplicate percent recoveries exceeded the control limits for tert-butylbenzene. Data qualification was not required because the associated samples were not analyzed for tert-butylbenzene within this analytical batch.

2.7 MS/MSD RECOVERY AND RPD

MS/MSD samples were performed at the required frequency and were evaluated by the following criteria:

- If the MS or MSD recovery for an analyte was above acceptance limits but the analyte was not detected in the associated analytical batch, then data qualification was not required.
- If the MS or MSD recovery for an analyte was above acceptance limits and the analyte was detected in the associated analytical batch, then analyte results were qualified "J".
- Low MS/MSD recoveries for inorganic parameters result in sample qualification of the associated analytical batch.
- Low MS/MSD recoveries for organic parameters result in the data qualification of the unspiked sample rather than the analytical batch.
- Results were not qualified based on non-project specific MS/MSD (i.e., batch QC) recoveries.

MS/MSD percent recoveries and RPDs were within acceptance limits except for the following:

- The MS and MS duplicate percent recoveries associated with the analytical batch 10A0749 were outside of acceptance limits for several analytes. Data qualification was not required because the spiked sample was non project-specific (i.e., batch QC).
- The MS percent recovery associated with the analytical batch 10A0850 was outside acceptance limits for trichloroethene. Data qualification was not required because the spiked sample was non project-specific (i.e., batch QC).
- The MS duplicate percent recovery associated with the analytical batch 10B0085 was outside acceptance limits for total xylenes. Data qualification was not required because the spiked sample was non project-specific (i.e., batch QC).
- The MS duplicate percent recovery associated with the analytical batch 10A0798 was outside acceptance limits for carbon disulfide. Data qualification was not required because the spiked sample was non project-specific (i.e., batch QC).
- The MS duplicate percent recovery associated with the analytical batch 10B0034 was outside acceptance limits for dibromomethane and 4-methyl-2-pentanone (MIBK). Data qualification was not required because the spiked sample was non project-specific (i.e., batch QC).

2.8 DUPLICATES

2.8.1 Field Duplicates

One field duplicate was collected during the monitoring event and submitted for analysis. The RPDs between the field duplicate and its associated sample were calculated and are presented in Table A-2. The field duplicates were evaluated by the following criteria:

- If an analyte was detected at a concentration greater than five times the method reporting limit, the RPD should be less than 25 percent.
- If an analyte was detected at a concentration that is less than five times the method reporting limit, then the difference between the sample and the field duplicate should not exceed the method reporting limit.
- Duplicate RPDs are calculated by dividing the difference of the concentrations by the average of the concentrations.

Field duplicate RPDs were within acceptance limits.

2.8.2 Laboratory Duplicates

Laboratory duplicates are evaluated based on the acceptance limits set forth by the project laboratory's guidelines. Laboratory duplicates were performed at the appropriate frequency for perchlorate. Laboratory duplicates were within acceptance limits except for the following:

- The RPD between the original and duplicate sample result for analytical batch 10A0701 was outside acceptance limits. Data qualification was not required because the spiked sample was non project-specific (i.e., batch QC).
- The RPD between the original and duplicate sample result for analytical batch 10A0754 was outside acceptance limits. Data qualification was not required because the spiked sample was non project-specific (i.e., batch QC).

2.9 CALIBRATION

The Method 8260B continuing calibration verification (CCV) standards were within acceptance limits, except for the following:

- The second source CCV recovery associated with analytical batch 10A0747 had recoveries above acceptance limits for carbon disulfide. Data qualification was not required because the analyte was not detected in the associated samples.
- The second source curve for verification following the calibration for analytical batch 10B0036 was above acceptance limits for tert-butylbenzene.

Data qualification was not required because tert-butylbenzene was not detected in the associated samples.

- The second source CCV recovery associated with analytical batch 10A0798 had recoveries above acceptance limits for carbon disulfide. Data qualification was not required because the analyte was not detected in the associated samples.

3.0 COMPLETENESS SUMMARY

Two types of completeness were calculated for this project: contract and technical. Results indicated as not reportable by the laboratory are not included in the completeness calculations. The following equations were used to calculate the two types of completeness:

$$\% \text{ Contract Completeness} = \left(\frac{\text{Number of contract compliant results}}{\text{Number of reported results}} \right) \times 100$$

$$\% \text{ Technical Completeness} = \left(\frac{\text{Number of usable results}}{\text{Number of reported results}} \right) \times 100$$

The overall contract completeness, which includes the evaluation of protocol and contract deviations, which includes the evaluation of the QC parameters listed in Section 2.0, was 100 percent. The technical completeness attained for this monitoring period was 100 percent. The completeness results are provided in Table A-3. The results for the performance monitoring events were considered usable for the intended purposes and the project DQOs have been met.

**Table A-1
Sampling and Analysis Schedule**

Sample ID	Lab ID	Collected	Sample Type	Parameters
MW-6	PTA0939-01	1/20/2010	N	VOCs, 1,4-Dioxane, Metals, Perchlorate
TB012010-01	PTA0939-02	1/20/2010	TB	VOCs
TB012010-02	PTA0939-03	1/20/2010	TB	1,4-Dioxane
MW-4	PTA0939-04	1/20/2010	N	VOCs, 1,4-Dioxane, Metals, Perchlorate
MW-3	PTA0939-05	1/20/2010	N	VOCs, 1,4-Dioxane, Metals, Perchlorate
MW-9	PTA0939-06	1/20/2010	N	VOCs, 1,4-Dioxane, Metals, Perchlorate
MW-8	PTA0939-07	1/20/2010	N	VOCs, 1,4-Dioxane, Metals, Perchlorate
MW-10	PTA0939-08	1/20/2010	N	VOCs, 1,4-Dioxane, Metals, Perchlorate
MW-14	PTA0939-09	1/20/2010	N	VOCs, 1,4-Dioxane, Metals, Perchlorate
TB012110-1	PTA1040-01	1/21/2010	TB	VOCs
TB012110-2	PTA1040-02	1/21/2010	TB	1,4-Dioxane
MW-11	PTA1040-03	1/21/2010	N	VOCs, 1,4-Dioxane, Metals, Perchlorate
MW-12	PTA1040-04	1/21/2010	N	VOCs, 1,4-Dioxane, Metals, Perchlorate
TB012210-1	PTA1099-01	1/22/2010	TB	VOCs
TB012210-2	PTA1099-02	1/22/2010	TB	1,4-Dioxane
MW-7	PTA1099-03	1/22/2010	N	VOCs, 1,4-Dioxane, Metals, Perchlorate
MW-15	PTA1099-04	1/22/2010	N	VOCs, 1,4-Dioxane, Metals, Perchlorate
MW-13	PTA1099-05	1/22/2010	N	VOCs, 1,4-Dioxane, Metals, Perchlorate
TB012510-1	PTA1143-01	1/25/2010	TB	VOCs
TB012510-2	PTA1143-02	1/25/2010	TB	1,4-Dioxane
MW-5	PTA1143-03	1/25/2010	N	VOCs, 1,4-Dioxane, Metals, Perchlorate
MW-1	PTA1143-04	1/25/2010	N	VOCs, 1,4-Dioxane, Metals, Perchlorate
MW-2	PTA1143-05	1/25/2010	N	VOCs, 1,4-Dioxane, Metals, Perchlorate
FD012510	PTA1143-06	1/25/2010	FD	VOCs, 1,4-Dioxane, Metals, Perchlorate
TB012710-1	PTA1251-01	1/27/2010	TB	VOCs
TB012710-2	PTA1251-02	1/27/2010	TB	1,4-Dioxane
MW-18	PTA1251-03	1/27/2010	N	VOCs, 1,4-Dioxane, Metals, Perchlorate

Notes:

Metals = arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver.

VOCs = volatile organic compounds analyzed by USEPA Method 8260B.

Perchlorate = USEPA Method 314.0.

N = normal field sample

TB = trip blank

**Table A-2
Field Duplicate Summary**

Sample ID / Field Duplicate ID	Parameters	Sample Result	Field Duplicate Result	RPD (%)
MW-2/ FD012510	Volatile Organic Compounds (ug/l)			
	1,4-Dioxane	2.7	2.5	7.7
	All Other Analytes	ND	ND	NC
	Inorganics (mg/l)			
	Arsenic	0.0082	0.0084	2.4
	Barium	0.074	0.076	2.7
	Cadmium	<0.001	<0.001	NC
	Chromium	0.015	0.015	<1.0
	Lead	0.0013	0.0017	27
	Mercury	<0.0002	<0.0002	NC
	Selenium	<0.002	<0.002	NC
	Silver	<0.001	<0.001	NC
	Perchlorate (ug/l)	90	94	4.3

Notes:

RPD = Relative percent difference; $[(\text{difference})/(\text{average})] * 100$

ND = No analytes detected

NC = Not calculated

Field duplicate RPD acceptance limits is 25 percent for results greater than 5 times the reporting limit; for results less than 5 times the reporting limit, the difference between sample and field duplicate results should be less than the reporting limit

Bolded results required data qualification.

**Table A-3
Completeness Summary**

Parameters	Total Number of Samples	Number in Contractual Compliance	Percent Contractual Compliance	Number of Usable Results	Percent Technical Compliance
Volatile Organic Compounds (8260)					
All Analytes	16	16	100	16	100
1,4-Dioxane	16	16	100	16	100
Metals					
All Analytes	16	16	100	16	100
Other Inorganics					
Perchlorate	16	16	100	16	100

Notes:

Number of samples used in completeness calculations includes field samples but not field duplicates or trip blanks.

Percent Contractual Compliance = (Number of contract compliant results/Number of reported results) * 100

Percent Technical Compliance = (Number of usable results/Number of reported results) * 100

DATA VERIFICATION SUMMARY FOR PERCHLORATE COMPARISON GROUNDWATER MONITORING SAMPLES – JANUARY 2010

1.0 INTRODUCTION

This summary presents data verification results for groundwater samples collected from Universal Propulsion Company, Inc. (UPCO) wells during the January 2010 monitoring event. The data review was performed in accordance with the procedures specified in the Remedial Investigation Workplan Vol. II Quality Assurance Project Plan (QAPP) (Hargis+Associates, Inc. 2004), USEPA Functional Guidelines for Inorganic Data Review (USEPA, 2002), and quality assurance and control parameters set by the project laboratory (TestAmerica).

A total of 11 groundwater samples were collected and submitted to TestAmerica for the following parameters:

- perchlorate by USEPA Method 332.0.

Table B-1 lists the samples and associated analytical parameters.

2.0 QUALITY CONTROL PARAMETERS REVIEWED

Sample results were subject to a Level III data review that includes an evaluation of the following quality control (QC) parameters:

- Chain-of-Custody
- Sample preservation and Temperature Upon Laboratory Receipt;
- Holding Times;
- Blank Contamination (method blanks, trip blanks);
- Laboratory Control Sample (LCS) Recovery;
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recovery and RPD; and
- Internal Standard Recovery.

The data qualifiers used to qualify the analytical results associated with QC parameters outside of the established data quality objectives are defined below:

- J The analyte was positively identified; however, the result should be considered an estimated value.
- UJ The reporting limit is considered an estimated value.
- R Quality control indicates that the data is not usable.

Results qualified as "J" or UJ" are of acceptable data quality and may be used quantitatively to fulfill the objectives of the analytical program, per EPA guidelines.

The results associated with this sampling event that required data qualification are provided in Table B-2.

2.1 CHAIN-OF-CUSTODY

The chain-of-custody documentation associated with project samples was found to be complete. Chain-of-custodies included sample identifications, date and time of collection, requested parameters, and relinquished/received signatures.

2.2 SAMPLE PRESERVATION AND TEMPERATURE UPON LABORATORY RECEIPT

Samples collected were received preserved and intact at the project laboratory. Samples were received at the correct temperature ($4\pm 2^{\circ}$ Celsius) at the project laboratory except the following:

- Samples collected on January 20, 2010 were received at 1.0 degree Celsius. The temperature outlier did not significantly impact the sample results; therefore, data qualification was not required.
- Samples collected on January 22, 2010 were received at 1.4 degrees Celsius. The temperature outlier did not significantly impact the sample results; therefore, data qualification was not required.

2.3 HOLDING TIMES

Samples were extracted and analyzed within the holding time limit set by the respective USEPA method.

2.4 BLANK CONTAMINATION

2.4.1 Method Blank

Method blanks were analyzed at the appropriate frequency as specified in the project laboratory's QAPP. Target compounds were not detected in method blanks.

2.5 LCS RECOVERY

LCS percent recoveries were performed at the required frequency and were evaluated based on the following criteria:

- If the analyte recovery was above acceptance limits for the LCS or LCS duplicate, but the analyte was not detected in the associated batch, then data qualification was not required.
- If the analyte recovery was above acceptance limits for the LCS or LCS duplicate and the analyte was detected in the associated batch, then the analyte results were qualified “J”.
- If the analyte recovery was below acceptance limits for LCS or LCS duplicate then the analyte results in the associated analytical batch were qualified (“UJ” for non-detects and “J” for detected results).
- If the analyte recovery was less than 10 percent, the analyte results in the associated analytical batch were rejected and qualified “R”.

LCS percent recoveries were within acceptance limits.

2.6 MS/MSD RECOVERY AND RPD

MS/MSD samples were performed at the required frequency and were evaluated by the following criteria:

- If the MS or MSD recovery for an analyte was above acceptance limits but the analyte was not detected in the associated analytical batch, then data qualification was not required.
- If the MS or MSD recovery for an analyte was above acceptance limits and the analyte was detected in the associated analytical batch, then analyte results were qualified “J”.
- Low MS/MSD recoveries for inorganic parameters result in sample qualification of the associated analytical batch.
- Low MS/MSD recoveries for organic parameters result in the data qualification of the unspiked sample rather than the analytical batch.
- Results were not qualified based on non-project specific MS/MSD (i.e., batch QC) recoveries.

MS/MSD percent recoveries and RPDs were within acceptance limits.

2.7 INTERNAL STANDARD RECOVERY

The Internal Standard recovery was outside of method limits for analytical batches 10B0376 and 10B0630 and matrix interference was confirmed. Associated samples were qualified "UJ" and "J" to indicate a potential bias.

3.0 COMPLETENESS SUMMARY

Two types of completeness were calculated for this project: contract and technical. Results indicated as not reportable by the laboratory are not included in the completeness calculations. The following equations were used to calculate the two types of completeness:

$$\% \text{ Contract Completeness} = \left(\frac{\text{Number of contract compliant results}}{\text{Number of reported results}} \right) \times 100$$

$$\% \text{ Technical Completeness} = \left(\frac{\text{Number of usable results}}{\text{Number of reported results}} \right) \times 100$$

The overall contract completeness, which includes the evaluation of protocol and contract deviations, which includes the evaluation of the QC parameters listed in Section 2.0, was 0 percent. The technical completeness attained for this monitoring period was 100 percent. The completeness results are provided in Table B-3. The results for the performance monitoring events were considered usable for the intended purposes and the project DQOs have been met.

**Table B-1
Sampling and Analysis Schedule**

Sample ID	Lab ID	Collected	Sample Type	Parameters
MW-14	PTA0940-01	1/20/2010	N	Perchlorate by USEPA Method 332.0
MW-4	PTA0941-01	1/20/2010	N	Perchlorate by USEPA Method 332.0
MW-3	PTA0942-01	1/20/2010	N	Perchlorate by USEPA Method 332.0
MW-9	PTA0943-01	1/20/2010	N	Perchlorate by USEPA Method 332.0
MW-8	PTA0944-01	1/20/2010	N	Perchlorate by USEPA Method 332.0
MW-10	PTA0945-01	1/20/2010	N	Perchlorate by USEPA Method 332.0
MW-11	PTA1038-01	1/21/2010	N	Perchlorate by USEPA Method 332.0
MW-12	PTA1039-01	1/21/2010	N	Perchlorate by USEPA Method 332.0
MW-7	PTA1100-01	1/22/2010	N	Perchlorate by USEPA Method 332.0
MW-15	PTA1101-01	1/22/2010	N	Perchlorate by USEPA Method 332.0
MW-18	PTA1252-01	1/27/2010	N	Perchlorate by USEPA Method 332.0

Notes:

N = normal field sample

**Table B-2
Qualified Results**

Sample ID	Analyte	Result	Units	Data Qualifier	Comments
MW-14	Perchlorate	0.98	ug/l	J	Qualified due to Internal Standard recovery outside the method limits.
MW-4	Perchlorate	0.49	ug/l	J	Qualified due to Internal Standard recovery outside the method limits.
MW-3	Perchlorate	0.47	ug/l	J	Qualified due to Internal Standard recovery outside the method limits.
MW-9	Perchlorate	0.64	ug/l	J	Qualified due to Internal Standard recovery outside the method limits.
MW-8	Perchlorate	0.93	ug/l	J	Qualified due to Internal Standard recovery outside the method limits.
MW-10	Perchlorate	1.2	ug/l	J	Qualified due to Internal Standard recovery outside the method limits.
MW-11	Perchlorate	2.1	ug/l	J	Qualified due to Internal Standard recovery outside the method limits.
MW-12	Perchlorate	1.1	ug/l	J	Qualified due to Internal Standard recovery outside the method limits.
MW-7	Perchlorate	0.51	ug/l	J	Qualified due to Internal Standard recovery outside the method limits.
MW-15	Perchlorate	0.86	ug/l	J	Qualified due to Internal Standard recovery outside the method limits.
MW-18	Perchlorate	<2.0	ug/l	UJ	Qualified due to Internal Standard recovery outside the method limits.

Notes:

ug/L - micrograms per liter

J = estimated result

Table B-3
Completeness Summary

Parameters	Total Number of Samples	Number in Contractual Compliance	Percent Contractual Compliance	Number of Usable Results	Percent Technical Compliance
Inorganics					
Perchlorate 332.0	11	0 ^a	0	11	100

Notes:

Number of samples used in completeness calculations includes field samples, but not field duplicates or blanks.

Percent Contractual Compliance = (Number of contract compliant results/Number of reported results) * 100

Percent Technical Compliance = (Number of usable results/Number of reported results) * 100

a = Qualified due to Internal Standard recovery outside the method limits

GROUNDWATER MONITORING DATA VERIFICATION SUMMARY SITE MONITORING WELLS – JUNE 2010

1.0 INTRODUCTION

This summary presents data verification results for groundwater samples collected from Universal Propulsion Company, Inc. (UPCO) wells during the June 2010 monitoring event. The data review was performed in accordance with the procedures specified in the Remedial Investigation Workplan Vol. II Quality Assurance Project Plan (QAPP) (Hargis+Associates, Inc. 2004), USEPA Functional Guidelines for Organic and Inorganic Data Review (USEPA, 1999 and 2002), and quality assurance and control parameters set by the project laboratory (TestAmerica).

A total of five groundwater samples were collected and submitted to TestAmerica for the following parameters:

- perchlorate by USEPA Method 314.0

Additionally, one field quality assurance samples (i.e., field duplicate) was collected and analyzed as part of the sampling program. Table A-1 lists the samples and associated analytical parameters.

2.0 QUALITY CONTROL PARAMETERS REVIEWED

Sample results were subject to a Level III data review that includes an evaluation of the following quality control (QC) parameters:

- Chain-of-Custody
- Sample preservation and Temperature Upon Laboratory Receipt;
- Holding Times;
- Blank Contamination (method blanks, trip blanks);
- Surrogate Recovery (for organic parameters);
- Laboratory Control Sample (LCS) Recovery and Relative Percent Difference (RPD);
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recovery and RPD; and
- Duplicates (field duplicates).

The data qualifiers used to qualify the analytical results associated with QC parameters outside of the established data quality objectives are defined below:

- J The analyte was positively identified; however, the result should be considered an estimated value.
- UJ The reporting limit is considered an estimated value.
- R Quality control indicates that the data is not usable.

Results qualified as "J" or UJ" are of acceptable data quality and may be used quantitatively to fulfill the objectives of the analytical program, per EPA guidelines.

The results associated with this sampling event required no data qualification.

2.1 CHAIN-OF-CUSTODY

The chain-of-custody documentation associated with project samples was found to be complete. Chain-of-custodies included sample identifications, date and time of collection, requested parameters, and relinquished/received signatures.

2.2 SAMPLE PRESERVATION AND TEMPERATURE UPON LABORATORY RECEIPT

Samples collected were received preserved and intact at the project laboratory. Samples were received at the correct temperature ($4 \pm 2^\circ$ Celsius) at the project laboratory.

2.3 HOLDING TIMES

Samples were extracted and analyzed within the holding time limits set by the respective USEPA methods.

2.4 BLANK CONTAMINATION

2.4.1 Method Blank

Method blanks were analyzed at the appropriate frequency as specified in the project laboratory's QAPP. Target compounds were not detected in method blanks.

2.5 LCS RECOVERY AND RPD

LCS/LCS duplicates were performed at the required frequency and were evaluated based on the following criteria:

- If the analyte recovery was above acceptance limits for the LCS or LCS duplicate, but the analyte was not detected in the associated batch, then data qualification was not required.

- If the analyte recovery was above acceptance limits for the LCS or LCS duplicate and the analyte was detected in the associated batch, then the analyte results were qualified “J”.
- If the analyte recovery was below acceptance limits for LCS or LCS duplicate then the analyte results in the associated analytical batch were qualified (“UJ” for non-detects and “J” for detected results).
- If the analyte recovery was less than 10 percent, the analyte results in the associated analytical batch were rejected and qualified “R”.

LCS/LCSD percent recoveries and RPDs were within acceptance limits.

2.6 MS/MSD RECOVERY AND RPD

MS/MSD samples were performed at the required frequency and were evaluated by the following criteria:

- If the MS or MSD recovery for an analyte was above acceptance limits but the analyte was not detected in the associated analytical batch, then data qualification was not required.
- If the MS or MSD recovery for an analyte was above acceptance limits and the analyte was detected in the associated analytical batch, then analyte results were qualified “J”.
- Low MS/MSD recoveries for inorganic parameters result in sample qualification of the associated analytical batch.
- Low MS/MSD recoveries for organic parameters result in the data qualification of the unspiked sample rather than the analytical batch.
- Results were not qualified based on non-project specific MS/MSD (i.e., batch QC) recoveries.

MS/MSD percent recoveries and RPDs were within acceptance limits.

2.7 DUPLICATES

2.7.1 Field Duplicates

One field duplicate was collected during this monitoring event and submitted for analysis. The RPD between the field duplicate and its associated samples were calculated and presented in Table A-2. Field duplicates were evaluated by the following criteria:

- If an analyte is detected at a concentration greater than five times the method reporting limit, the RPD should be less than 25 percent.
- If an analyte is detected between the sample and field duplicate less than five times the method reporting limit, the difference between the sample and the field duplicate should not exceed the method reporting limit.

The field duplicate met acceptance criteria.

3.0 COMPLETENESS SUMMARY

Two types of completeness were calculated for this project: contract and technical. Results indicated as not reportable by the laboratory are not included in the completeness calculations. The following equations were used to calculate the two types of completeness:

$$\% \text{ Contract Completeness} = \left(\frac{\text{Number of contract compliant results}}{\text{Number of reported results}} \right) \times 100$$

$$\% \text{ Technical Completeness} = \left(\frac{\text{Number of usable results}}{\text{Number of reported results}} \right) \times 100$$

The overall contract completeness, which includes the evaluation of protocol and contract deviations, which includes the evaluation of the QC parameters listed in Section 2.0, was 100 percent. The technical completeness attained for this monitoring period was 100 percent. The completeness results are provided in Table A-3. The results for the performance monitoring events were considered usable for the intended purposes and the project DQOs have been met.

Table A-1
Sampling and Analysis Schedule
Second Quarter 2010 Monitoring Report

Sample ID	Lab ID	Collected	Sample Type	Parameters
MW-1	PTF0841-01	6/14/2010	N	Perchlorate
FD06142010	PTF0841-02	6/14/2010	FD of MW-1	Perchlorate
MW-2	PTF0841-03	6/14/2010	N	Perchlorate
MW-5	PTF0841-04	6/14/2010	N	Perchlorate
MW-6	PTF0911-01	6/15/2010	N	Perchlorate
MW-13	PTF0911-02	6/15/2010	N	Perchlorate

Notes:

Perchlorate = USEPA Method 314.0.

N = normal field sample

FD = field duplicate

Table A-2
Field Duplicate Summary
Second Quarter 2010 Monitoring Report

Sample ID / Field Duplicate ID	Parameters	Sample Result	Field Duplicate Result	RPD (%)
MW-1/ FD06142010	Inorganics (ug/l)			
	Perchlorate	78	78	0.0

Notes:

RPD = Relative percent difference: $[(\text{difference})/(\text{average})]*100$

ND = No analytes detected

NC = Not calculated

Field duplicate RPD acceptance limits is 25 percent for results greater than 5 times the reporting limit; for results less than 5 times the reporting limit, the difference between sample and field duplicate results should be less than the reporting limit

Table A-3
Completeness Summary
Second Quarter 2010 Monitoring Report

Parameters	Total Number of Samples	Number in Contractual Compliance	Percent Contractual Compliance	Number of Usable Results	Percent Technical Compliance
Inorganics					
Perchlorate (Method 314.0)	5	5	100	5	100

Notes:

Number of samples used in completeness calculations includes field samples but not field duplicates or trip blanks.

Percent Contractual Compliance = (Number of contract compliant results/Number of reported results) * 100

Percent Technical Compliance = (Number of usable results/Number of reported results) * 100

DATA VERIFICATION SUMMARY FOR SOIL-VAPOR MONITOR WELL SAMPLES – JUNE 2010

1.0 INTRODUCTION

This summary presents data verification results for soil-gas samples collected from the soil-vapor monitoring well at Universal Propulsion Company, Inc. (UPCO) during the June 2010 monitoring event. The data review was performed in accordance with the procedures specified in the Remedial Investigation Workplan Vol. II Quality Assurance Project Plan (QAPP) (Hargis+Associates, Inc. 2004), USEPA Functional Guidelines for Organic Data Review (USEPA, 1999), and quality assurance and control parameters set by the project laboratory (TestAmerica).

A total of four samples were collected and submitted to TestAmerica for the following parameters:

- volatile organic compounds (VOCs) by USEPA Method TO-15

Table C-1 lists the samples and associated analytical parameters.

2.0 QUALITY CONTROL PARAMETERS REVIEWED

Sample results were subject to a Level III data review that includes an evaluation of the following quality control (QC) parameters:

- Chain-of-Custody;
- Sample preservation and Temperature Upon Laboratory Receipt;
- Holding Times;
- Blank Contamination (method blanks); and
- Laboratory Control Sample (LCS) Recovery and Relative Percent Difference (RPD).

The data qualifiers used to qualify the analytical results associated with QC parameters outside of the established data quality objectives are defined below:

- J The analyte was positively identified; however, the result should be considered an estimated value.
- UJ The reporting limit is considered an estimated value.

R Quality control indicates that the data is not usable.

Results qualified as “J” or UJ” are of acceptable data quality and may be used quantitatively to fulfill the objectives of the analytical program, per EPA guidelines.

2.1 CHAIN-OF-CUSTODY

The chain-of-custody documentation associated with project samples was found to be complete. Chain-of-custodies included sample identifications, date and time of collection, requested parameters, and relinquished/received signatures.

2.2 SAMPLE PRESERVATION AND TEMPERATURE UPON LABORATORY RECEIPT

Samples collected were received preserved and intact at the project laboratory. Samples were received at the correct temperature (ambient) at the project laboratory.

2.3 HOLDING TIMES

Samples were extracted and analyzed within the holding time limits set by the respective USEPA methods.

2.4 BLANK CONTAMINATION

2.4.1 Method Blank

Method blanks were analyzed at the appropriate frequency as specified in the project laboratory’s QAPP. Target compounds were not detected in method blanks.

2.5 LCS RECOVERY AND RPD

LCS/LCS duplicates were performed at the required frequency and were evaluated based on the following criteria:

- If the analyte recovery was above acceptance limits for the LCS or LCS duplicate, but the analyte was not detected in the associated batch, then data qualification was not required.
- If the analyte recovery was above acceptance limits for the LCS or LCS duplicate and the analyte was detected in the associated batch, then the analyte results were qualified “J”.
- If the analyte recovery was below acceptance limits for LCS or LCS duplicate then the analyte results in the associated analytical batch were qualified (“UJ” for non-detects and “J” for detected results).

- If the analyte recovery was less than 10 percent, the analyte results in the associated analytical batch were rejected and qualified “R”.

LCS/LCSD percent recoveries and RPDs were within acceptance limits.

2.6 COMMON LABORATORY CONTAMINANTS

Per USEPA guidelines, common laboratory contaminants for VOC analysis are acetone, 2-butanone (MEK), cyclohexane, and methylene chloride. Analytical results are qualified if the detected sample concentration is less than 10 times the method reporting limit. Common lab contaminant compounds were not detected in the samples associated with the monitoring events except for the following:

- Acetone was detected in samples SVMW-1-30-40, SVMW-1-90-100, SVMW-1-140-150, and SVMW-1-190-200 collected June 16, 2010. Data were qualified “J” to indicate a potential bias.
- 2-Butanone (MEK) was detected in samples SVMW-1-30-40, SVMW-1-90-100, SVMW-1-140-150, and SVMW-1-190-200 collected June 16, 2010. Data were qualified “J” to indicate a potential bias.

3.0 COMPLETENESS SUMMARY

Two types of completeness were calculated for this project: contract and technical. Results indicated as not reportable by the laboratory are not included in the completeness calculations. The following equations were used to calculate the two types of completeness:

$$\% \text{ Contract Completeness} = \left(\frac{\text{Number of contract compliant results}}{\text{Number of reported results}} \right) \times 100$$

$$\% \text{ Technical Completeness} = \left(\frac{\text{Number of usable results}}{\text{Number of reported results}} \right) \times 100$$

The overall contract completeness, which includes the evaluation of protocol and contract deviations, which includes the evaluation of the QC parameters listed in Section 2.0, was 97.1 percent. The technical completeness attained for this monitoring period was 100 percent. The completeness results are provided in Table C-2. The results for the

performance monitoring events were considered usable for the intended purposes and the project DQOs have been met.

Table C-1
Sampling and Analysis Schedule

Sample ID	Lab ID	Collected	Sample Type	Parameters
SVMW-1-30-40	PTF1008-01	6/16/2010	N	VOCs
SVMW-1-90-100	PTF1008-02	6/16/2010	N	VOCs
SVMW-1-140-150	PTF1008-03	6/16/2010	N	VOCs
SVMW-1-190-200	PTF1008-04	6/16/2010	N	VOCs

**Table C-2
Qualified Results**

Sample ID	Analyte	Result	Units	Data Qualifier	Comments
SVMW-1-30-40	Acetone	740	ppbv	J	Qualified due to presence of common laboratory contaminant
SVMW-1-30-40	2-Butanone	66	ppbv	J	Qualified due to presence of common laboratory contaminant
SVMW-1-90-100	Acetone	280	ppbv	J	Qualified due to presence of common laboratory contaminant
SVMW-1-90-100	2-Butanone	37	ppbv	J	Qualified due to presence of common laboratory contaminant
SVMW-1-140-150	Acetone	710	ppbv	J	Qualified due to presence of common laboratory contaminant
SVMW-1-140-150	2-Butanone	73	ppbv	J	Qualified due to presence of common laboratory contaminant
SVMW-1-190-200	Acetone	380	ppbv	J	Qualified due to presence of common laboratory contaminant
SVMW-1-190-200	2-Butanone	40	ppbv	J	Qualified due to presence of common laboratory contaminant

Notes:

ppbv = parts per billion by volume

J = Estimated result

**Table C-3
Completeness Summary**

Parameters	Total Number of Samples	Number in Contractual Compliance	Percent Contractual Compliance	Number of Usable Results	Percent Technical Compliance
Volatile Organic Compounds by EPA Method TO-15					
Acetone	4	0 ^a	0	4	100
2-Butanone	4	0 ^a	0	4	100
All other analytes	272	272	100	272	100
TOTAL	280	272	97.1	280	100

Notes:

Percent Contractual Compliance = (Number of contract compliant results/Number of reported results) * 100

Percent Technical Compliance = (Number of usable results/Number of reported results) * 100

^a Qualified due to presence of common laboratory contaminant.

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Appendix J
Laboratory Reports (CD)

