FIGURE D5 **WELL DEVELOPMENT LOG**

Project: Five Points PCE Plume
Well Number: MW-101
Date: 3/30/10
Start of Purging: 11:05
End of Purging: 14:55
Water Quality Meter: Eureka
Depth of Pump Intake (ft BTOC): Bottom of well

Location: MW-101
Total Depth (ft BTOC): 182 (prior to development); 185.3 after bailing
Depth to Water (ft BTOC): 143.36
Length of Water Column (ft): 38.64
Casing Diameter (in): 4
Calculated Purge Vol (gal): 240
Method/Equip: Submersible pump
Disposition of Purge Water: South Davis Sewer District

Time	Vol. (gal)	Clarity/ Color	Turb (NTU)	Temp (°C)	pH	Cond (mS/cm)	Eh (mv)	DO (mg/L)	Notes and Comments
11:~~10~~	~~10~~ 0	brown/muddy	6115	13.38	7.52	0.001	64	4.90	wl 143.7' 2gpm [pump stopped. Install new pump]
~~11:35~~									
13:20	~~40~~ 0								start pump again (4gpm)
13:32	48	cloudy	1258	13.54	7.41	0.019	14	6.11	
13:44	96	cloudy	404	14.29	7.08	1.324	-53	5.02	
13:56	~200	cloudy	320.5	14.66	7.11	1.316	-35	5.64	(pump was running faster than 4gpm @ 1st)
14:08	~248	cloudy	302.5	14.50	7.08	1.321	-27	5.71	
14:20	~296	a little cloudy	230.9	14.50	7.08	1.321	-20	5.76	
14:32	344	" "	182.7	14.80	7.07	1.314	-19	5.72	
14:44	396	" "	175.7	14.61	7.09	1.319	-19	5.71	
14:56	~450	" "	179.5	14.75	7.09	1.318	-17	5.79	

Personnel S. DeYoung

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URS

① $V_{casing} = h(0.66 \text{ gal/linear ft})$

$= 39 \text{ ft}(0.66 \text{ gal/ft})$

$= 25.74 \text{ gal}$

② $V_{borehole} = h(2.6 \text{ gal/ft})$

$= 39 \text{ ft}(2.6 \text{ gal/ft})$

$= 101.4 \text{ gal}$

③ $V_b - V_c = V_{sandpack}$

$101.4 - 25.74 = 75.66$

④ $V_{sandpack}(0.3) + V_{casing} = V_{tot}$

$75.66(0.3) + 25.74 = 48.43$

$V_{tot}(5) = 48(5) = 240 \text{ gal}$

FIGURE D5 **WELL DEVELOPMENT LOG**

Project: Five Points
Well Number: MW-102
Date: 4-1-10
Start of Purging: 1120
End of Purging: 1225
Water Quality Meter: Eureka
Depth of Pump Intake (ft BTOC): 132' btoc

Location: Bountiful, UT
Total Depth (ft BTOC): ~~165~~ ~~135~~ 134.4'
Depth to Water (ft BTOC): 106.95 btoc
Length of Water Column (ft): 28.05'
Casing Diameter (in): 4"
Calculated Purge Vol (gal): 174.2
Method/Equip: 3" grundfos pump
Disposition of Purge Water:
Silt in well at 133.6' btoc
Hard bottom at 134.4' btoc

Time	Vol. (gal)	Clarity/ Color	Turb (NTU)	Temp (°C)	pH	Cond (µS/cm)	Eh	DO (mg/L)	Notes and Comments
1125	~~10~~ 20	Brown	6115	12.97	7.65	1.622	17	6.53	Chocolate Milk color
1129	35	Lt. Brown	6115	15.50	7.44	1.740	20	6.78	Slightly Lighter color
1138	70		2360	16.11	7.24	1.664	-39	5.16	
1147	105		554	15.87	7.12	1.649	-37	5.28	
1156	140		271.5	15.82	7.09	1.640	-33	5.27	
1205	175		139.2	15.39	7.16	1.647	-12	5.77	
1214	210		105.7	15.65	7.04	1.642	-17	5.35	
1223	245		105.4	15.75	7.12	1.643	-12	5.46	
~~12~~									

Personnel Tim Binder

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URS

$H = 135 - 106.95 = 28.05$

① $V_{casing} = 28.05 \times 0.66 = 18.51$ gal.

② $V_{borehole} = 28.05 \times 2.6 = 72.93$ gal.

③ $72.93 - 18.51 = 54.42$ gal $= V_{sandpack}$

④ $(54.42 \times 0.3) = 16.33$

$16.33 + 18.51 = 34.84 = V_{total}$

$V_{total} \times 5 = 34.85 \times 5 = 174.2$ gal

FIGURE D5 **WELL DEVELOPMENT LOG**

Project: Five Points
Well Number: MW-103
Date: 4-1-10
Start of Purging: 0810
End of Purging: 0904
Water Quality Meter: Eureka
Depth of Pump Intake (ft BTOC): 123.1'

Location: Bountiful, UT
Total Depth (ft BTOC): ~~125~~ ~~124.7'~~ 125.1'
Depth to Water (ft BTOC): 103.51
Length of Water Column (ft): 21.49
Casing Diameter (in): 4
Calculated Purge Vol (gal): 133.45
Method/Equip: 3" grundfos pump
Disposition of Purge Water:
Silt in well at 124.4' btoc
Hard well bottom at ~~124.7'~~ btoc 125.1'

Time	Vol. (gal)	Clarity/ Color	Turb (NTU)	Temp (°C)	pH	Cond (µS/cm)	Eh	DO (mg/L)	Notes and Comments
0812	1								0.5 gpm @ 0810
									2.0 gpm @ 0814
0827	26								1 casing vol. probe well bottoming
0828									increase flow to 4 gpm
0835	52								cleaning to under 1000 NTU
0842	78								
0849	104								flowing almost completely clear
0856	130								flowing clear
0903	156								flowing very clear

Personnel Tim Binder

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URS

103.51 btoc

$H = 125 - 103.51 = 21.49$ ft.

$V_{casing} = 21.49 \times 0.66 = 14.18$ gal.

$V_{borehole} = 21.49 \times 2.6 = 55.87$ gal.

$V_{sandpack} = 55.87 - 14.18 = 41.69$ gal.

$V_{tot} = (41.69 \times 0.3) + 14.18 = 26.69$ gal.

5 volumes $= 26.69 \times 5 = 133.45$ gal.

WELL DEVELOPMENT LOG

Project: 5 Points PCE Plume 24584937
Well Number: MW-104
Date: 12-9-10
Start of Purging: 1356
End of Purging: —
Water Quality Meter: —
Depth of Pump Intake (ft BTOC): 133 bgs
Water meter start @ 153,215 gal.
Stop @ ~~153,3~~ 153,550 gal.

Location: Woods Cross, UT
Total Depth (ft BTOC): 135.30
Depth to Water (ft BTOC): 83.69
Length of Water Column (ft): 51.61
Casing Diameter (in): 4"
Calculated Purge Vol (gal): 334.65
Method/Equip: Surge block / 3" grundfos pump
Disposition of Purge Water: —

Time	Vol. (gal)	Clarity/ Color	Turb (NTU)	Temp (°C)	pH	Cond (µS/cm)	Eh	DO (mg/L)	Notes and Comments
1357	—	—	—	—	—	—	—	—	Brown, turbid, 10 gpm
1604	75								Moderate turbidity, 10gpm
1611	155								Clear, 10 gpm
1619	235								Clear, 10gpm
1629	335	—	—	—	—	—	—	—	Very clear, 10 gpm

Personnel Tim Binder

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WELL DEVELOPMENT LOG

Project: 5 Points PCE Plume 24584937
Well Number: MW-~~18A~~ 105
Date: 12-9-10
Start of Purging: 1017
End of Purging: 1146
Water Quality Meter: NA
Depth of Pump Intake (ft BTOC): 153,040 151 bgs
Water meter start @ ~~15,3040~~ gal. ~~(5 gpm)~~

Location: Woods Cross, UT
Total Depth (ft BTOC): 153.2
Depth to Water (ft BTOC): 128.16
Length of Water Column (ft): 25.04
Casing Diameter (in): 4"
Calculated Purge Vol (gal): 162.35
Method/Equip: Surge Block / Grundfos Pump (3")
Disposition of Purge Water: —

Time	Vol. (gal)	Clarity/ Color	Turb (NTU)	Temp (°C)	pH	Cond (µS/cm)	Eh	DO (mg/L)	Notes and Comments
1018									Brown, very turbid - 7 gpm
1021									" - 2.2 gpm
1047									Moderate turbidity - 2.2 gpm
1111	100								Very clear, - 2.2 gpm
1128	133								Very clear, 2.2 gpm
1142	158								Very clear, 2.2 gpm
1146	165								Very clear

Personnel Tim Binder

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URS

2.61 gal/ft. 8"
.65 gal/ft. 4"

- get 8" # and multiply 1/3 for porosity
- add back in 4" #

MW- ~~104~~ 105

8" vol. = 2.61 gal/ft. x 25.04 ft. = 65.35 gal ~~x 0.33 (porosity) = 21.57 gal.~~

4" vol = 0.65 gal/ft. x 25.04 ft. = 16.28 gal

Annulus vol. = 65.35 gal - 16.28 gal. = 49.07 x 0.33 (porosity) = 16.19 gal

Total well vol = 16.28 gal + 16.19 gal = 32.47 gal

Well vol. x 5 = 162.35 gal.

WELL DEVELOPMENT LOG

Project: 5 Points PCE Plume
Well Number: MW-106
Date: 1-18-11
Start of Purging: —
End of Purging: —
Water Quality Meter: —
Depth of Pump Intake (ft BTOC): —

Location: Woods Cross, UT
Total Depth (ft BTOC): 70'
Depth to Water (ft BTOC): 46'
Length of Water Column (ft): —
Casing Diameter (in): 4"
Calculated Purge Vol (gal): 160
Method/Equip: —
Disposition of Purge Water: —

Time	Vol. (gal)	Clarity/ Color	Turb (NTU)	Temp (°C)	pH	Cond (µS/cm)	Eh	DO (mg/L)	Notes and Comments
1105	15	lt. brown	—	—	—	—	—	—	Well goes dry upon pumping @0.5 gpm
				Tue					

Personnel J. Binder

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URS

URS

MW - 10B 45.91' bgs

8" vol. = 2.61 gal/ft. x 24.09 ft. = 62.89 gal.

4" vol. = 0.65 gal./ft. x 24.09 ft. = 15.66 gal.

Ann. Vol. = 62.89 gal - 15.66 gal. = 47.23 gal x 0.33 (porosity) = 15.59 gal.

Total Vol. = 15.66 gal. + 15.59 gal. = 31.25 gal.

Purge Vol. = 31.25 x 5 = 156.25 gal.

WELL DEVELOPMENT LOG

Project: 5 Points PCE Plume
Well Number: MW-107
Date: 1-17-11
Start of Purging: —
End of Purging: —
Water Quality Meter: —
Depth of Pump Intake (ft BTOC): —

Location: Woods Cross, UT
Total Depth (ft BTOC): —
Depth to Water (ft BTOC): —
Length of Water Column (ft): —
Casing Diameter (in): —
Calculated Purge Vol (gal): 154.6
Method/Equip: —
Disposition of Purge Water: —

Time	Vol. (gal)	Clarity/ Color	Turb (NTU)	Temp (°C)	pH	Cond (µS/cm)	Eh	DO (mg/L)	Notes and Comments
1500	160	Clear	—	—	—	—	—	—	Pumped at 2.5 gpm

Personnel T. Binder

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URS

URS

MW-107

8" vol. = 2.61 gal/ft. x 23.84 ft. = 62.22 gal.

4" vol. = 0.65 gal/ft. x 23.84 ft. = 15.50 gal.

Ann. vol. = 62.22 gal - 15.50 gal = 46.72 gal. x 0.33 (porosity) =
15.42 gal.

Total vol. = 15.50 gal + 15.42 gal. = 30.92 gal.

Well vol. x 5 = 154.6 gal

WELL DEVELOPMENT LOG

Project: FIVE POINTS PCE PLUME
Well Number: MW-106M
Date: 1/17/12
Start of Purging: 1047
End of Purging: 1700
Water Quality Meter: Eureka
Depth of Pump Intake (ft BTOC): 130 - 147.90

Location: Davis County, Utah
Total Depth (ft BTOC): 147.90
Depth to Water (ft BTOC): 46.39
Length of Water Column (ft): 101.51
Casing Diameter (in): 2"
Calculated Purge Vol (gal): 104
Method/Equip: bail/surge/2" grundfos pump
Disposition of Purge Water: BOW. 1200 N. W. Bountiful

Time	Vol. (gal)	Clarity/ Color	Turb (NTU)	Temp (°C)	pH	Cond (µS/cm)	DO	ORP	Notes and Comments
1047	initial	mud	~~[illegible]~~	12.24	8.46	1.559	3.04	-144	bailing
1120	5	mud	3247	12.90	8.35	1.666	1.82	-165	after surge
1139	10	mud	3112	12.85	8.16	1.520	2.57	-204	
1145	20	mud	4502	13.26	8.19	1.649	2.59	-167	purged dry @ 21 gal
1316	35	mud	9457	13.02	8.29	1.407	2.91	-202	slow recovery, can't pump
1451	65	mud/cloudy	6020	13.02	7.77	1.443	1.64	-197	long w/out purging dry
1519	73	cloudy	2909	13.70	7.76	1.423	2.68	-186	
1630	85	cloudy	2694	15.90	7.50	1.443	4.86	-169	~~pump down~~ placed in probes
1658	94	cloudy/clear	1496	14.74	7.56	1.454	3.48	-131	
									final purge 94 gal

Personnel Chris Howell

URS

WELL DEVELOPMENT LOG

Project: FIVE POINTS PCE PLUME
Well Number: MW-106D
Date: 1/17/12
Start of Purging: 828
End of Purging: 1115 (160 gal)
Water Quality Meter: Eureka
Depth of Pump Intake (ft BTOC): 170 - 195'

Location: Davis County, Utah
Total Depth (ft BTOC): 195.38
Depth to Water (ft BTOC): 48.76
Length of Water Column (ft): 146.62
Casing Diameter (in): 2"
Calculated Purge Vol (gal): 124
Method/Equip: bail / surge / 2" grundfos pump
Disposition of Purge Water: 1800 W. 1200 N W. Bountiful

Time	Vol. (gal)	Clarity/ Color	Turb (NTU)	Temp (°C)	pH	Cond (mS/cm)	DO	ORP	Notes and Comments
826	initial	mud	out range	13.74	8.24	0.899	1.01	-183	1st bailer
911	5	mud	1055	12.37	8.40	1.133	1.31	-201	after surging
1022	10	mud	1019	13.44	8.42	1.516	2.09	-87	
1027	25	cloudy/mud	1987	13.49	7.81	1.145	4.38	-113	
1032	40	cloudy/brown	2176	13.47	7.66	1.135	5.90	-73	
1038	55	cloudy	1609	13.10	7.73	1.130	5.76	-74	
1043	70	cloudy/clear	1575	13.17	7.68	1.140	6.37	-59	
1049	85	cloudy/clear	1192	13.47	7.81	1.134	4.61	-104	
1054	100	clear/cloudy	664	13.52	7.47	1.138	5.32	-77	
1058	115	clear/milky	928	13.57	7.46	1.142	5.26	-73	
1102	130	clear/milky	640	13.45	7.42	1.137	5.36	-65	
1109	150	clear/milky	928	13.53	7.40	1.142	5.32	-58	

Personnel Chris Howell

URS

WELL DEVELOPMENT LOG

Project: FIVE POINTS PCE PLUME
Well Number: MW-107 M
Date: 1/16/12
Start of Purging: 1025
End of Purging: 1317
Water Quality Meter: Eureka
Depth of Pump Intake (ft BTOC):
bail + surge 0-
2" pump @

Location: Davis County, Utah
Total Depth (ft BTOC): 144.80 (147) Driller
Depth to Water (ft BTOC): 45.43
Length of Water Column (ft): 99.37'
Casing Diameter (in): 2
Calculated Purge Vol (gal): 103
Method/Equip: bailer / 2" pump
Disposition of Purge Water:
1800 W, 1200 N W. Bountiful

Time	Vol. (gal)	Clarity/ Color	Turb (NTU)	Temp (°C)	pH	Cond (µS/cm)	DO	ORP	Notes and Comments
1025	initial	mud/brown	2509	12.01	7.98	1.475	4.38	75	1st bail
1105	<	muddy	2085	13.70	8.14	1.493	1.72	-119	after surging
1147	10	muddy	3085	13.44	8.14	1.565	2.24	-144	2" pump
1157	35	muddy	9045	13.79	7.67	1.548	3.26	-157	~2.5 gpm, purged dry @ 38 gal
1204	42	muddy/clear	3327	13.18	7.33	1.516	3.34	-126	~1 gpm after restarting
1216	54	milky	1981	13.72	7.28	1.521	3.41	-119	
1226	64	milky/clear	1170	13.79	7.26	1.525	4.00	-111	
1235	73	clear/milky	763	13.58	7.25	1.532	4.24	-102	
1245	83	clear/milky	467	13.22	7.44	1.517	4.56	-101	
1255	93	clear/milky	335.2	13.57	7.25	1.535	4.50	-103	
1305	103	milky/clear	2501	14.11	7.24	1.528	4.10	-105	turned up purge
1315	115	clear/milky	536	13.72	7.49	1.518	4.93	-104	

Personnel Chris Howell

URS

WELL DEVELOPMENT LOG

Project: FIVE POINTS PCE PLUME
Well Number: MW-107D
Date: 1/16/12
Start of Purging: 1238
End of Purging: 1600
Water Quality Meter: Eureka
Depth of Pump Intake (ft BTOC): 180 - 198'

Location: Davis County, Utah
Total Depth (ft BTOC): 198.13
Depth to Water (ft BTOC): 46.76
Length of Water Column (ft): 151.37'
Casing Diameter (in): 2"
Calculated Purge Vol (gal): 130 gal
Method/Equip: bail/surge/2" grundfos pump
Disposition of Purge Water: 1800W, 1200N, W. Bountiful

Time	Vol. (gal)	Clarity/ Color	Turb (NTU)	Temp (°C)	pH	Cond (µS/cm)	DO	ORP	Notes and Comments
1238	initial	mud/brown	610	13.08	8.16	1.214	1.67	-129	bailer
1310	4	mud	1790	13.55	8.26	1.210	2.55	-144	after surging
1338	14	mud	3156	14.19	8.20	1.277	1.07	-173	~2.5 gpm
1348	30	mud	10500	14.14	8.12	1.264	2.22	-172	pumping rate decreasing ~1.0 gpm
1355	40	mud/milky	3984	14.91	7.70	1.164	4.64	-132	
1418	46	milky/clear	1159	14.10	7.43	1.154	5.40	-87	increasing @ 42 gal allow to recover
1428	56	milky	463	14.50	7.43	1.144	5.07	-83	
1444	68	clear/milky	895	14.94	7.39	1.144	4.93	-87	
1500	83	clear/milky	393.0	15.18	7.38	1.162	5.96	-67	
1510	93	clear/milky	563	14.72	7.51	1.144	5.76	-55	
1520	103	clear/milky	457	14.99	7.34	1.153	5.82	-60	
1530	113	clear/milky	363.6	14.66	7.35	1.149	5.97	-57	
1540	123	clear/milky	386.1	14.72	7.34	1.146	5.91	-60	
1550	133	clear/milky	557	14.64	7.32	1.149	5.80	-60	

Personnel Chris Howell

URS

Static Water Level Log

Site: Five Points PCE Plume (nearby wells) Personnel: S. DeYoung Page 1 of 1

Well ID	Date	Depth to Product	Depth to Water	Product Thickness	Total Depth	PID	Well Condition: Comment
MW#2-2004	3/16/10		103.53				Measuring point = North side TOC
MW#1-2004	3/16/10		100.65				" "
Mall Well #2	3/16/10		122.91 *		124'		Measuring point = East side TOC (North side destroyed)
Mall Well #1	3/16/10		DRY		135'		TD = 135' Measuring point = North side TOC
1998-MW #1	3/16/10		DRY		145'		TD = 145' " "
							* DTW @ Mall Well #2 approximate due to destroyed nature
							of well casing inside vault.

(Signature) 3/16/10 (Date)

URS

Static Water Level Log

Site: 5 Points Personnel: S. DeYoung Page 1 of 1

Well ID	Date	Depth to Product	Depth to Water	Product Thickness	Total Depth	PID	Well Condition Comment
MW-103	4/6/10	—	103.50		125.01		North side TOC
MW-102	4/6/10		106.09		134.22		" "
MW#2-2004	4/7/10		103.10		116.05		" "
MW#1-2004	4/7/10		100.17		113.30		" "
MW-101	4/7/10		143.32		~195		" "
" "	4/8/10		143.28				

(Signature) (Date)

URS

Static Water Level Log

Site: Five Points PCE Plume Personnel: Jeff Dunn Page 1 of 1

Well ID	Date	Depth to Product	Depth to Water	Product Thickness	Total Depth	PID	Well Condition Comment
MW-2	6/9/10	None	103.49	NA	114.89	NM	MW-2 2004 very soft bottom good condition
MW-1	6/9/10	None	100.58	NA	111.71	NM	MW-1 2004 soft bottom good condition
MW-103	6/9/10	None	103.95	NA	125.03	NM	Needs lock
MW-102	6/9/10	None	107.45	NA	134.15	NM	Needs lock
MW-101	6/9/10	None	143.88	NA	185.12	NM	Needs lock
Mall well 1	6/9/10	None	DRY	NA	134.35	NM	Surface completion and completion cap are in very bad condition. Well cap is destroyed. This well is in the parking lot of the Maverik gas station and should be abandoned
MW-1	6/9/10	None	Dry	NA	145.20	NM	Completion cap is broken. Well should be abandoned. This is the upgradient well located in the parking lot of the park.
Mall well 2	6/9/10	None	Dry	NA	123.40	NM	Surface completion looks good but the well itself is in very poor condition. Well has nearly been destroyed by sidewalk construction. This well should be abandoned.

Jeff Dunn
(Signature)

6/9/2010
(Date)

URS

Static Water Level Log

Site: 5-Points Bountiful/WX Personnel: Jeff Dunn Page 1 of 1

Well ID	Date	Depth to Product	Depth to Water	Product Thickness	Total Depth	PID	Well Condition: Comment
MW-101	8/24/10	NA	150.61	NA	185.40	NM	Wells looks good
MW-102	↓	NA	114.76	NA	134.16	NM	
MW-103		NA	111.74	NA	124.95	NM	
MW-1		NA	108.68	NA	111.66	NM	
MW-2	↓	NA	111.95	NA	114.90	NM	

Jeff Dunn 8/24/10

Jeff Dunn 8/24/10

Jeff Dunn
(Signature)

8/24/10
(Date)

~3 ft

URS

Static Water Level Log

Site: 5 Points Personnel: Jeff Dunn Page 1 of 1

Well ID	Date/Time	Depth to Product	Depth to Water	Product Thickness	Total Depth	Well Condition: Comment
MW1-2004	9/20/10	—	107.80	—	111.66	Wells look good
MW-101	9/20/10	—	150.05	—	185.40	
MW2-2004	9/20/10	—	111.00	—	119.85	
MW-103	9-20-10	—	110.85	—	124.95	
MW-102	9/20/10	—	113.96	—	134.16	

Jeff Dunn 9-20-10

Jeff Dunn 9-20-10

(Signature) Jeff Dunn 9-20-10 (Date)

URS

Static Water Level Log

Site: Five Points T. Binder Page 1 of 1

Well ID	Date	Depth to Water	Total Depth	PID	Well Condition Comment
MW-2-2004	11-18-10	104.91	114.32		
MW-1-2004	11-18-10	102.10	111.18		
MW-103	11-18-10	105.50	129.97		
MW-102	11-18-10	108.95	134.05		
MW-101	11-18-10	145.36	185.10		

(Signature) 11-18-10 (Date)

URS

Static Water Level Log

Site: Five Points PCE Plume **Personnel:** Chris Howell **Page** 1 **of** 1

Well ID	Date	Depth to Product	Depth to Water	Product Thickness	Total Depth	PID	Well Condition Comment
MW-101	12/21/10	–	142.97	–	NM	NM	
MW-102	12/21/10	–	106.49	–	NM	NM	
MW-103	12/21/10	–	103.08	–	NM	NM	
MW-104	12/21/10	–	83.61	–	NM	NM	
MW-1-2004	12/21/10	–	99.68	–	NM	NM	
MW-2-2004	12/21/10	–	102.56	–	NM	NM	
MW-5	12/21/10	–	127.70	–	NM	NM	

(Signature) 12/21/10 (Date)

URS

Static Water Level Log

Site: 5 Points Bountiful, UT Page 1 of 1

Well ID	Date	Depth to Water	Total Depth	PID	Well Condition: Comment
MW-107	1-17-11	46.16	69'		Pre development water level
MW-101	"	142.17	189?		Difficult to get exact TD
MW-102	"	105.73	134?		
MW-103	"	102.36	—		No TD. Hydrasleeve already in well
MW1-2004	"	99.04	111.51		
MW2-2004	"	101.95	TB ~~101.95~~	114.62	
MW-104	"	82.92	135.5?		
MW-105	"	127.06	157?		
MW-106	"	45.91	70'		Pre development water level

(Signature) (Date)

URS

Static Water Level Log

Site: Five-Points PCE Plume J. Dunn overcast weather **Page** 1 **of** 1

Well ID	Date	TOC elevation	Depth to Water	Total Depth	Well Condition / Comment
MW1-2004	3/3/2011	4356.198	97.98	111.21	Well and vault look good
MW2-2004		4358.658	100.92	114.28	Vault filled with water no leaking into well
MW-101		4401.525	140.89	185.18	Vault filled with water, no leakage into well
MW-102		4363.899	104.66	134.31	Vault had water in it.
MW-103		4359.972	101.28	124.98	Well and vault look good
MW-104		4339.47	82.00	140.32	Well and vault look good
MW-105		4384.69	125.92	153.31	Vault filled with water, no leakage into well
MW-106		4305.18	45.41	68.95	Well and vault look good
MW-107		4307.27	47.38	69.30	Well and vault look good

Jeff D Dunn
(Signature)

3-3-2011
(Date)

URS

Static Water Level Log

Site: Five-Points PCE Plume **Page 1 of 1**

Well ID	Date	TOC elevation	Depth to Water	Total Depth	Well Condition / Comment
MW1-2004	3-16-11	4356.198	97.65	111.15	Well & vault look good
MW2-2004	↓	4358.658	100.63	114.32	well vault filled with water
MW-101	↓	4401.525	140.30	185.15	well vault filled with water
MW-102	↓	4363.899	104.25	134.32	well vault filled with water
MW-103	↓	4359.972	100.91	125.00	well and vault look good
MW-104	↓	4339.47	81.72	135.51	well and vault look good
MW-105	↓	4384.69	125.56	153.15	well vault filled with water
MW-106	↓	4305.18	46.60	69.28	well and vault look good
MW-107	↓	4307.27	45.04	68.84	well and vault look good
WC #2	↓	~4310.00	65.22	Not measured	Measurement point ~ +5.5" above "surface elevation" may be able to sample
WC #3	↓	~4260.00	28.64	Not measured	measurement point ~ 11.5" above "surface elevation"
WC #4	↓	~4262.50	24.00	Not measured	very near measurement point. Had to use WC meter not as acurate

Jeff Dunn
(Signature)

3-16-2011
(Date)

URS

Static Water Level Log

Site: Five-Points PCE Plume

Well ID	Date	TOC elevation (ft amsl)	Depth to Water (feet btoc)	Total Depth (ft btoc)	Well Condition / Comment
MW1-2004	April 4, 2011	4356.198	97.20	111.15	well ok.
MW2-2004		4358.658	100.05	114.30	well ok.
MW-101		4401.525	139.82	185.15	well vault filled with surface water.
MW-102		4363.899	103.75	134.30	well vault filled with surface water.
MW-103		4359.972	100.46	125.01	well ok.
MW-104		4339.47	81.23	135.50	well ok.
MW-105		4384.69	125.15	153.15	well vault filled with surface water.
MW-106		4305.18	46.36	69.28	well vault filled with surface water.
MW-107		4307.27	44.86	68.84	well vault filled with surface water
WC#2		To Be determined	64.75	Not Measured	Bottom of sounding PVC pipe measured 128.10'
WC #4		to be determined	21.73	Not Measured	

Jeff Dunn
(Signature)

April 4, 2011
(Date)

URS

Static Water Level Log

Site: 5 Points Personnel: S. DeYoung Page 1 of 1

Well ID	Date	Depth to Product	Depth to Water	Product Thickness	Total Depth	PID	Well Condition: Comment
MW-106s	1/31/12	—	37.84	—	69.80	—	
MW-106i		—	39.94	—	148.00	—	
MW-106d		—	44.16	—	194.60	—	
MW-107s		—	36.89	—	68.90	—	
MW-107i		—	40.70	—	148.12	—	
MW-107d		—	40.76	—	203.05	—	
MW-103		—	90.80	—	124.91	—	Tether, weight, + clamp in hole
MW-105		—	115.30	—	156.00	—	Tether, weight, + clamp in hole
MW2-2004		—	90.54	—	114.54	—	Tether, weight, ~~+ clamp~~ in hole
MI-2004		—	87.52	—	112.08	—	Tether + weight in hole
MW-104		—	71.70	—	135	—	Tether, weight, + clamp in hole
* MW-101		—	129.18	—	155	—	" "

(Signature) 1/31/12 (Date)

* check this wl when sampling

URS

Static Water Level Log

Site: Five Points Personnel: S. DeYoung Page 1 of 1

Well ID	Date	Depth to Product	Depth to Water	Product Thickness	Total Depth	PID	Well Condition: Comment
WC #3	2/2/12	—	15.21	—	Not measured		pump in well (measured from top of MP)
WC #5	2/2/12	—	At surface	- artesian	Flowing		pump in well (
WC #4	2/2/12	—	12.80		Not measured		pump in well (measured from top of MP)
MW-102	2/2/12	—	94.10	—	134?		Tether length = 124', Has tether, clamp, + wt. + good cap

(Signature) 2/2/12 (Date)

URS

Static Water Level Log

Site: Five Points Personnel: S. Lundmark / C. Howell Page 1 of 1

Well ID	Date	Depth to Product	Depth to Water	Product Thickness	Total Depth	PID	Well Condition: Comment
Freda	5/10/12	—	21.89	—	NM - 420 ft		
MW-106i		—	41.02	—	147.80		Hard bottom
MW-106d		—	42.85	—	192.50		Silted
MW-104		—	72.85	—	135.29		
MW2-2004		—	91.85	—	114.68		
MW1-2004		—	88.64	—	111.60		Lost ~ 5" weight in well
MW-101		—	131.38	—	185.11		
MW-103		—	91.93	—	124.89		Silt on bottom
MW-102		—	95.35	—	NM	☆☆☆	Well not sampled - just WL when borrowed weight ☆
MW-105		—	116.37	—	157.10		Difficult to tell where bottom is - soft bottom
MW-107i		—	42.00	—	148.10		
MW-107d		—	41.94	—	203.05		
							NM = not measured

Aurora Lundmark (Signature) 5/10/12 (Date)

URS

Key # 3210

5-POINTS GROUNDWATER SAMPLING FORM

Monitoring Well	Sample (Yes/No)	Sample Depth (Hydrasleeve ft BTOC)	Screen Interval (ft BGS)	Hydrosleeve Set Date	Hydrosleeve Set Time	QA/QC (include TB per cooler)	Sample Date	Sample Time	Depth to Water (11/26/12)	Total Depth (11/26/12)	Comments
MW 1-2004	Yes	~~112~~ 109	82-112	11/26/12	1500	FD	11/28/12	1510	49.91	111.17	FD (MW91 @ 1530)
MW 2-2004	Yes	111	90-116	11/26/12	1430	NA	11/28/12	1445	103.05	115.18	
MW-101	Yes	158	155-185	11/26/12	1320	NA	11/28/12	1315	142.51	185.10	
MW-102	No		115-135								
MW-103	Yes	116	105-125	11/26/12	1355	NA	11/28/12	1355	103.12	124.93	
MW 104	Yes	120	115-135	11/26/12	1410	NA	11/28/12	1415	84.02	135.28	
MW 105	Yes	146	136-156	11/26/12	1340	MS/MSD	11/28/12	1335	127.91	153.09	
MW 106s	No								49.16	59.28	
MW 106i	Yes	145	138-148	11/26/12	1230	NA	11/28/12	1145	51.94	147.58	
MW 106d	Yes	195	188-198	11/26/12	1240	NA	11/28/12	1200	51.90	200.25	verified TD 11/28/12
MW 107s	No								45.45	60.86	
MW 107i	Yes	145	138-148	11/26/12	1150	NA	11/28/12	1110	52.60	148.20	
MW 107d	Yes	200	193-203	11/26/12	1210	NA	11/28/12	1120	52.81	205.20	
MW-108I	Yes	149	140-150	11/26/12	900	NA	11/28/12	915	31.85	157.60	
MW-108D	Yes	214	204-214	11/26/12	920	NA	11/28/12	930	34.08	217.41	
MW-109I	Yes	169	160-170	11/26/12	1050	NA	11/28/12	1045	35.62	174.40	Film New gasket 1263/1432
MW-109D	Yes	230	210-220	11/26/12	1100	NA	11/28/12	1100	39.90	227.08	film
MW-110I	Yes	208	198-208	11/26/12	830	NA	11/28/12	830	21.66	211.10	
MW-110D	Yes	301	292-302	11/26/12	845	NA	11/28/12	845	24.60	300+	deeper than tape.
Freda 193-196	Yes	196	Multiple	11/26/12	1005	NA	11/28/12	950	25.63	NM	599
Freda 218-221	Yes	221	Multiple	11/26/12	1010	NA	11/28/12	955			622
Freda 333-336	Yes	336	Multiple	11/26/12	1015	NA	11/28/12	1000			737
New Well	No										
WC-2	No										
WC-3	No										
WC-4	No										

Comments/Notes

Update grey highlighted cells based on water level data for current round of sampling (Depths shown are for 8/30/12)

Sampling Personnel: [signature]

Page 1 of 1

NS = Not Sampled NM = Not Measured NA = Not Applicable

URS

PR requested

5-POINTS GROUNDWATER SAMPLING FORM

Monitoring Well	Sample (Yes/No)	Screen Interval (ft BGS)	Water Level Date	Depth to Water	Total Depth	Proposed Sample Depth (Hydrasleeve ft BTOC)	Actual Hydrasleeve Set Depth	Hydrosleeve Set Date	Hydrosleeve Set Time	QA/QC (include TB per cooler)	Sample Date	Sample Time	Comments
MW 1-2004	Yes	82-112	2/21/13	97.54	111.17	112	101	2/21/13	1515	FD	2/26/13	1400	FD (MW-91 @ 1405)
MW 2-2004	Yes	90-116		100.56	115.18	111	~~93~~ 104	2/21/13	1450	NA	2/26/13	1415	added 2 weights
MW-101	Yes	155-185		140.37	185.09	158	158	2/21/13	1400	NA	2/26/13	1530	added 1 weight
MW-102	No	115-135		104.11	134.05								
MW-103	Yes	105-125		100.81	124.93	116	108	2/21/13	1435	NA	2/26/13	1430	added 1 weight
MW 104	Yes	115-135		81.60	135.30	120	120	2/21/13	1535	NA	2/26/13	1335	
MW 105	Yes	136-156		125.48	153.11	146	140	2/21/13	1335	~~MS/MSD~~	2/26/13	1450	top of screen
MW 106s	No	60-70		46.70	69.28								
MW 106i	Yes	138-148		49.39	147.63	145	145	2/21/13	830	NA	2/26/13	1305	
MW 106d	Yes	188-198		49.55	198.38	195	195	2/21/13	835	NA	2/26/13	1315	WL slowly rising
MW 107s	No	60-70		45.44	60.88								
MW 107i	Yes	138-148		50.28	148.20	145	145	2/21/13	750	NA	2/26/13	1235	
MW 107d	Yes	193-203		50.34	205.20	200	200	2/21/13	800	NA	2/26/13	1245	WL slowly rising
MW-108I	Yes	140-150		26.60	157.60	149	149	2/21/13	900	NA	2/26/13	915	
MW-108D	Yes	204-214		31.19	217.40	214	214	2/21/13	905	NA	2/26/13	920	
MW-109I	Yes	160-170		32.91	177.32	169 ?	167	2/21/13	1210	NA	2/26/13	1000	
MW-109D	Yes	210-220		37.06	223.30	230 ?	215	2/21/13	1200	NA	2/26/13	1010	
MW-110I	Yes	198-208		20.26	211.10	208 202	206	2/21/13	1245	~~MS/MSD~~	2/26/13	1105	added extra 4" wt
MW-110D	Yes	292-302		24.15	300	302 294	298	2/21/13	1230	NA	2/26/13	1115	
Freda 193-196	Yes	Multiple		27.32	NM	196	196	2/21/13	1015	NA	2/26/13	10:30	
Freda 218-221	Yes	Multiple				221	221	2/21/13	1020	NA	2/26/13	10:35	
Freda 333-336	Yes	Multiple				336	336	2/21/13	1025	NA	2/26/13	10:40	
New Well	No												
WC-2	No	Multiple		64.60	NM								Survey mark may have changed, measured top of wooden board
WC-3	No	220-393		26.43	NM								
WC-4	No	260-380		22.3	NM								

Comments/Notes

Update grey highlighted cells based on water level data for current round of sampling (Depths shown are for 8/30/12). Hydrasleeve should be set at 3 feet below top of water.

LOCK #: 3210

Sampling Personnel: [signature]

Page 1 of 1

NS = Not Sampled NM = Not Measured NA = Not Applicable

URS

NSL 1100N. no sampling/measuring point.

(108) 17.7 ft 115'N

GROUNDWATER SAMPLING FORM

Project: Five Points (Screening Sample)
Sample Location: MW-101
Sample ID: SP-MW101-155165
Sample Date: 3/10/10
Sample Time: 9:00
QA/QC Sample (Type and ID): —
Water Quality Meter: —
Depth of Pump Intake (BTOC): —
Sample Filtered: (Y/N) **Analyte:**

~~PID Screen~~: Casing set @ 155' bgs
Total Depth (~~BTOC~~): 165' ~~(from drilling platform)~~
Depth to Water (~~BTOC~~): 165.30' (from drilling platform)
Depth of Water Column: Platform = 7' above ground (~7' of water)
Calculated Purge: —
Actual Purge: —
Sample Method: Bailer
Depth of Product: —
Filter Manufacture/Size: —

Time	Vol (gal)	Temp (°C)	Cond (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turb (NTU)	Notes and Comments

Sampling Personnel S. DeYoung / J. Dunn

Page 1 of 1

URS

GROUNDWATER SAMPLING FORM

Project: Five Points
Sample Location: MW-101
Sample ID: 5P-MW101-165185
Sample Date: 3/10/10
Sample Time: 11:00
QA/QC Sample (Type and ID): —
Water Quality Meter: —
Depth of Pump Intake (BTOC): —
Sample Filtered: (Y/N) Analyte:

PID Screen: Casing set @ 165' bgs
Total Depth (BTOC): 185' bgs
Depth to Water (BTOC): 153.06 (from platform)
Depth of Water Column: Platform = 7' above ground
Calculated Purge: —
Actual Purge: —
Sample Method: Bailer
Depth of Product: —
Filter Manufacture/Size: —

Time	Vol (gal)	Temp (°C)	Cond (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turb (NTU)	Notes and Comments

Sampling Personnel J. Dum / S. DeYang

Page 1 of 1

URS

GROUNDWATER SAMPLING FORM

Project: Five Points
Sample Location: MW-101
Sample ID: SP-MW101-185194
Sample Date: 3/10/10
Sample Time: 1310
QA/QC Sample (Type and ID): —
Water Quality Meter: —
Depth of Pump Intake (BTOC): —
Sample Filtered: (Y/N) **Analyte:**

PID Screen: Casing set @ 185' bgs
Total Depth (BTOC): 194' bgs
Depth to Water (~~BTOC~~): 156.22 (below platform, which is 7' above ground)
Depth of Water Column: DTW = 149.22' bgs
Calculated Purge: —
Actual Purge: —
Sample Method: Bailer
Depth of Product: —
Filter Manufacture/Size: —

Time	Vol (gal)	Temp (°C)	Cond (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turb (NTU)	Notes and Comments

Sampling Personnel J Dunn / S. DeYoung

Page 1 of 1

URS

GROUNDWATER SAMPLING FORM

Project: Five Points PCE Plume
Sample Location: MW-101
Sample ID: 5P-MW101-195205
Sample Date: 3/10/10
Sample Time: 14:45
QA/QC Sample (Type and ID): —
Water Quality Meter: —
Depth of Pump Intake (BTOC): —
Sample Filtered: (Y/(N)) Analyte:

PID Screen: Casing set @ 195' bgs
Total Depth (BTOC): 205' bgs
Depth to Water (BTOC): 156.32 (from platform, which is 7' above ground)
Depth of Water Column: DTW = 149.32' bgs
Calculated Purge: —
Actual Purge: —
Sample Method: Bailer
Depth of Product: —
Filter Manufacture/Size: —

Time	Vol (gal)	Temp (°C)	Cond (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turb (NTU)	Notes and Comments

Sampling Personnel S. DeYoung

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URS

GROUNDWATER SAMPLING FORM

Project: 5-Points PCE Plume
Sample Location: MW-101
Sample ID: SP-MW101-205225
Sample Date: 3/10/10
Sample Time: 17:05
QA/QC Sample (Type and ID): —
Water Quality Meter: —
Depth of Pump Intake (BTOC): —
Sample Filtered: (Y/N) Analyte:

PID Screen: Casing set @ 205' bgs
Total Depth (BTOC): 225' bgs
Depth to Water (BTOC): 155.12 below platform, which is 7' above ground
Depth of Water Column: DTW = 148.12' bgs
Calculated Purge: —
Actual Purge: —
Sample Method: Bailer
Depth of Product: —
Filter Manufacture/Size: —

Time	Vol (gal)	Temp (°C)	Cond (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turb (NTU)	Notes and Comments

Sampling Personnel S. DeYoung

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URS

GROUNDWATER SAMPLING FORM

Project: Five Points PCE Plume
Sample Location: MW-102
Sample ID: SP-MW102-105125
Sample Date: 3/16/10
Sample Time: 8:30
QA/QC Sample (Type and ID): —
Water Quality Meter: —
Depth of Pump Intake (BTOC): —
Sample Filtered: (Y/(N)) **Analyte:**

PID Screen: Casing set @ 105' bgs
Total Depth (BTOC): 125' bgs
Depth to Water (BTOC): 115.30' (from drilling platform, which is 7' above ground)
Depth of Water Column: DTW = 108.30' bgs
Calculated Purge: —
Actual Purge: —
Sample Method: Bailer
Depth of Product: —
Filter Manufacture/Size: —

Time	Vol (gal)	pH	Cond (µS/cm)	Temp (oC)	DO (mg/L)	ORP (mV)	Turb (NTU)	Notes and Comments

Sampling Personnel S. DeYoung

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URS

GROUNDWATER SAMPLING FORM

Project: Five Points PCE Plume
Sample Location: MW-102
Sample ID: SP-MW102-125145
Sample Date: 3/16/10
Sample Time: 10:15
QA/QC Sample (Type and ID): —
Water Quality Meter: —
Depth of Pump Intake (BTOC): —
Sample Filtered: (Y/N) **Analyte:**

PID Screen: Casing set @ 125' bgs
Total Depth (BTOC): 145' bgs
Depth to Water (BTOC): 116.90' from platform, which is 7' above ground
Depth of Water Column: 109.90' bgs
Calculated Purge: —
Actual Purge: —
Sample Method: Bailer
Depth of Product: —
Filter Manufacture/Size: —

Time	Vol (gal)	pH	Cond (µS/cm)	Temp (oC)	DO (mg/L)	ORP (mV)	Turb (NTU)	Notes and Comments

Sampling Personnel S. DeYoung

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URS

GROUNDWATER SAMPLING FORM

Project: Five Points PCE Plume
Sample Location: MW-102
Sample ID: SP-MW102-145165
Sample Date: 3/16/10
Sample Time: 12:15
QA/QC Sample (Type and ID): —
Water Quality Meter: —
Depth of Pump Intake (BTOC): —
Sample Filtered: (Y/N) Analyte:

PID Screen: Casing set @ 145' bgs
Total Depth (BTOC): 165' bgs
Depth to Water (BTOC): 118.35' below platform (which is 7' above ground)
Depth of Water Column: DTW = 111.35' bgs
Calculated Purge: —
Actual Purge: —
Sample Method: Bailer
Depth of Product: —
Filter Manufacture/Size: —

Time	Vol (gal)	pH	Cond (µS/cm)	Temp (oC)	DO (mg/L)	ORP (mV)	Turb (NTU)	Notes and Comments

Sampling Personnel S. DeYoung

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URS

GROUNDWATER SAMPLING FORM

Project: Five Points PCE Plume
Sample Location: MW-103
Sample ID: SP-MW103-095715
Sample Date: 3/19/10
Sample Time: 9:15
QA/QC Sample (Type and ID): —
Water Quality Meter: —
Depth of Pump Intake (BTOC): —
Sample Filtered: (Y/N) Analyte:

PID Screen: Casing set @ 95' bgs
Total Depth (BTOC): 115' bgs
Depth to Water (BTOC): 111.30' from platform, which is 7' above grade
Depth of Water Column: DTW = 104.30' bgs
Calculated Purge: —
Actual Purge: —
Sample Method: Bailer
Depth of Product: —
Filter Manufacture/Size: —

Time	Vol (gal)	Temp (°C)	Cond (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turb (NTU)	Notes and Comments

Sampling Personnel S. DeYoung

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URS

GROUNDWATER SAMPLING FORM

Project: Five Points PCE Plume
Sample Location: MW-103
Sample ID: SP-MW103-117135
Sample Date: 3/19/10
Sample Time: 11:00
QA/QC Sample (Type and ID): —
Water Quality Meter: —
Depth of Pump Intake (BTOC): —
Sample Filtered: (Y/N) **Analyte:**

PID Screen: Casing set @ 117' bgs
Total Depth (BTOC): 135' bgs
Depth to Water (BTOC): WL = 112.25' below platform, which is 7' above ground
Depth of Water Column: DTW = 105.25' bgs
Calculated Purge: —
Actual Purge: —
Sample Method: Bailer
Depth of Product: —
Filter Manufacture/Size: —

Time	Vol (gal)	Temp (°C)	Cond (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turb (NTU)	Notes and Comments

Sampling Personnel S. DeYoung

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URS

GROUNDWATER SAMPLING FORM

Project: Five Points PCE Plume
Sample Location: MW-103
Sample ID: 5P-MW103-135155
Sample Date: 3/19/10
Sample Time: 13:00
QA/QC Sample (Type and ID): —
Water Quality Meter: —
Depth of Pump Intake (BTOC): —
Sample Filtered: (Y/N) Analyte:

PID Screen: Casing set @ 135'
Total Depth (BTOC): 155' bgs
Depth to Water (BTOC): WL = 113.50' below platform, which is 7' above ground
Depth of Water Column: DTW = 106.50' bgs
Calculated Purge: —
Actual Purge: —
Sample Method: Bailer
Depth of Product: —
Filter Manufacture/Size: —

Time	Vol (gal)	Temp (°C)	Cond (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turb (NTU)	Notes and Comments

Sampling Personnel S. DeYoung

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URS

GROUNDWATER SAMPLING FORM

Project: 5 Pts
Sample Location: MW-103
Sample ID: SP-MW103
Sample Date: 4/6/10
Sample Time: ~~SP-MW103~~ 14:55
QA/QC Sample (Type and ID): Field Dup SP-MW103-4 @ 15.00
Water Quality Meter: Horiba U-22
Depth of Pump Intake (BTOC): mid-screen
Sample Filtered: (Y/N) **Analyte:**

PID Screen: —
Total Depth (BTOC): 125.01
Depth to Water (BTOC): 103.50
Depth of Water Column: 21.51
Calculated Purge: low-flow
Actual Purge: 7L
Sample Method: bladder pump
Depth of Product: —
Filter Manufacture/Size: —

Time	Vol ~~(gal)~~ L	Temp (°C)	Cond (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turb (NTU)	Notes and Comments
14:15	0	17.98	1.71		7.07	74	231	~ 360 mL/min
14:20	1	16.67	1.67	8.0	6.88	79	158	Zero drawdown WL = 103.50' BTOC
14:25	2	16.43	1.66	6.90	6.82	83	140	
14:30	3	16.46	1.66	6.28	7.06	75	134	
14:35	4	16.38	1.66	6.08	7.39	56	138	
14:40	5	16.32	1.65	5.35	7.88	39	138	
14:45	6	16.36	1.66	5.38	8.00	39	132	
14:50	7	16.28	1.65	5.32	7.93	37	140	

Sampling Personnel S. DeYoung / J. Dunn

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URS

GROUNDWATER SAMPLING FORM

Project: Five Points PCE Plume
Sample Location: MW-102
Sample ID: 5P-MW102
Sample Date: 4/6/10
Sample Time: 16:50
QA/QC Sample (Type and ID):
Water Quality Meter: Horiba U-22
Depth of Pump Intake (BTOC): 120'
Sample Filtered: (Y/N) **Analyte:**

PID Screen: —
Total Depth (BTOC): 134.22'
Depth to Water (BTOC): 106.89
Depth of Water Column: 27.33
Calculated Purge: low-flow
Actual Purge: 3 L
Sample Method: bladder pump
Depth of Product:
Filter Manufacture/Size: —

Time	Vol ~~(gal)~~ L	Temp (°C)	Cond (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turb (NTU)	Notes and Comments
15:55	0	12.57	70.4	14.15	8.94	-58	308	
16:00	0	11.62	1.90	14.13	9.21	-8	300	
16:05	0	11.10	1.94	10.93	8.99	2	327	
16:10		10.82	1.99	9.75	8.73	14	348	
16:15	<1	14.22	2.01	7.55	8.53	25	419	
16:20	<1	14.43	2.11	8.32	8.51	29	336	
16:25	1	14.57	2.12	8.61	8.51	30	342	* High turbidity likely due to sediment
16:30	1	14.77	2.13	8.49	8.49	31	348	in flow cell. Actual sample probably
16:35	2	14.89	2.13	8.55	8.49	33	344	has lower turbidity
16:40	2	15.02	2.12	8.52	8.49	34	340	
16:45	3	14.99	2.12	8.53	8.48	35	342	

Sampling Personnel S. DeYoung

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URS

GROUNDWATER SAMPLING FORM

Project: Five Points
Sample Location: MW #1 - 2004
Sample ID: SP-MW12004
Sample Date: 4/7/10
Sample Time: 14:35
QA/QC Sample (Type and ID): —
Water Quality Meter: Horiba U-22
Depth of Pump Intake (BTOC): ~ 105' btoc
Sample Filtered: (Y)(N) **Analyte:** —

PID Screen: —
Total Depth (BTOC): 113.30
Depth to Water (BTOC): 100.17
Depth of Water Column: 13.13
Calculated Purge: low-flow
Actual Purge: 6 L
Sample Method: Bladder pump
Depth of Product: —
Filter Manufacture/Size: 13:45 Begin pump

Time	Vol ~~(gal)~~ L	Temp (°C)	Cond (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turb (NTU)	Notes and Comments
13:50	0	15.02	1.81	9.01	7.34	108	419	
13:55	1	15.12	1.97	7.57	7.24	110	737	
14:00	2	15.18	1.98	7.33	7.23	110	563	
14:05	3	15.24	1.99	7.31	7.23	110	329	
14:10	3.5	15.28	1.99	7.22	7.23	110	252	
14:15	4	15.18	1.99	7.19	7.23	110	182	
14:20	4.5	15.23	1.99	7.32	7.23	111	131	
14:25	5	15.26	1.99	7.00	7.23	111	123	
14:30	5.5	15.25	2.00	6.99	7.22	112	116	*Turbidity of sample likely lower than in flow cell

Sampling Personnel S. DeYoung

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URS

GROUNDWATER SAMPLING FORM

Project: Five Points
Sample Location: MW #2 - 2004
Sample ID: SP-MW22004
Sample Date: 4/7/10
Sample Time: 11:00
QA/QC Sample (Type and ID): MS/MSD
Water Quality Meter: Horiba U-22
Depth of Pump Intake (BTOC): ~ 108' btoc
Sample Filtered: (Y/N) **Analyte:**

PID Screen: —
Total Depth (BTOC): 116.05
Depth to Water (BTOC): 103.10
Depth of Water Column: 12.95
Calculated Purge: low-flow
Actual Purge: 7 L
Sample Method: Bladder pump
Depth of Product: —
Filter Manufacture/Size: — 10:00 Begin pump

Time	Vol (~~gal~~)	Temp (°C)	Cond (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turb (NTU)	Notes and Comments
10:15	0	15.34	1.19	12.20	7.20	101	high	
10:20	1	15.05	1.19	8.82	7.02	113	error	
10:25	2	15.01	1.19	8.75	7.06	116	error	
10:30	3	14.98	1.19	8.79	7.12	115	error	
10:35	4	15.00	1.18	8.84	7.21	112	error	
10:40	4	15.06	1.18	8.71	7.30	109		
10:45	4.5	15.06	1.17	8.75	7.36	107	602	
10:50	5	15.05	1.17	8.86	7.39	107	586	
10:55	5.5	15.03	1.17	8.82	7.40	107	580	* Believe that turbidity of sample is lower than that in flow cell

Sampling Personnel S. DeYoung

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URS

GROUNDWATER SAMPLING FORM

Project: 5 Points
Sample Location: MW-101
Sample ID: SP-MW101
Sample Date: 4/8/10
Sample Time: 15:30
QA/QC Sample (Type and ID): —
Water Quality Meter: Horiba U-22
Depth of Pump Intake (BTOC): 150'
Sample Filtered: (Y/N) Analyte:

PID Screen: —
Total Depth (BTOC): ~~185~~ 185'
Depth to Water (BTOC): 143.32'
Depth of Water Column: 41.68
Calculated Purge: —
Actual Purge: Ø
Sample Method: Bailer
Depth of Product: —
Filter Manufacture/Size: ~~15:43 Pump Begins~~

Time	Vol (gal)	Temp (°C)	Cond (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turb (NTU)	Notes and Comments
15:35		17.67	1.78	10.11	7.34	126	224	
15:40		15.24	1.74	9.35	7.30	136	195	

Sampling Personnel S. DeYoung / J. Dunn

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URS

GROUNDWATER SAMPLING FORM

Project: 5 Points
Sample Location: MW-101
Sample ID: SP-MW101
Sample Date: 5/13/10
Sample Time: 14:25
QA/QC Sample (Type and ID): —
Water Quality Meter: Horiba U-22
Depth of Pump Intake (BTOC): 160' btoc
Sample Filtered: (Y/(N)) **Analyte:**

PID Screen: —
Total Depth (BTOC): 185'
Depth to Water (BTOC): 143.42'
Depth of Water Column: 41.58
Calculated Purge: low-flow
Actual Purge: ~ 2 L
Sample Method: bladder pump
Depth of Product: —
Filter Manufacture/Size: —

Time	Vol ~~(gal)~~ (L)	Temp (°C)	Cond (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turb (NTU)	Notes and Comments
14:02	0	16.06	1.50	8.75	6.98	56	53.4	Started controller @ CPM4 @ 40 psi
14:07	<1	16.03	1.51	8.18	6.97	60	200.0	- increased psi gradually to ~ 100 psi
14:12	1	15.83	1.48	8.17	7.00	62	331.0	- then decreased cycles to CPM1 and
14:17	1.5	15.82	1.46	7.98	7.02	64	278*	we got water to surface
14:22	2	16.41	1.46	7.90	7.04	66	274*	
								* Believe turbidity of sample is likely much
								lower due to possible sediment stuck
								in flow cell.

Sampling Personnel S. De Young

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URS

GROUNDWATER SAMPLING FORM

Project: 5 Points PCE Plume
Sample Location: MW-102
Sample ID: SP-MW102
Sample Date: 9/20/10
Sample Time: 17:00
QA/QC Sample (Type and ID): —
Water Quality Meter: Eureka
Depth of Pump Intake (BTOC): NA
Sample Filtered: (Y/N) Analyte: —

PID Screen: —
Total Depth (BTOC): 134.16'
Depth to Water (BTOC): 113.96'
Depth of Water Column: 20.20'
Calculated Purge: to hydrasleeve
Actual Purge: —
Sample Method: Hydrasleeve at 123 ft BTOC
Depth of Product: —
Filter Manufacture/Size: —

Time	Vol (gal)	pH	Cond (mS/cm)	Temp (oC)	DO (mg/L)	ORP (mV)	Turb (NTU)	Notes and Comments
17:00	—	7.09	1.711	16.28	8.25	207	9	HydraSleeve placed at 123 ft BTOC

Jeff Dunn 9-20-10

Sampling Personnel Jeff Dunn

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URS

GROUNDWATER SAMPLING FORM

Project: 5 Points
Sample Location: MW-103
Sample ID: SP-MW103
Sample Date: 9/20/10
Sample Time: 16:40
QA/QC Sample (Type and ID): —
Water Quality Meter: Eureka
Depth of Pump Intake (BTOC): NA
Sample Filtered: (Y/N) Analyte: —

PID Screen: NA
Total Depth (BTOC): 124.95'
Depth to Water (BTOC): 110.85'
Depth of Water Column: 14.10'
Calculated Purge: NA
Actual Purge: NA
Sample Method: Hydrasleeve at 115 ft
Depth of Product: NA
Filter Manufacture/Size: NA

Time	Vol (gal)	pH	Cond (µS/cm)	Temp (oC)	DO (mg/L)	ORP (mV)	Turb (NTU)	Notes and Comments
16:40	—	7.05	1.458	16.21	8.18	207	6	HydraSleeve placed at 115 ft BTOC
								9-20-10

Sampling Personnel Jeff Dunn

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URS

GROUNDWATER SAMPLING FORM

Project: Five Points PCE Plume
Sample Location: MW-101
Sample ID: 5PMW-101-LF
Sample Date: 9-20-
Sample Time: 1435
QA/QC Sample (Type and ID): NA
Water Quality Meter: Eureka
Depth of Pump Intake (BTOC): 160 ft
Sample Filtered: (Y)(N) Analyte:

PID Screen: NA
Total Depth (BTOC): 185.40 ft
Depth to Water (BTOC): 150.05 ft
Depth of Water Column: 35.35 ft
Calculated Purge: 160 ft tubing x π x (0.18/12)² x 7.48 = 0.84 gal x 3 = 2.5 gal.
Actual Purge: 4 gallons
Sample Method: Bladder pump
Depth of Product: NA
Filter Manufacture/Size: NA

Time	Vol (gal)	pH	Cond (mS/cm)	Temp (oC)	DO (mg/L)	ORP (mV)	Turb (NTU)	Notes and Comments
1435	4	7.98	1.183	19.1	3.90	201	159	Low flow micropurg

9-20-10

Sampling Personnel

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URS

683
160
843

GROUNDWATER SAMPLING FORM

Project: Five Points PCE Plume
Sample Location: MW-101
Sample ID: MW-101
Sample Date: 9-20-2010
Sample Time: 1342, 1405, 1420, 1435
QA/QC Sample (Type and ID): MS/MSD from 170' Duplicate from 160'
Water Quality Meter: Eureka
Depth of Pump Intake (BTOC): Hydrasleeves at 153, 160', 170' & 180'
Sample Filtered: (Y/N) **Analyte:** NA

PID Screen: NA
Total Depth (BTOC): 185.40 ft
Depth to Water (BTOC): 150.05 ft
Depth of Water Column: 35.35 ft
Calculated Purge: NA
Actual Purge: NA
Sample Method: HydraSleeve samplers
Depth of Product: NA
Filter Manufacture/Size: NA

Time	Vol (gal)	pH	Cond (~~µ~~mS/cm)	Temp (oC)	DO (mg/L)	ORP (mV)	Turb (NTU)	Notes and Comments
1342 9/20 ~~1345~~	~~1.5~~ 40 9/20	7.18	1.176	18.95	8.13	205	2.0	153 ft
1405	—	7.43	1.146	19.3	7.33	176		160 ft used for duplicate
1420	—	—	—	—	—	—	—	170 used for MS/MSD
1435	—	7.38	0.136	20.02	6.02	169	16	180 ft

Sampling Personnel Jeff Dunn

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URS

GROUNDWATER SAMPLING FORM

Project: Five Points PCE Plume
Sample Location: MW#2-2004
Sample ID: SP-MW22004
Sample Date: 9/20/10
Sample Time: 16:16
QA/QC Sample (Type and ID): NA
Water Quality Meter: Eureka
Depth of Pump Intake (BTOC): NA
Sample Filtered: (Y/(N)) Analyte: —

PID Screen: NA
Total Depth (BTOC): 114.85 ft
Depth to Water (BTOC): 111.00 ft
Depth of Water Column: 3.85 ft
Calculated Purge: NA
Actual Purge: NA
Sample Method: Hydrasleeve at 114.85 ft
Depth of Product: NA
Filter Manufacture/Size: NA

Time	Vol (gal)	pH	Cond (mS/cm)	Temp (oC)	DO (mg/L)	ORP (mV)	Turb (NTU)	Notes and Comments
16:16	—	7.09	1.181	16.45	7.40	198	97	—

9-20-10

Sampling Personnel

URS

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GROUNDWATER SAMPLING FORM

Project: 5 - Points
Sample Location: MW 1
Sample ID: 5P - MW - 1 2004
Sample Date: 9-20-10
Sample Time: 1110
QA/QC Sample (Type and ID): NA
Water Quality Meter: Eureka
Depth of Pump Intake (BTOC): NA

PID Screen: —
Total Depth (BTOC): 111.66'
Depth to Water (BTOC): 107.80'
Depth of Water Column: 3.86'
Calculated Purge: NA
Actual Purge: NA
Sample Method: Hydra Sleeve
Free Product: NA

Time	Vol	pH	Cond	Temp	ORP	Turb	DO	Other	Notes and Comments
1110	—	7.75	0.3	18.2	210	15	1.95	NA	Hydrasleeve at bottom of well

9-20-10

Sampling Personnel

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URS

GROUNDWATER SAMPLING FORM

Project: 5 - Points
Sample Location: MW-1 2004
Sample ID: MW-1 2004 LF
Sample Date: 9-20-2010
Sample Time: 1230
QA/QC Sample (Type and ID): NA
Water Quality Meter: Eureka
Depth of Pump Intake (BTOC): NA
Sample Filtered: (Y/N) Analyte: —

PID Screen: —
Total Depth (BTOC): 111.66 ft
Depth to Water (BTOC): 107.80 ft
Depth of Water Column: 3.86
Calculated Purge: 120ft tubing x $\pi \times (0.18/12)^2 \times 7.48 = 0.63 \times 3$ = 1.9
Actual Purge: 2.0 gallons
Sample Method: Bladder pump
Depth of Product: NA
Filter Manufacture/Size: NA

Time	Vol (gal)	pH	Cond (~~µS~~ mS/cm)	Temp (oC)	DO (mg/L)	ORP (mV)	Turb (NTU)	Notes and Comments
1221	0.5	7.87	0.25	18.84	1.88	207	110	Well purged dry
~~1110~~	~~2.0~~ 1.00	7.75	0.3	17.32		217	3	~~Hydrasleeve~~ 9-20-10
1230	2.0	7.82	0.3	17.25	1.95	220	50	

9-20-10

Sampling Personnel

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URS

GROUNDWATER SAMPLING FORM

Project: 5 Points
Sample Location: MW-103
Sample ID: 5P-MW103-116
Sample Date: 1-27-11
Sample Time: 1230
QA/QC Sample (Type and ID): —
Water Quality Meter: YSI 556
Depth of Pump Intake (BTOC): 116'

PID Screen: —
Total Depth (BTOC): —
Depth to Water (BTOC): —
Depth of Water Column: —
Calculated Purge: —
Actual Purge: —
Sample Method: —
Free Product: —

Time	Vol	pH	Cond	Temp	ORP	Turb	DO	Other	Notes and Comments
1230	—	6.82	1134	13.40	190.4	—	6.38	—	

Sampling Personnel T. Binder

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URS

GROUNDWATER SAMPLING FORM

Project: 5 Points
Sample Location: MW-105
Sample ID: 5P-MW105-146
Sample Date: 1-27-11
Sample Time: 1255
QA/QC Sample (Type and ID): —
Water Quality Meter: YSI 556
Depth of Pump Intake (BTOC): 146'

PID Screen: —
Total Depth (BTOC): —
Depth to Water (BTOC): —
Depth of Water Column: —
Calculated Purge: —
Actual Purge: —
Sample Method: —
Free Product: —

Time	Vol	pH	Cond	Temp	ORP	Turb	DO	Other	Notes and Comments
1255	—	7.03	1054	14.36	180.5	—	5.42	—	

Sampling Personnel T. Binder

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URS

GROUNDWATER SAMPLING FORM

Project: 5 Points
Sample Location: MW2-2004
Sample ID: 5P-MW2-2004-111
Sample Date: 1-27-11
Sample Time: 1320
QA/QC Sample (Type and ID): —
Water Quality Meter: YSI 556
Depth of Pump Intake (BTOC): 111'

PID Screen: —
Total Depth (BTOC): —
Depth to Water (BTOC): —
Depth of Water Column: —
Calculated Purge: —
Actual Purge: —
Sample Method: —
Free Product: —

Time	Vol	pH	Cond	Temp	ORP	Turb	DO	Other	Notes and Comments
1320	—	7.13	808	13.21	181.6	—	6.83	—	—

T-2.0

Sampling Personnel T. Binder

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URS

GROUNDWATER SAMPLING FORM

Project: 5 Points
Sample Location: MW1-2004
Sample ID: 5P-MW1-2004-112
Sample Date: 1-27-11
Sample Time: 1350
QA/QC Sample (Type and ID): —
Water Quality Meter: YSI 556
Depth of Pump Intake (BTOC): 112'

PID Screen: —
Total Depth (BTOC): —
Depth to Water (BTOC): —
Depth of Water Column: —
Calculated Purge: —
Actual Purge: —
Sample Method: —
Free Product: —

Time	Vol	pH	Cond	Temp	ORP	Turb	DO	Other	Notes and Comments
1350	—	6.95	1233	13.93	187.0	—	5.89	—	

Sampling Personnel T. Binder

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URS

GROUNDWATER SAMPLING FORM

Project: 5 Points
Sample Location: MW-104
Sample ID: 5P-MW104-120
Sample Date: 1-27-11
Sample Time: ~~1350~~ 1415
QA/QC Sample (Type and ID): —
Water Quality Meter: YSI 556
Depth of Pump Intake (BTOC): 120'

PID Screen: —
Total Depth (BTOC): —
Depth to Water (BTOC): —
Depth of Water Column: —
Calculated Purge: —
Actual Purge: —
Sample Method: —
Free Product: —

Time	Vol	pH	Cond	Temp	ORP	Turb	DO	Other	Notes and Comments
1415	—	7.10	1152	13.61	182.0	—	6.27	—	

Sampling Personnel T. Binder

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URS

GROUNDWATER SAMPLING FORM

Project: 5 Points
Sample Location: MW-106
Sample ID: 5P-MW106-66
Sample Date: 1-27-11
Sample Time: 1445
QA/QC Sample (Type and ID): —
Water Quality Meter: YSI 556
Depth of Pump Intake (BTOC): 66'

PID Screen: —
Total Depth (BTOC): —
Depth to Water (BTOC): —
Depth of Water Column: —
Calculated Purge: —
Actual Purge: —
Sample Method: —
Free Product: —

Time	Vol	pH	Cond	Temp	ORP	Turb	DO	Other	Notes and Comments
1445	—	7.01	1144	15.02	162.4	—	1.35	—	—

Sampling Personnel T. Binder

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URS

GROUNDWATER SAMPLING FORM

Project: 5 Points
Sample Location: MW-107
Sample ID: 5P-MW107-66
Sample Date: 1-27-11
Sample Time: 1455
QA/QC Sample (Type and ID): —
Water Quality Meter: YSI 556
Depth of Pump Intake (BTOC): 66'

PID Screen: —
Total Depth (BTOC): —
Depth to Water (BTOC): —
Depth of Water Column: —
Calculated Purge: —
Actual Purge: —
Sample Method: —
Free Product: —

Time	Vol	pH	Cond	Temp	ORP	Turb	DO	Other	Notes and Comments
1455	—	7.02	1055	12.77	104.0	—	2.67	—	

Sampling Personnel T. Binder

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URS

GROUNDWATER SAMPLING FORM

Project: 5 Points
Sample Location: MW-101
Sample ID: 5P-MW101-158 / 5P-MW101-158-MS&MSD
Sample Date: 1-27-11
Sample Time: 1145
QA/QC Sample (Type and ID): —
Water Quality Meter: YSI 556
Depth of Pump Intake (BTOC): 158'

PID Screen: —
Total Depth (BTOC): —
Depth to Water (BTOC): —
Depth of Water Column: —
Calculated Purge: —
Actual Purge: —
Sample Method: —
Free Product: —

Time	Vol	pH	Cond	Temp	ORP	Turb	DO	Other	Notes and Comments
1145	—	5.88	1112	11.61	199.3	—	6.30	—	

Sampling Personnel T. Binder

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URS

GROUNDWATER SAMPLING FORM

Project: 5-Point PCE Plume
Sample Location: Woods Cross #2
Sample ID: WC#2-124
Sample Date: 5-16-2011
Sample Time: 1530
QA/QC Sample (Type and ID):
Water Quality Meter: Insufficient volume
Depth of ~~Pump~~ Intake (BTOC): 124 ft

PID Screen: Not measured
Total Depth (BTOC):
Depth to Water (BTOC):
Depth of Water Column:
Calculated Purge: No purge
Actual Purge: No purge
Sample Method: Hydrasleeve
Free Product: None observed

Time	Vol	pH	Cond	Temp	ORP	Turb	DO	Other	Notes and Comments
1530									Hydrasleeve sampler set at 124' in the transducer tube. Unknown where the PVC tube is screened or where holes are cut into the pipe.

Jeff Dunn 5-16-2011

Jeff Dunn 5-16-2011

Sampling Personnel Jeff Dunn

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URS

GROUNDWATER SAMPLING FORM

Project: S-Points PCE Plume
Sample Location: Freda Well (North Salt Lake)
Sample ID: Freda-160
Sample Date: 5-16-2011
Sample Time: 1620
QA/QC Sample (Type and ID): None
Water Quality Meter: Insufficien Volume
Depth of ~~Pump~~ Intake (BTOC): 160 ft

PID Screen: N M
Total Depth (BTOC):
Depth to Water (BTOC): 26.05
Depth of Water Column:
Calculated Purge: No Purge
Actual Purge: No purge
Sample Method: HydraSleeve grab from 160' bgs
Free Product: Not measured

Time	Vol	pH	Cond	Temp	ORP	Turb	DO	Other	Notes and Comments
1620									Hydrasleeve sample on 16" well sampler most likely from 160' bgs above screened interval.

Jeff Dunn 5-16-2011

Sampling Personnel Jeff Dunn

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URS

3210 Lock #

SP-MW-SD - depth - Y
dup

5-POINTS GROUNDWATER SAMPLING FORM

Monitoring Well	Sample (Yes/No)	Sample Depth (Hydrasleeve ft BTOC)	Hydrosleeve Set Date	Hydrosleeve Set Time	QA/QC (include TB per cooler)	Sample Date	Sample Time	Depth to Water (8/27/12)	Total Depth (8/27/12)	Comments
MW 1-2004	Yes	112	8/28/12	910	FD #50	8/30/12	1140	102.04	111.18	
MW 2-2004	Yes	111	8/28/12	840	NA	8/30/12	1125	105.36	115.18	
MW-101	Yes	158	8/27/12	1030	NA	8/30/12	1015	143.28	185.10	
MW-102	No	NA	NS	NS	NA	NS	NS	107.95	134.14	
MW-103	Yes	116	8/27/12	1105	NA	8/30/12	1100	104.98	124.93	hard
MW 104	Yes	120	8/27/12	1145	NA	8/30/12	1200	86.59	135.28	hard
MW 105	Yes	146	8/27/12	1225	MS/MSD	8/30/12	1045	129.61	153.09	hard
MW 106s	No	NA	NS	NS	NA	NS	NS	49.89	69.28	
MW 106i	Yes	145	8/28/12	700	NA	8/30/12	1310	55.67	147.83	~10-15' knot on tether
MW 106d	Yes	195	8/28/12	830	NA	8/30/12	1320	56.05	200.28	
MW 107s	No	NA	NS	NS	NA	NS	NS	43.50	60.88	
MW 107i	Yes	145	8/27/12	1615	NA	8/30/12	1240	55.82	148.08	
MW 107d	Yes	200	8/27/12	1645	NA	8/30/12	1250	56.04	205.22	
MW-108I	Yes	149	8/27/12	1330	NA	8/30/12	1340	36.99	157.60	hard 9960/9963 + 149 = 112
MW-108D	Yes	214	8/27/12	1520	NA	8/30/12	1350	40.74	217.41	hard 633/636 + 214 = 850
MW-109I	Yes	169	8/27/12	1545	NA	8/30/12	1300	43.13	172.39	soft ~~855/858~~ 1087/1090 + 169 = 1259
MW-109D	Yes	230	8/27/12	1600	NA	8/30/12	1315	51.23	225.20	soft 852/855 + 230 = ~~859~~ 1085
MW-110I	Yes	208	8/27/12	1420	NA	8/30/12	1530	31.20	211.10	114/117 + 208 = 325
MW-110D	Yes	301	8/27/12	1440	NA	8/30/12	1600	36.79	300+ over tape	327/330 + 301 = 631
Freda 193-196	Yes	196	8/27/12	1215	NA	8/30/12	1415	39.24	NM	597
Freda 218-221	Yes	221	8/27/12	1220	NA	8/30/12	1425			622
Freda 333-336	Yes	336	8/27/12	1225	NA	8/30/12	1435			737
New Well	No	NA	NS	NS	NA	NS	NS	NM	NM	Could not see probe hole
WC-2	No	NA	NS	NS	NA	NS	NS	69.84	NM	
WC-3	No	NA	NS	NS	NA	NS	NS	33.48	NM	
WC-4	No	NA	NS	NS	NA	NS	NS	35.8	NM	used WC city probe to fit down well

Comments/Notes Need larger weights to overcome friction in 2" wells, very hard to overcome friction to set hydrosleeves.

Sampling Personnel: MC

Page 1 of 1

NS = Not Sampled NM = Not Measured NA = Not Applicable

URS

Key # 3210

5-POINTS GROUNDWATER SAMPLING FORM

Monitoring Well	Sample (Yes/No)	Sample Depth (Hydrasleeve ft BTOC)	Screen Interval (ft BGS)	Hydrosleeve Set Date	Hydrosleeve Set Time	QA/QC (include TB per cooler)	Sample Date	Sample Time	Depth to Water (11/26/12)	Total Depth (11/26/12)	Comments
MW 1-2004	Yes	~~112~~ 109	82-112	11/26/12	1500	FD	11/28/12	1510	49.91	111.17	FD (MW91 @ 1530)
MW 2-2004	Yes	111	90-116	11/26/12	1430	NA	11/28/12	1445	103.05	115.18	
MW-101	Yes	158	155-185	11/26/12	1320	NA	11/28/12	1315	142.51	185.10	
MW-102	No		115-135								
MW-103	Yes	116	105-125	11/26/12	1355	NA	11/28/12	1355	103.12	124.93	
MW 104	Yes	120	115-135	11/26/12	1410	NA	11/28/12	1415	84.02	135.28	
MW 105	Yes	146	136-156	11/26/12	1340	MS/MSD	11/28/12	1335	127.91	153.09	
MW 106s	No								49.16	59.28	
MW 106i	Yes	145	138-148	11/26/12	1230	NA	11/28/12	1145	51.94	147.58	
MW 106d	Yes	195	188-198	11/26/12	1240	NA	11/28/12	1200	51.90	200.25	verified TD 11/28/12
MW 107s	No								45.45	60.86	
MW 107i	Yes	145	138-148	11/26/12	1150	NA	11/28/12	1110	52.60	148.20	
MW 107d	Yes	200	193-203	11/26/12	1210	NA	11/28/12	1120	52.81	205.20	
MW-108I	Yes	149	140-150	11/26/12	900	NA	11/28/12	915	31.85	157.60	
MW-108D	Yes	214	204-214	11/26/12	920	NA	11/28/12	930	34.08	217.41	
MW-109I	Yes	169	160-170	11/26/12	1050	NA	11/28/12	1045	35.62	174.40	Film New gasket 1263/1432
MW-109D	Yes	230	210-220	11/26/12	1100	NA	11/28/12	1100	39.90	227.08	film
MW-110I	Yes	208	198-208	11/26/12	830	NA	11/28/12	830	21.66	211.10	
MW-110D	Yes	301	292-302	11/26/12	845	NA	11/28/12	845	24.60	300+	deeper than tape.
Freda 193-196	Yes	196	Multiple	11/26/12	1005	NA	11/28/12	950	25.63	NM	599
Freda 218-221	Yes	221	Multiple	11/26/12	1010	NA	11/28/12	955			622
Freda 333-336	Yes	336	Multiple	11/26/12	1015	NA	11/28/12	1000			737
New Well	No										
WC-2	No										
WC-3	No										
WC-4	No										

Comments/Notes

Update grey highlighted cells based on water level data for current round of sampling (Depths shown are for 8/30/12)

Sampling Personnel: [signature]

Page 1 of 1

NS = Not Sampled NM = Not Measured NA = Not Applicable

URS

PR requested

5-POINTS GROUNDWATER SAMPLING FORM

Monitoring Well	Sample (Yes/No)	Screen Interval (ft BGS)	Water Level Date	Depth to Water	Total Depth	Proposed Sample Depth (Hydrasleeve ft BTOC)	Actual Hydrasleeve Set Depth	Hydrosleeve Set Date	Hydrosleeve Set Time	QA/QC (include TB per cooler)	Sample Date	Sample Time	Comments
MW 1-2004	Yes	82-112	2/21/13	97.54	111.17	112	101	2/21/13	1515	FD	2/26/13	1400	FD (MW-91 @ 1405)
MW 2-2004	Yes	90-116		100.56	115.18	111	~~93~~ 104	2/21/13	1450	NA	2/26/13	1415	added 2 weights
MW-101	Yes	155-185		140.37	185.09	158	158	2/21/13	1400	NA	2/26/13	1530	added 1 weight
MW-102	No	115-135		104.11	134.05								
MW-103	Yes	105-125		100.81	124.93	116	108	2/21/13	1435	NA	2/26/13	1430	added 1 weight
MW 104	Yes	115-135		81.60	135.30	120	120	2/21/13	1535	NA	2/26/13	1335	
MW 105	Yes	136-156		125.48	153.11	146	140	2/21/13	1335	~~MS/MSD~~	2/26/13	1450	top of screen
MW 106s	No	60-70		46.70	69.28								
MW 106i	Yes	138-148		49.39	147.63	145	145	2/21/13	830	NA	2/26/13	1305	
MW 106d	Yes	188-198		49.55	198.38	195	195	2/21/13	835	NA	2/26/13	1315	WL slowly rising
MW 107s	No	60-70		45.44	60.88								
MW 107i	Yes	138-148		50.28	148.20	145	145	2/21/13	750	NA	2/26/13	1235	
MW 107d	Yes	193-203		50.34	205.20	200	200	2/21/13	800	NA	2/26/13	1245	WL slowly rising
MW-108I	Yes	140-150		26.60	157.60	149	149	2/21/13	900	NA	2/26/13	915	
MW-108D	Yes	204-214		31.19	217.40	214	214	2/21/13	905	NA	2/26/13	920	
MW-109I	Yes	160-170		32.91	177.32	169 ?	167	2/21/13	1210	NA	2/26/13	1000	
MW-109D	Yes	210-220		37.06	223.30	230 ?	215	2/21/13	1200	NA	2/26/13	1010	
MW-110I	Yes	198-208		20.26	211.10	208 202	206	2/21/13	1245	~~MS/MSD~~	2/26/13	1105	added extra 4" wt
MW-110D	Yes	292-302		24.15	300	302 294	298	2/21/13	1230	NA	2/26/13	1115	
Freda 193-196	Yes	Multiple		27.32	NM	196	196	2/21/13	1015	NA	2/26/13	10:30	
Freda 218-221	Yes	Multiple				221	221	2/21/13	1020	NA	2/26/13	10:35	
Freda 333-336	Yes	Multiple				336	336	2/21/13	1025	NA	2/26/13	10:40	
New Well	No												
WC-2	No	Multiple		64.60	NM								Survey mark may have changed, measured top of wooden board
WC-3	No	220-393		26.43	NM								
WC-4	No	260-380		22.3	NM								

Comments/Notes

Update grey highlighted cells based on water level data for current round of sampling (Depths shown are for 8/30/12). Hydrasleeve should be set at 3 feet below top of water.

LOCK #: 3210

Sampling Personnel: [signature]

Page 1 of 1

NS = Not Sampled NM = Not Measured NA = Not Applicable

URS

NSL 1100N. no sampling/measuring point.

(108) 17.7 ft 115'N

ALS Laboratory Group
Field Chain-of-Custody Record

Client Name & Address: URS, 756 E. Winchester St #400, SLC, UT 84107

Phone: 801 904 4000

FAX: 801 904 4100

e-mail:

Project No.: 24584937.03000

Project Name: 5 Points

Sampler: (Signature)

Matrix Codes: W) Water, B) Bulk, L) Liquid, F) Filter, S) Soil, G) Wipe, C) Solid, M) Media

Preservation Codes: 1) Cool to 4°C; 2) HCl to pH<2, 4°C; 3) H_2SO_4 to pH<2, 4°C; 4) HNO_3 to pH<2, 4°C; 5) NaOH to pH>12, 4°C; 6) ZnOAc/NaOH to pH>9, 4°C

Field Sample Number	Site ID	Date	Time	Depth	ALS Sample Number	Preservation Code	Sample Matrix Code	Sample for Matrix QC	VOC	MS/MSD							No. of Containers	Remarks
5P-MW106S-066		2/2/12	900	66'			2	W	X									
5P-MW106I-146		2/2/12	910	146'			2	W	X									
5P-MW106I-146-4		2/2/12	915	146'			2	W	X									
5P-MW106D-197		2/2/12	925	197'			2	W	X									2 of 3 VOA's broken out see labels
5P-MW107S-066		2/2/12	1035	66'			2	W	X	X								3x vol for MS/MSD
5P-MW107I-145		2/2/12	1050	145'			2	W	X									
5P-MW107D-203		2/2/12	1110	203			2	W	X									
5P-MW104-120		2/2/12	1140	120'			2	W	X									
5P-MW1-2004-109		2/2/12	1225	109'			2	W	X									
5P-MW2-2004-110		2/2/12	1300	110'			2	W	X									

Possible Hazard Identification
☐ Non-Hazard ☐ Skin Irritant ☐ Rad
☐ Flammable ☐ Poison ☑ Unknown

Sample Disposal
☐ Return to Client ☐ Archive for _____ Months
☑ Disposal by Lab
(a fee may be assessed if samples are retained longer than 3 months)

Requested Turn Around Time
☐ 48 Hours (Rush) ☐ 7 Days ☑ 21 Days
☐ 72 Hours (Rush) ☐ 14 Days ☐ Other
(Rush is email or fax data unless previously approved)

Carrier/Airbill #: Hand delivered

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	Morad Ghani	2/2/12	1543
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ALS Laboratory Group
Field Chain-of-Custody Record

Client Name & Address: URS, 756 E. Winchester St #400, SLC, UT 84107

Phone: 801 904 4000

FAX: 801 904 4100

e-mail:

Project No.: 24584937.03000

Project Name: 5 Points

Sampler: (Signature)

Field Sample Number	Site ID	Date	Time	Depth	ALS Sample Number	Preservation Code	Sample Matrix Code	Sample for Matrix QC	VOC	Temp							No. of Containers	Remarks
SP-MW103-115		2/2/12	1400	115		2	W		X									
SP-MW101-158		2/2/12	1430	158		2	W		X									
SP-MW105-146		2/2/12	1510	146		2	W		X									
Trip Blank		Lab Prepared		NA					X									
Temp Blank		Lab Prepared		NA						X								

Analyses Requested

Matrix Codes:
W) Water B) Bulk
L) Liquid F) Filter
S) Soil G) Wipe
C) Solid M) Media

Preservation Codes:
1) Cool to 4°C
2) HCl to pH<2, 4°C
3) H_2SO_4 to pH<2, 4°C
4) HNO_3 to pH<2, 4°C
5) NaOH to pH>12, 4°C
6) ZnOAc/NaOH to pH>9, 4°C

Possible Hazard Identification
☐ Non-Hazard ☐ Skin Irritant ☐ Rad
☐ Flammable ☐ Poison ☑ Unknown

Sample Disposal
☐ Return to Client ☐ Archive for _____ Months
☑ Disposal by Lab
(a fee may be assessed if samples are retained longer than 3 months)

Requested Turn Around Time
☐ 48 Hours (Rush) ☐ 7 Days ☑ 21 Days
☐ 72 Hours (Rush) ☐ 14 Days ☐ Other
(Rush is email or fax data unless previously approved)

Carrier/Airbill #: Hand delivered

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	[signature]	2/2/12	1543
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ALS Environmental
Field Chain-of-Custody Record

Page 1 of 1

Client Name & Address: Tammi Messersmith / URS Corp, 756 E. Winchester St. #400, SLC, UT 84107

Phone: 801-904-4000

FAX: 801-904-4100

e-mail: tammi.messersmith@urs.com

Project No.: 24584937.03000

Project Name: Five Points

Sampler: (Signature)

Matrix Codes: W) Water, B) Bulk, L) Liquid, F) Filter, S) Soil, G) Wipe, C) Solid, M) Media

Preservation Codes: 1) Cool to 4°C, 2) HCl to pH<2, 4°C, 3) H_2SO_4 to pH<2, 4°C, 4) HNO_3 to pH<2, 4°C, 5) NaOH to pH>12, 4°C, 6) ZnOAc/NaOH to pH>9, 4°C

Field Sample Number	Site ID	Date	Time	Depth	ALS Sample Number	Preservation Code	Sample Matrix Code	Sample for Matrix QC	Analyses Requested: VOC							No. of Containers	Remarks
Freda-193196		4/6/12	1345	193-196		2	W	X	X							9	
Freda-218221		4/6/12	1400	218-221		2	W		X							3	
Freda-218221-Y		4/6/12	1410	218-221		2	W		X							3	
Trip Blank-040612		4/6/12	Lab Prepared			2	W		X							2	
Freda-333336		4/6/12	1415	333-336		2	W		X							3	
Freda-363366		4/6/12	1420	363-366		2	W		X							3	
Freda-418421		4/6/12	1430	418-421		2	W		X							3	

Possible Hazard Identification
☐ Non-Hazard ☐ Skin Irritant ☐ Rad
☐ Flammable ☐ Poison ☒ Unknown

Sample Disposal
☐ Return to Client ☐ Archive for ____ Months
☐ Disposal by Lab
(fees may be assessed if samples are retained longer than 3 months)

Requested Turn Around Time
☐ 2 Days (Rush) ☐ 7 Days (Rush) ☒ 21 Days
☐ 3 Days (Rush) ☐ 14 Days ☐ Other
(Rush = email data by COB on day due. Surcharges assessed.)

Carrier/Airbill #:

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		04/06/12	1530
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Relinquished by: (Signature)	Received by: (Signature)	Date	Time

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ALS Environmental
Field Chain-of-Custody Record

Client Name & Address: URS/ Tammi Messersmith, 756 E. Winchester St. #400, SLC, UT 84107
Phone: 801-904-4000
FAX: 801-904-4100
e-mail: tammi.messersmith@urs.com

Project No.: 24584937.03000
Project Name: 5 Points
Sampler: (Signature) [signature]

Matrix Codes: W) Water, B) Bulk, L) Liquid, F) Filter, S) Soil, O) Wipe, C) Solid, M) Media

Preservation Codes: 1) Cool to 4°C, 2) HCl to pH<2, 4°C, 3) H_2SO_4 to pH<2, 4°C, 4) HNO_3 to pH<2, 4°C, 5) NaOH to pH>12, 4°C, 6) ZnOAc/NaOH to pH>9, 4°C

Field Sample Number	Site ID	Date	Time	Depth	ALS Sample Number	Preservation Code	Sample Matrix Code	Sample for Matrix QC	VOC	Temp							No. of Containers	Remarks
5P-MW104 -	119122	5/15/12	10:35	119-122		2	W		X								3	
5P-MW2200Y-	111114		10:45	111-114		2	W		X								3	
5P-MW2200Y -	111114-Y		10:50	111-114		2	W		X								3	
5P-MW1200Y-	109112		11:00	109-112		2	W		X								3	
5P-MW103-	116119		11:20	116-119		2	W		X								3	
5P-MW105-	146149		11:30	146-149		2	W		X								3	
5P-MW101 -	158161		12:00	158-161		2	W		X								3	
Trip Blank	— Lab Prepared —					2	W	X	X								2	
Temp Blank	— Lab Prepared —					1	W	X		X							1	

Possible Hazard Identification
☐ Non-Hazard ☐ Skin Irritant ☐ Rad
☐ Flammable ☐ Poison ☒ Unknown

Sample Disposal
☐ Return to Client ☐ Archive for _____ Months
☒ Disposal by Lab
(fees may be assessed if samples are retained longer than 3 months)

Requested Turn Around Time
☐ 2 Days (Rush) ☐ 7 Days (Rush) ☒ 21 Days
☐ 3 Days (Rush) ☐ 14 Days ☐ Other
(Rush = email data by COB on day due. Surcharges assessed.)

Carrier/Airbill #:

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[signature]	[signature]	05-15-12	12:38
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received by: (Signature)	Date	Time

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ALS Environmental
Field Chain-of-Custody Record

Client Name & Address: URS / Tammi Messersmith, 756 E Winchester St. #400, SLC, UT 84105

Phone: 801-904-4000

FAX: 801-904-4100

e-mail: tammi_messersmith@urs.com

Project No.: 24584937.03000

Project Name: 5 Points

Sampler: (Signature) [signature]

Matrix Codes: W) Water, B) Bulk, L) Liquid, F) Filter, S) Soil, S) Wipe, O) Solid, M) Media

Preservation Codes: 1) Cool to 4°C, 2) HCl to pH<2, 4°C, 3) H_2SO_4 to pH<2, 4°C, 4) HNO_3 to pH<2, 4°C, 5) NaOH to pH>12, 4°C, 6) ZnOAc+NaOH to pH>9, 4°C

Field Sample Number	Site ID	Date	Time	Depth	ALS Sample Number	Preservation Code	Sample Matrix Code	Sample for Matrix QC	Analyses Requested: VOC								No. of Containers	Remarks
5P-MW107i	145148	5/15/12	8:20	145-148		2	W	X	X								9	
5P-MW107d	200203	5/15/12	8:35	200-203		2	W		X								3	
5P-MW107d	200203-Y		8:40	200-203		2	W		X								3	
5P-MW106i	145148		9:00	145-148		2	W		X								3	
5P-MW106d	189192		9:20	189-192		1	W		X								3	No HCl in VOA. 7-day hold
5P-Freda	193196		10:00	193-196		2	W		X								3	
5P-Freda	218221		10:05	218-221		2	W		X								3	
5P-Freda	333336		10:10	333-336		2	W		X								3	
5P-Freda	363366		10:15	363-366		2	W		X								3	
5P-Freda	418421		10:20	418-421		2	W		X								3	

Possible Hazard Identification
☐ Non-Hazard ☐ Skin Irritant ☐ Rad
☐ Flammable ☐ Poison ☒ Unknown

Sample Disposal
☐ Return to Client ☐ Archive for ____ Months
☒ Disposal by Lab
(fees may be assessed if samples are retained longer than 3 months)

Requested Turn Around Time
☐ 2 Days (Rush) ☐ 7 Days (Rush) ☒ 21 Days
☐ 3 Days (Rush) ☐ 14 Days ☐ Other
(Rush = email data by COB on day due. Surcharges assessed.)

Carrier/Airbill #:

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
[signature]	[signature]	05-15-12	12:2[illegible]
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received by: (Signature)	Date	Time

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Phone: (801) 266-7700
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ALS Environmental
Field Chain-of-Custody Record

Client Name & Address: URS 75 E. Winchester St #400 SLC, UT 84107

Phone: 801 904 4000

FAX: 801 904 4100

e-mail:

Project No.: 24584937.03000

Project Name: 5 Points

Sampler: (Signature)

Matrix Codes: W) Water B) Bulk L) Liquid F) Filter S) Soil G) Wipe C) Solid M) Media

Preservation Codes: 1) Cool to 4°C 2) HCl to pH<2, 4°C 3) H_2SO_4 to pH<2, 4°C 4) HNO_3 to pH<2, 4°C 5) NaOH to pH>12, 4°C 6) ZnOAc/NaOH to pH>9, 4°C

Field Sample Number	Site ID	Date	Time	Depth	ALS Sample Number	Preservation Code	Sample Matrix Code	Sample for Matrix QC	Analyses Requested: VOC's 8260	Analyses Requested: MS/MSD							No. of Containers	Remarks
SP-MW101-158		8/30/12	1015	158		2	W		X								3	
SP-MW105-146		8/30/12	1045	146		2	W		X	X							9	
SP-MW103-116		8/30/12	1100	116		2	W		X								3	
SP-MW12004-111		8/30/12	1125	111		2	W		X								3	
SP-MW12004-112		8/30/12	1140	112		2	W		X								3	
SP-MW12004-112		8/30/12	1150	112		2	W		X								3	
SP-MW104-120		8/30/12	1200	120		2	W		X								3	
SP-MW107I-145		8/30/12	1240	145		2	W		X								3	
SP-MW107D-200		8/30/12	1250	200		2	W		X								3	
SP-MW108-145		8/30/12	1310	145		2	W		X								3	

Possible Hazard Identification
☐ Non-Hazard ☐ Skin Irritant ☐ Rad
☐ Flammable ☐ Poison ☑ Unknown

Sample Disposal
☐ Return to Client ☐ Archive for _____ Months
☑ Disposal by Lab
(fees may be assessed if samples are retained longer than 3 months)

Requested Turn Around Time
☐ 2 Days (Rush) ☐ 7 Days (Rush) ☐ 21 Days
☐ 3 Days (Rush) ☐ 14 Days ☑ Other Standard
(Rush = email data by COB on day due. Surcharges assessed.)

Carrier/Airbill #:

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
		09/20/12	1015
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received by: (Signature)	Date	Time

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ALS Environmental
Field Chain-of-Custody Record

Page 2 of 3

Client Name & Address: URS, 756 E Winchester St #400, SLC, UT

Phone: 801 904 4000

FAX: 801 904 4100

e-mail:

Project No.: 24584937.03000

Project Name: 5 Points

Sampler: (Signature)

Matrix Codes: W) Water B) Bulk L) Liquid F) Filter S) Soil G) Wipe C) Solid M) Media

Preservation Codes: 1) Cool to 4°C 2) HCl to pH<2, 4°C 3) H_2SO_4 to pH<2, 4°C 4) HNO_3 to pH<2, 4°C 5) NaOH to pH>12, 4°C 6) ZnOAc/NaOH to pH>9, 4°C

Field Sample Number	Site ID	Date	Time	Depth	ALS Sample Number	Preservation Code	Sample Matrix Code	Sample for Matrix QC	Analyses Requested: VOC 8260								No. of Containers	Remarks
SP-MW106D-195		8/30/12	1320	195		2	W		X								3	
SP-MW108I-149		8/30/12	1340	149		2	W		X								3	
SP-MW108D-214		8/30/12	1350	214		2	W		X								3	
SP-Fred-196		8/30/12	1415	196		2	W		X								3	
SP-Fred-221		8/30/12	1425	221		2	W		X								3	
SP-Fred-336		8/30/12	1435	336		2	W		X								3	
SP-MW109I-169		8/30/12	1500	169		2	W		X								3	
SP-MW109D-230		8/30/12	1515	230		2	W		X								3	
SP-MW110I-205		8/30/12	1530	205		2	W		X								3	
SP-MW110D-301		8/30/12	1600	301		2	W		X								3	

Possible Hazard Identification
☐ Non-Hazard ☐ Skin Irritant ☐ Rad
☐ Flammable ☐ Poison ☑ Unknown

Sample Disposal
☐ Return to Client ☐ Archive for _____ Months
☑ Disposal by Lab
(fees may be assessed if samples are retained longer than 3 months)

Requested Turn Around Time
☐ 2 Days (Rush) ☐ 7 Days (Rush) ☐ 21 Days
☐ 3 Days (Rush) ☐ 14 Days ☒ Other Standard
(Rush = email data by COB on day due. Surcharges assessed.)

Carrier/Airbill #:

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
		08/30/12	1615
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Relinquished by: (Signature)	Received by: (Signature)	Date	Time

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ALS Environmental
Field Chain-of-Custody Record

Client Name & Address: URS 756 E. Winchester St #400 SLC, UT 84107

Phone: 801 904 4000

FAX: 801 904 4100

e-mail:

Project No.: 24584937.03000

Project Name: S. Points

Sampler: (Signature)

Matrix Codes: W) Water B) Bulk L) Liquid F) Filter S) Soil G) Wipe C) Solid M) Media

Preservation Codes: 1) Cool to 4°C 2) HCl to pH<2, 4°C 3) H_2SO_4 to pH<2, 4°C 4) HNO_3 to pH<2, 4°C 5) NaOH to pH>12, 4°C 6) ZnOAc+NaOH to pH>9, 4°C

Field Sample Number	Site ID	Date	Time	Depth	ALS Sample Number	Preservation Code	Sample Matrix Code	Sample for Matrix QC	Analyses Requested: VOC's 8260	Analyses Requested: Time Out							No. of Containers	Remarks
Trip Blank		Lab Prepared				2	W		X									
Trip Blank		Lab Prepared				1	W			X								

Possible Hazard Identification
☐ Non-Hazard ☐ Skin Irritant ☐ Rad
☐ Flammable ☐ Poison ☑ Unknown

Sample Disposal
☐ Return to Client ☐ Archive for _____ Months
☑ Disposal by Lab
(fees may be assessed if samples are retained longer than 3 months)

Requested Turn Around Time
☐ 2 Days (Rush) ☐ 7 Days (Rush) ☐ 21 Days
☐ 3 Days (Rush) ☐ 14 Days ☑ Other Standard
(Rush = email data by COB on day due. Surcharges assessed.)

Carrier/Airbill #:

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
		08/30/12	1615
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
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ALS Environmental
Field Chain-of-Custody Record

Page 1 of 1

Client Name & Address: URS
756 East Winchester Street #400
Salt Lake City, UT 84107

Phone: 801-904-4000

FAX: 801-904-4100

e-mail: Tammi_mosso-smith@URS.com

Project No.: ~~#2 24585~~ 24584937.03000

Project Name: 5-Points

Sampler: (Signature)

Matrix Codes: W) Water B) Bulk L) Liquid F) Filter S) Soil O) Wipe C) Solid M) Media

Preservation Codes: 1) Cool to 4°C 2) HCl to pH<2, 4°C 3) H_2SO_4 to pH<2, 4°C 4) HNO_3 to pH<2, 4°C 5) NaOH to pH>12, 4°C 6) ZnOAc/NaOH to pH>9, 4°C

Field Sample Number	Site ID	Date	Time	Depth	ALS Sample Number	Preservation Code	Sample Matrix Code	Sample for Matrix QC	Analyses Requested: VOCs 8260							No. of Containers	Remarks
~~5-MW106D-195~~	~~5-points~~	~~9/5/12~~		~~195~~		~~2~~	~~W~~		~~X~~								
5P-MW106I-195	5-points	9/5/12	11:00	195		2	W		X							6	

Possible Hazard Identification
☐ Non-Hazard ☐ Skin Irritant ☐ Rad
☐ Flammable ☐ Poison ☒ Unknown

Sample Disposal
☐ Return to Client ☐ Archive for _____ Months
☒ Disposal by Lab
(fees may be assessed if samples are retained longer than 3 months)

Requested Turn Around Time
☐ 2 Days (Rush) ☐ 7 Days (Rush) ☐ 21 Days
☐ 3 Days (Rush) ☒ 14 Days ☐ Other
(Rush = email data by COB on day due. Surcharges assessed.)

Carrier/Airbill #:

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
	[signature]	09/05/12	1205
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received by: (Signature)	Date	Time

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ALS Environmental
Field Chain-of-Custody Record

Client Name & Address: URS, 756 E. Winchester St #400, SLC, UT 84107

Phone: 801 904 4000

FAX: 801 904 4100

e-mail:

Project No.: 24584937.03000

Project Name: 5 Points

Sampler: (Signature)

Matrix Codes: W) Water, B) Bulk, L) Liquid, F) Filter, S) Soil, G) Wipe, O) Solid, M) Media

Preservation Codes: 1) Cool to 4°C; 2) HCl to pH<2, 4°C; 3) H_2SO_4 to pH<2, 4°C; 4) HNO_3 to pH<2, 4°C; 5) NaOH to pH>12, 4°C; 6) ZnOAc/NaOH to pH>9, 4°C

Field Sample Number	Site ID	Date	Time	Depth	ALS Sample Number	Preservation Code	Sample Matrix Code	Sample for Matrix QC	Analyses Requested: VOC's 8260								No. of Containers	Remarks
SP-MW-110i-169		11/28/12	830	169		2	W		X								3	
SP-MW-110d-301		11/28/12	845	301		2	W		X								3	
SP-MW-108i-149		11/28/12	915	149		2	W		X								3	
SP-MW-108d-214		11/28/12	930	214		2	W		X								3	
SP-Fred-196		11/28/12	950	196		2	W		X								3	
SP-Fred-221		11/28/12	955	221		2	W		X								3	
SP-Fred-336		11/28/12	1000	336		2	W		X								3	
~~SP-109i-169~~		~~11/28/12~~	~~1045~~	~~169~~		~~2~~	~~W~~		~~X~~								~~3~~	
~~SP-109d-230~~		~~11/28/12~~	~~1100~~	~~230~~		~~2~~	~~W~~		~~X~~								~~3~~	
~~SP-MW-107-145~~		~~11/28/12~~	~~1110~~	~~145~~		~~2~~	~~W~~		~~X~~								~~3~~	

Possible Hazard Identification
☐ Non-Hazard ☐ Skin Irritant ☐ Rad
☐ Flammable ☐ Poison ☑ Unknown

Sample Disposal
☐ Return to Client ☐ Archive for _____ Months
☑ Disposal by Lab
(fees may be assessed if samples are retained longer than 3 months)

Requested Turn Around Time
☐ 2 Days (Rush) ☐ 7 Days (Rush) ☐ 21 Days
☐ 3 Days (Rush) ☐ 14 Days ☑ Other Standard
(Rush = email data by COB on day due. Surcharges assessed.)

Carrier/Airbill #:

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
		11/28/12	1775
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received by: (Signature)	Date	Time

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ALS Environmental
Field Chain-of-Custody Record

Client Name & Address: URS, 756 E. Winchester St #400, SLC, UT 84107

Phone: 801 904 4000

FAX: 801 904 4100

e-mail:

Project No.: 24584937.03000

Project Name: 5 Points

Sampler: (Signature)

Matrix Codes: W) Water B) Bulk L) Liquid F) Filter S) Soil G) Wipe C) Solid M) Media

Preservation Codes: 1) Cool to 4°C 2) HCl to pH<2, 4°C 3) H_2SO_4 to pH<2, 4°C 4) HNO_3 to pH<2, 4°C 5) NaOH to pH>12, 4°C 6) ZnOAc/NaOH to pH>9, 4°C

Field Sample Number	Site ID	Date	Time	Depth	ALS Sample Number	Preservation Code	Sample Matrix Code	Sample for Matrix QC	VOC's 8260	MS/MSD							No. of Containers	Remarks
5P-MW-109i-169		11/28/12	1045	169		2	W		X								3	
5P-MW-109d-230		11/28/12	1100	230		2	W		X								3	
5P-MW-107i-145		11/28/12	1110	145		2	W		X								3	
5P-MW-107d-200		11/28/12	1120	200		2	W		X								3	
5P-MW-106i-145		11/28/12	1145	145		2	W		X								3	
5P-MW-106d-195		11/28/12	1200	195		2	W		X								3	
5P-MW-101-158		11/28/12	1315	158		2	W		X								3	
5P-MW-105-146		11/28/12	1335	146		2	W		X	X							9	
5P-MW-103-116		11/28/12	1355	116		2	W		X								3	
5P-MW-104-120		11/28/12	1415	120		2	W		X								3	

Possible Hazard Identification
☐ Non-Hazard ☐ Skin Irritant ☐ Rad
☐ Flammable ☐ Poison ☑ Unknown

Sample Disposal
☐ Return to Client ☐ Archive for _____ Months
☑ Disposal by Lab
(fees may be assessed if samples are retained longer than 3 months)

Requested Turn Around Time
☐ 2 Days (Rush) ☐ 7 Days (Rush) ☐ 21 Days
☐ 3 Days (Rush) ☐ 14 Days ☑ Other Standard
(Rush = email data by COB on day due. Surcharges assessed.)

Carrier/Airbill #:

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
		11/28/12	1355
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received by: (Signature)	Date	Time

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ALS Environmental
Field Chain-of-Custody Record

Client Name & Address: URS, 756 E. Winchester St #400, SLC, UT 84107

Phone: 801 904 4000

FAX: 801 904 4100

e-mail:

Project No.: 24584937.03000

Project Name: 5 Points

Sampler: *(Signature)*

Matrix Codes: W) Water, B) Bulk, L) Liquid, F) Filter, S) Soil, G) Wipe, C) Solid, M) Media

Preservation Codes: 1) Cool to 4°C, 2) HCl to pH<2, 4°C, 3) H_2SO_4 to pH<2, 4°C, 4) HNO_3 to pH<2, 4°C, 5) NaOH to pH>12, 4°C, 6) ZnOAc/NaOH to pH>9, 4°C

Field Sample Number	Site ID	Date	Time	Depth	ALS Sample Number	Preservation Code	Sample Matrix Code	Sample for Matrix QC	Analyses Requested: VOCs 8260	Analyses Requested: Temp							No. of Containers	Remarks
SP-MW2-2004-111		11/28/12	1445	111		2	W		X								3	
SP-MW1-2004-109		11/28/12	1510	109		2	W		X								3	
SP-MW-91-109		11/28/12	1530	109		2	W		X								3	
Trip Blank		Lab Prepared		–		2			X									
Temp Blank		Lab Prepared		–		1				X								

Possible Hazard Identification
☐ Non-Hazard ☐ Skin Irritant ☐ Rad
☐ Flammable ☐ Poison ☑ Unknown

Sample Disposal
☐ Return to Client ☐ Archive for _____ Months
☑ Disposal by Lab
(fees may be assessed if samples are retained longer than 3 months)

Requested Turn Around Time
☐ 2 Days (Rush) ☐ 7 Days (Rush) ☐ 21 Days
☐ 3 Days (Rush) ☐ 14 Days ☑ Other Standard
(Rush = email data by COB on day due. Surcharges assessed.)

Carrier/Airbill #:

Relinquished by: *(Signature)*	Received by: *(Signature)*	Date	Time
		11/28/12	~~1555~~ 1355
Relinquished by: *(Signature)*	Received by: *(Signature)*	Date	Time
Relinquished by: *(Signature)*	Received by: *(Signature)*	Date	Time

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ALS Environmental
Field Chain-of-Custody Record

Client Name & Address: URS, 756 E. Winchester St. #400, SLC, UT 84107

Phone: 801 904 4000

FAX: 801 904 4106

e-mail:

Project No.: 24584937.03000

Project Name: 5-points

Sampler: (Signature)

Matrix Codes: W) Water, B) Bulk, L) Liquid, F) Filter, S) Soil, G) Wipe, O) Solid, M) Media

Preservation Codes: 1) Cool to 4°C, 2) HCl to pH<2, 4°C, 3) H_2SO_4 to pH<2, 4°C, 4) HNO_3 to pH<2, 4°C, 5) NaOH to pH>12, 4°C, 6) ZnOAc/NaOH to pH>9, 4°C

Field Sample Number	Site ID	Date	Time	Depth	ALS Sample Number	Preservation Code	Sample Matrix Code	Sample for Matrix QC	VOC's 8260	Temp	MS/MSD						No. of Containers	Remarks
5P-MW108i-149		2/26/13	915	149		2	W		X								3	
5P-MW108d-214		2/26/13	920	214		2	W		X								3	
5P-MW109i-167		2/26/13	1000	167		2	W		X								3	PR requested
5P-MW109d-215		2/26/13	1010	215		2	W		X								3	PR requested
5P-Freda-196		2/26/13	1030	196		2	W		X								3	
5P-Freda-221		2/26/13	1035	221		2	W		X								3	
5P-Freda-336		2/26/13	1040	336		2	W		X								3	
5P-MW110i-206		2/26/13	1105	206		2	W	X	X		X						9	MS/MSD
5P-MW110d-298		2/26/13	1115	298		2	W		X								3	
5P-MW107i-145		2/26/13	1235	145		2	W		X								3	

Possible Hazard Identification
☐ Non-Hazard ☐ Skin Irritant ☐ Rad
☐ Flammable ☐ Poison ☑ Unknown

Sample Disposal
☐ Return to Client ☐ Archive for _____ Months
☑ Disposal by Lab
(fees may be assessed if samples are retained longer than 3 months)

Requested Turn Around Time
☐ 2 Days (Rush) ☐ 7 Days (Rush) ☐ 21 Days
☐ 3 Days (Rush) ☑ 14 Days ☐ Other
(Rush = email data by COB on day due. Surcharges assessed.)

Carrier/Airbill #:

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
		02/26/13	1605
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received by: (Signature)	Date	Time

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ALS Environmental
Field Chain-of-Custody Record

Client Name & Address: URS, 756 E. Winchester St #400, SLC, UT 84107

Phone: 801 904 4000

FAX: 801 904 4100

e-mail:

Project No.: 24584937.03000

Project Name: 5-Points

Sampler: (Signature)

Matrix Codes: W) Water, B) Bulk, L) Liquid, F) Filter, S) Soil, G) Wipe, C) Solid, M) Media

Preservation Codes: 1) Cool to 4°C, 2) HCl to pH<2, 4°C, 3) H_2SO_4 to pH<2, 4°C, 4) HNO_3 to pH<2, 4°C, 5) NaOH to pH>12, 4°C, 6) ZnOAc/NaOH to pH>9, 4°C

Field Sample Number	Site ID	Date	Time	Depth	ALS Sample Number	Preservation Code	Sample Matrix Code	Sample for Matrix QC	Analyses Requested: VOCs 8260								No. of Containers	Remarks
SP-MW107d-200		2/26/13	1245	200		2	W		X								3	
SP-MW106i-145		2/26/13	1305	145		2	W		X								3	
SP-MW106d-195		2/26/13	1315	195		2	W		X								3	
SP-MW104-120		2/26/13	1335	120		2	W		X								3	
SP-MW1-2004-101		2/26/13	1400	101		2	W		X								3	
SP-MW91-101		2/26/13	1405	101		2	W		X								3	
SP-MW2-2004-104		2/26/13	1415	104		2	W		X								3	
SP-MW103-108		2/26/13	1430	108		2	W		X								3	
SP-MW105-140		2/26/13	1450	140		2	W		X								3	
SP-MW101-158		2/26/13	1530	158		2	W		X								3	

Possible Hazard Identification
☐ Non-Hazard ☐ Skin Irritant ☐ Rad
☐ Flammable ☐ Poison ☑ Unknown

Sample Disposal
☐ Return to Client ☐ Archive for _____ Months
☑ Disposal by Lab
(fees may be assessed if samples are retained longer than 3 months)

Requested Turn Around Time
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☐ 3 Days (Rush) ☑ 14 Days ☐ Other
(Rush = email data by COB on day due. Surcharges assessed.)

Carrier/Airbill #:

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		2/26/13	1605
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received by: (Signature)	Date	Time

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ALS Environmental
Field Chain-of-Custody Record

Page 3 of 3

Client Name & Address:
URS
756 E. Winchester St #400
SLC, UT 84107

Phone: 801 904 4000
FAX: 801 904 4100
e-mail:

Project No.: 24584937.03000
Project Name: 5-Points
Sampler: (Signature)

Matrix Codes: W) Water, B) Bulk, L) Liquid, F) Filter, S) Soil, G) Wipe, C) Solid, M) Media

Preservation Codes: 1) Cool to 4°C, 2) HCl to pH<2, 4°C, 3) H_2SO_4 to pH<2, 4°C, 4) HNO_3 to pH<2, 4°C, 5) NaOH to pH>12, 4°C, 6) ZnOAc/NaOH to pH>9, 4°C

Field Sample Number	Site ID	Date	Time	Depth	ALS Sample Number	Preservation Code	Sample Matrix Code	Sample for Matrix QC	Analyses Requested: VOC's 8260	Analyses Requested: Temp							No. of Containers	Remarks
Trip Blank		Lab Prepared				2	W		X								2	
Temp Blank		Lab Prepared								X							2	

Possible Hazard Identification
☐ Non-Hazard ☐ Skin Irritant ☐ Rad
☐ Flammable ☐ Poison ☑ Unknown

Sample Disposal
☐ Return to Client ☐ Archive for _____ Months
☑ Disposal by Lab
(fees may be assessed if samples are retained longer than 3 months)

Requested Turn Around Time
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(Rush = email data by COB on day due. Surcharges assessed.)

Carrier/Airbill #:

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
		02/26/13	1605
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received by: (Signature)	Date	Time

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ALS Environmental
Field Chain-of-Custody Record

Page 1 of 1

Client Name & Address: URS, 756 E. Winchester St #400, SLC, UT 84401

Phone: 801 904 4000

FAX: 801 904 4100

e-mail:

Project No.: 24584937.03000

Project Name: S. Points

Sampler: *(Signature)*

Matrix Codes: W) Water B) Bulk L) Liquid F) Filter S) Soil G) Wipe C) Solid M) Media

Preservation Codes: 1) Cool to 4°C 2) HCl to pH<2, 4°C 3) H_2SO_4 to pH<2, 4°C 4) HNO_3 to pH<2, 4°C 5) NaOH to pH>12, 4°C 6) ZnOAc/NaOH to pH>9, 4°C

Field Sample Number	Site ID	Date	Time	Depth	ALS Sample Number	Preservation Code	Sample Matrix Code	Sample for Matrix QC	Analyses Requested: VOCs 8260	Analyses Requested: Tons							No. of Containers	Remarks
SP-Field-336		4/6/13	745	336		2	W		X								3	
Trip Blank		Lab Prepared				2	W		X								2	
~~Trip Blank~~		~~Lab Prepared~~				~~2~~	~~W~~			~~X~~	(a.a) 04/08/13							

Possible Hazard Identification
☐ Non-Hazard ☐ Skin Irritant ☐ Rad
☐ Flammable ☐ Poison ☑ Unknown

Sample Disposal
☐ Return to Client ☐ Archive for _____ Months
☑ Disposal by Lab
(fees may be assessed if samples are retained longer than 3 months)

Requested Turn Around Time
☐ 2 Days (Rush) ☐ 7 Days (Rush) ☐ 21 Days
☐ 3 Days (Rush) ☑ 14 Days ☐ Other
(Rush = email data by COB on day due. Surcharges assessed.)

Carrier/Airbill #:

Relinquished by: *(Signature)*	Received by: *(Signature)*	Date	Time
		04/08/13	0840
Relinquished by: *(Signature)*	Received by: *(Signature)*	Date	Time
Relinquished by: *(Signature)*	Received by: *(Signature)*	Date	Time

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24584937.03000

3/8/10 Weather partly cloudy ~ 45° F

8:30 J. Dunn + S. DeYoung depart URS for S-Points.

9:00 Arrive on site. Boart Longyear not arrived yet. Check out blue stakes marking + proposed well location for MW-101.

9:05 Dennis Riding (Maverick) (environmental Director) arrives. Gives J. Dunn his business card + departs to talk to Bruce Broadhead

9:15 Bruce Broadhead (property owner) arrives on site to evaluate Blue stakes + drilling location for MW-101.

9:20 Robert Sullivan (Boart) + helpers Moses arrive on site. Tammi Messersmith arrives on site. All discuss possible drilling locations.

9:50 Tony Howes (UDEQ) on site to discuss drilling location.

10:30 Choose location in access road to west of Maverick (btwn Maverick + open property). Drillers to hand auger to 7' due to presence of power 1" conduit shown on plans (in access road).

~~12:00~~ 11:30 Drillers helper Jamie (Boart) arrives on site. Conduct tailgate H+S mtg.

12:00 Begin drilling @ MW-101 Hand auger to 9' bgs.

13:15 Begin sonic drilling @ MW-101 Sam Garcia from US EPA on site to observe drilling activities

1345 Drilling to 15' bgs

1430 Susan DeYoung departs sight

1550 Tony Howes departs site

1610 Sam Garcia departs site 37.0 feet to 40.0 feet lower K unit matrix supported gravely clay that may act as a barrier to vertical flow at the source area

1700 Mr Broadhead on site to request us to move the dumpsters

1810 End of drilling TD 80 feet bgs

1830 depart site soil bin locked site clean and secured

3/9/10

6:30 J. Dunn + S. DeYoung depart URS for 5-Pts.

7:00 Arrive on site. Boart Longyear already on site.

7:30 Conduct tailgate H+S mtg

7:45 Begin drilling @ MW-101.

9:15 Tony Howes (UDEQ) arrives on site. Jeff Dunn departs to meet ELM locate service person @ MW-102

9:40 Jeff Dunn back on site.

10:00 Sam Garcia (EPA) on site

10:45 Tammi Messersmith (URS) on site

11:50 Tammi Messersmith + Tony Howes depart site.

12:40 Sam Garcia + Jeff Dunn depart site.

18:00 End of drilling; 165 feet bgs TD.

18:30 Close + lock soil bin. Site cleared + secure. Depart site.

3/10/10

0700 J. Dunn & S. DeYoung from URS
R. Salois J.
Health and safety tailgate breifing discussed traffic site access and other potential hazards
Drill stem at 165' bgs - cutting bit and 20 foot stem at bottom of hole requires fishing out

0845 Water level from top of casing holder head ▼ 165.30' which is ~7 feet above ground surface ▼ dtw 158.30 bgs

0900 collect groundwater grab sample SP-MW101-155165
SP-MW101-155165

0915 J. Dunn + S. DeYoung depart site to look @ access for other two holes

0930 Return to MW-101. Drilling already begun again for day.

11:00 Water level from top of casing holder head (platform) 153.06', ~7 feet above ground surface. DTW=146.06 bgs
Collect GW sample SP-MW101-165165 (casing set @ 165' bgs).

11:10 Dee Jette (Davis County Health Dept) on site to discuss drilling + request

that we share data, if possible.

11:20 Dee Jette departs. Left her phone number + email 801-451-3308; deejette@co.davis.ut.us.

11:25 Tony Howes on site.

13:10 Collect GW sample 5P-MW101-185194
~~DTW~~ (SD) Water level from top of casing holder head (platform) = 156.22
DTW = 149.22 bgs (platform = 7' above ground)

13:15 Jeff Dunn departs site

13:25 Tony Howes departs site.

14:00 Tim Binder (URS) on site to meet drillers and get info so he can take over drilling oversight on 3/12/10 and 3/15/10.

~~15:20 Tim Binder departs site after meeting drillers + looking @ locations~~
~~MW~~ (SD)

14:45 Collect GW sample 5P-MW101-195205
Water level from top of casing holder head (platform) = 156.32
DTW = 149.32 bgs (platform = 7' above ground)

15:20 Tim Binder departs site after meeting drillers and looking at locations MW-102 and MW-103.

15:45 Call Meredith @ ALS Datachem to discuss sample drop off. She will wait until 6pm (18:00) tonight and I should call her @ 801-904-4306 when I arrive, or if I will be later than 6pm (18:00).

17:05 Collect GW sample 5P-MW101-205225
Water level from top of casing holder head (platform) = 155.12
DTW = 148.12' bgs

17:30 Clean up + depart site for Datachem. Drillers agree to clean up site + lock soil bin before departing. Plan to meet back @ 7am tomorrow.

17:50 Drop off samples @ Datachem

3/11/10

07:15 Receive groundwater preliminary results from Datachem

SP-MW101 – 155165 : 56 ug/L
– 165185 : 12 ug/L
– 185194 : 5.6 ug/L
– 195205 : 3.3 ug/L
– 205225 : 1.9 ug/L

07:40 Talk to Jeff Dunn regarding results and where to screen well. He will discuss with Tammi.

08:10 Talk to Tammi regarding results. She still needs to talk to Jeff Dunn + Tony Howes (UDEQ) before making decision on where to screen well.

08:30 S. DeYoung arrives on site, Drillers already on site.

09:15 Jeff Dunn calls. Want to screen MW-101 from 155' – 185' bgs. Drillers need to use centralizer in hole @ bottom + top of screen and ~ every 40'.

09:30 Conduct tailgate H+S mtg. Discuss well installation specs. Drillers do not have high solids bentonite grout for use below water table. Will use bentonite chips instead, which is

OK per Jeff Dunn (via phone).

10:00 Drillers begin pulling casing that is set to 225' bgs to prep for well installation.

10:40 Put in 2 bags bentonite chips, then tagged water level @ 146.60' bgs.

11:10 Used 5 bags bentonite chips to back-fill hole to ~~185~~ 187.5' bgs

11:30 Use 10/20 silica sand to backfill hole to 185' bgs

11:45 Start setting 30' well screen (0.010 slot), sch 80 PVC with centralizer @ bottom + top of 30' screen.

11:50 Drillers didn't get the bolts delivered that go with the centralizers. Stop work to wait for Ronnie Cain (Boart) to arrive w/ bolts.

13:00 Ronnie (Boart) arrives w/ bolts. Resume installing screen + Sch 80 PVC Blank casing (4"), after placing centralizer at top of 30' screen

13:20 Jeff Dunn + Tim Binder (URS) on site. Discuss decon + installation plans w/ Robert (Boart)

13:40 J. Dunn + T. Binder depart.
14:00 Call Tammi re: setting up a decon pad near roll-off soil bin. OK per Tammi.
14:15 Drillers begin installing 10/20 Silica Sand (primary filter pack around well screen)
15:20 Install 10/20 Silica sand from 150' - 187.5' bgs (20 bags 10/20)
15:40 Install 20/40 Silica sand from 147.5' - 150' bgs (1 bag 20/40 (30/70))
16:20 Install bentonite chip plug from 142' - 147.5' bgs (6 bags bentonite chips) Drillers hydrate bentonite plug.
16:30 Clean up site; lock soil bin.
16:40 Depart site. Work to resume tomorrow @ 07:00.

3-12-10 Tim Binder - URS

0700 - TB arrives on site
- TB conducts tailgate safety meeting
- Drillers begin mixing grout
1015 - Drillers finish grouting and start breaking down rig for decon.
1130 - Break for lunch
1200 - Return from lunch. Drillers begin decon and well pad finishing.
1548 - Static water level = 143.96' btoc
144.3' bgl
1600 - Finish decon and well pad installation.
1615 - TB and BLY leave site. Resume work Monday @ 0700.

3-15-10

0700 - TB arrives on site and meets drillers. Conduct tailgate safety meeting.

0730 - Start demob/mob to second location.

0850 - Tony Howes w/ UDEQ on site.

1000 - Tony Howes leaves site.

1200 - Jeff Dunn (URS) on site. Drillers shut down to empty soil hopper at MW-101 location. TB and Jeff Dunn go to MW-101 location to inspect well pad.

1245 - Jeff Dunn leaves MW-101 location.

1300 - Resume drilling at MW-102 location.

1530 - Tony Howes (UDEQ) on site. He is happy with progress. Boring is at 95' bgl.

1550 - Tony Howes leaves site.

1720 - Drilled to 120' bgl. Conditions are wet. Driller reports soft drilling @ 116' bgl. Decide to advance casing to 115' bgl and let boring sit overnight in hopes of water sample in morning.

1800 - TB and BLY leave site

3/16/10 Weather: Sunny, warm

0630 S. DeYoung departs URS for 5-Pts

0700 Arrive @ MW-102 location. Drillers on site.

0730 Conduct tailgate H+S mtg. Drillers to clean out casing, then we will check water level to see if we can get a sample.

0740 Get call from Jeff Dunn. If there is water here to sample, will sample here, then every 20' (so 120', 140', 160'). Tim Binder (URS) called Datachem yesterday to tell them we would probably be sampling today.

0820 Check WL in hole. WL = 115.30' below platform = 108.30' bgs. Casing set @ 105' bgs; TD = 125' bgs

0830 Collect GW sample SP-MW102-105125
Resume drilling (below platform)

10:00 Check WL = 116.90'; DTW = 109.90' bgs

10:10 Tony Howes (UDEQ) on site

10:15 Collect GW sample SP-MW102-125145

~~10:30 Drillers shut down to empty~~ (SP)

10:30 Ronnie Cain (Boart) on site to check on drilling progress.

10:45 Tony Howes (UDEQ) + Ronnie Cain (Boart) depart site.

11:10 Ronnie Cain (Boart) on site

12:00 Check depth to water = 118.35' below platform, which is 7' above gound. DTW = 111.35' bgs

12:15 Collect GW sample SP-MW102-145165
Done drilling for the day. Drillers shut down + take two trips with the hopper to the soil bin @ location MW-101.

12:50 S. DeYoung departs MW-102 site to collect GW elevation data @ nearby wells per Jeff Dunn's request

14:30 Finish getting GW levels @ the following wells:
MW #2-2004: 103.53' btoc
MW #1-2004: 100.65' btoc
Mall Well #2: 122.91' btoc*
Mall Well #1: Dry
1998-MW #1: Dry

*probably dry; TD = ~124' btoc and casing was broken + jagged in vault.

14:40 Depart site for Datachem
15:10 Drop off GW samples @ Datachem + p/u more VOAs.
15:30 Return to VRS to print more forms + p/u more supplies

3/17/10 weather: sunny, warm
7:30 S. DeYoung departs for 5-Pts, location MW-102.
8:00 Arrive on site. Drillers already on site warming up rig. Conduct tailgate H+S.
8:30 Check water level @ MW-102. WL = 116.56' below platform = 109.56' bgs. Decide to set screen from 115' - 135' bgs since first saw saturated core @ 116' bgs + current WL might be influenced by ~~casing~~ rods @ going in + out of hole.
9:00 Jimmy + Moses (Boart) load well installation materials from MW-101 location.
9:30 Begin backfilling hole w/ native backfill + bentonite chips.
10:00 Finish backfill hole w/ native soil + bentonite chips (*) from 134.5' - 165' bgs.
10:15 Two observers from Boart Longyear arrive on site. (Alex + Nate)
10:40 Install Sch 80 blank PVC + 20' (0.010") slot screen to 134.0' bgs.
10:50 Five more observers from Boart Longyear

(*) 5 bags bentonite chips

arrive on site to observe a sonic rig.
11:30 All Boart Longyear observers depart.
11:55 Sandpack + bentonite chips settled while pulling casing, so bottom of well @ 135' bgs; screened from 115'-135' bgs.
12:15 Install 10/20 Silica sand from 110'-135' bgs (17 bags 10/20 Sand)
12:30 Install 2 bags 20/40 silica sand, but sandpack still @ 110' bgs. There must be a void in the formation. Drillers shut down to go to shop for more 20/40 silica sand.
13:40 Drillers back on site after picking up 20/40 silica sand + bentonite cement for grout.
13:55 Install 20/40 silica sand from 108'-110' bgs (6 bags 20/40 sand)
14:10 Install bentonite clay seal (hydrated) from 103'-108' bgs (4 bags bentonite chips).
15:15 Brandon Rawlins of Smoot Commercial Brokers + Mgmt, Inc. on site. Asks us to move all our vehicles out of parking lot adjacent to MW-102 (on southeast

corner of 1250 South + 500 West in Bountiful, UT) States that he is property owner + that he did not give permission to have one access to the parking lot blocked by drill rig (although Tony Howes stated he had gotten permission from property owner). Brandon also noted several areas of oil in driveway that leaked from the forklift. Robert (Boart) will power-wash the parking lot when finished, and Brandon will walk the lot with me tomorrow to make sure all looks OK. Vehicles moved onto street.
16:00 Receive call from Tammi (URS) + Tony Howes (UDEQ) regarding above. They agree w/ approach and state that rig needs to move off this location tonight, if possible.
16:05 Install grout from ground surface to 103' bgs. Cut down well riser to prep for surface completion.
16:40 Tony Howes (UDEQ) on site to check progress + discuss oil stains in parking lot. He will be back on site tomorrow.

17:00 Tony Howes departs site.
17:30 Break down rig for decon + well pad installation tomorrow. Park rig @ MW-103 location. Will park the rod truck over the MW-102 hole overnight.
18:10 Clean up + depart site

3/10/10
6:30 S. DeYoung departs for 5-Pts
7:00 Arrive on site @ MW-102 location. Drillers on site, power-washing the parking lot.
8:15 Finish power-wash in parking lot. Jimmy + Moses (Boart) mob w/ rod truck to decon pad. Robert (Boart) + I mob to MW-103 location to set up. Cover MW-102 with cones while waiting to do surface completion.
8:30 Conduct tailgate HTS mtg
10:00 Finish decon + setting up rig on MW-103.
10:15 Begin drilling @ MW-103. Hand Auger to 7' bgs.
10:35 Tony Howes (UDEQ) on site to check progress
11:50 Tony Howes departs site. I will call him if/when Brandon Rawlins (Smart mgmt) wants to walk thru the parking lot @ MW-102 to check that it is clear.
13:15 Break for lunch
13:45 Resume drilling

16:30 L/M for Brandon Rawlins (Smoot Mgmt) regarding meeting tomorrow to walk thru the parking lot @ MW-102 location to ensure it is clear.

18:00 Shut down rig for night. TD for day = 95' bgs. Not in water yet.

19:15 Clean up + depart site.

3/19/10

6:45 S. DeYoung departs for S-Pts.

7:45 Arrive on Site. Drillers on site warming rig + loading soil core from yesterday into hopper.

7:30 Conduct tailgate HTS mtg. Moses + Jimmy (Boart) take hopper to soil bin @ MW-101 location.

7:45 Begin drilling for day

9:00 Soil core wet @ ~106' bgs. Check WL = 111.30' below platform = 101.30' bgs

Casing set @ 95' bgs; TD hole = 115' bgs

9:15 Collect GW sample SP-MW103-095115

Call Datachem to tell them to expect samples this afternoon.

10:50 Check WL = 112.25' below platform = 105.25' bgs

Casing set @ 117' bgs; TD = 135' bgs

11:00 Collect GW sample SP-MW103-117135

11:55 Jimmy + Moses (Boart) take hopper to MW-101 location to dump cuttings in soil bin.

12:50 Check WL = 113.50' below platform = 106.50' bgs. Casing set @ 135'; TD = 155' bgs

13:00 Collect GW sample SP-MW103-135155

13:20 Clean up site + depart for Datachem.
14:00 Drop off samples @ Datachem.
14:30 Return to URS to prep for next week.

3/22/10
7:00 Receive sample results on email for GW samples from MW-103. Call Tammi to discuss + decide to screen well @ top of water table like last 2 wells.
7:30 Depart for S-Pts.
8:00 Arrive on site @ MW-103 location. Drillers already on site. Conduct tailgate H+S mtg.
8:05 Receive call from Jeff Dunn. Will screen well from 105'-125' bgs.
8:15 Drillers begin pulling casing + pouring bentonite chips to backfill to 125' bgs. (4 bags bentonite chips)
9:50 Install Sch 80 Blank PVC + 20' of 0.010" slot screen to 125.3' bgs (sand pack + bentonite settled by ~3" when casing was pulled).
10:05 Check WL = 114.10' from top of steel drilling casing, which is 10' above ground. BTW = 104.10' bgs (after pouring ~6 bags 10/20 sand into annulus, which likely raised WL by 1-2').

10:50 Install 10/20 Silica sand from 100' - 125' bgs (21 bags 10/20 sand)
11:15 Install 20/40 silica sand from 98' - 100' bgs (3 bags 20/40)
11:40 Install bentonite clay seal (6 bags) (hydrated) from 93' - 98' bgs
11:45 Drillers depart site to go to Lowe's for more bags of cement for the cement-bentonite grout.
12:10 Drillers back on site. Begin mixing grout.
13:40 Install cement-bentonite grout to surface. Cut down riser + allow grout to sit/settle before doing surface completion.
(24 bags portland cement; 6 bags bentonite gel)
14:00 S. DeYoung departs site. Jeff Dunn (URS) to arrive shortly to take over the oversight for rest of afternoon

3/23/10
7:30 S. DeYoung departs for 5-Pts
8:00 Arrive @ MW-103 location. Robert (Boart) has just started cutting asphalt for surface completion. Jimmy + Moses (Boart) are @ decon pad.
Discuss well development schedule w/ Robert. He + Moses will come back next week (Mon or Tues) to develop.
8:20 Call Jeff Dunn. Drillers had finished grouting hole + were decanning when he arrived yesterday. Discussed well development schedule - he will inform Tammi.
9:00 Robert (Boart) departs to run errand.
9:45 Robert returns, finishes removing asphalt.
11:00 Robert, Jimmy, + Moses mob drill rig to shop/yard in SLC
12:00 Drillers return to finish surface completion @ MW-103.
13:00 Finish pouring cement @ MW-103
S. DeYoung departs site for URS
Drillers cleaning up.

3/30/10

7:30 S. DeYoung departs for 5-Pts

7:55 Arrive @ Maverick @ MW-101 location.

8:10 Don (Boart) arrives on site to set up for well development @ MW-101

8:30 Conduct tailgate H+S. Calibrate Eureka meter

9:00 Begin surging + bailing MW-101

10:15 Begin installing pump in MW-101

11:05 Begin purge @ MW-101

11:20 pump stopped. Don will pull out pump + install back-up pump.

12:15 Begin installing second pump in MW-101

13:10 Begin purge again @ MW-101

15:00 Finish purge @ MW-101. Start pulling pump from well. Will dump water @ South Davis Sewer District tomorrow.

16:00 Clean up + depart site. Mob to Datachem to p/u sample containers for tomorrow.

16:30 p/u sample containers from lab finish for day

4/1/10

7:00 S. DeYoung departs for 5-Pts

8:05 Arrive @ MW-101 location. Meet Tim Binder (UPS) + Don Hansen (Boart) on site.

8:05 Mob to YVC Cleaners - meet Mark Taggert (Earthprobe) on site.

8:20 Tony Howes (UDEQ) on site. Walk perimeter of property + discuss buried utilities w/ YVC employee.

8:40 Conduct tailgate H+S. Prep to drill DP-101

9:00 Begin hand auger + drilling @ DP-101. Hand auger to 4' 4"

9:45 Collect soil sample SP-DP101-004005

10:15 Collect soil sample SP-DP101-014015

10:20 Collect soil sample SP-DP101-024025

10:25 Collect soil sample SP-DP101-001004

10:35 Begin hand auger + drilling @ DP-102

11:00 Hand Auger to 5', but hand auger sliding off what Mark thought was a cobble. So he uses dry

bar in hole to clear cobble + punctures top of a water-carrying line.

11:15 Call Jeff Dunn (URS) to tell him we hit a buried utility. Water not under pressure + not leaking out of pipe as far as we can see.

11:40 Conference call w/ Tammi + Jeff (URS) + Tony Howes (UDEQ). Appears to be sewer line. Will have to get it fixed. Tammi + Jeff to find a sub to fix.

12:35 Mob to DP-103
Collect soil samples as noted on the chain of custody.

13:10 Receive call from Tammi (URS). Towers Plumbing will be on site soon to repair buried sewer.

14:00 Mob to DP-104

14:10 Towers Plumbing on site.

14:25 Katie Dick (URS) on site. She will oversee sewer excavation + repair, and collect samples

from floor of excavation.

15:00-hour S. DeYoung collects soil samples from DP-104 boring as indicated on chain of custody. Katie Dick collects samples from floor of excavation (4 corners and from beneath the sewer pipe).

16:00 Take soil cuttings to roll-off bin.

16:15 Mark Taggert (Earthprobe) departs site after cleaning up site.

16:30 Towers Plumbing departs site after back-filling excavation w/ the soil that had been excavated, plus some gravel.

16:35 Katie + Susan measure distances from 3 locations (that can be found on an aerial map) to one corner of the excavation so that it can be accurately located.

17:00 Depart site for Datachem

17:30 D/o samples @ Datachem

Susan DeYoung

4/2/10

7:30 S. DeYoung departs for 5 Pts

8:00 Arrive @ YVC cleaners. Mark Taggart (Earthprobe) on site

8:30 Conduct tailgate H+S mtg. Begin drilling DP-102 Collect soil samples as noted on chain of custody

9:30 Clean up site. Talk to Kent (YVC) and look @ gallon ziplock bag of 4 oz soil sample jars found in bottom of excavation yesterday. Samples were labeled as "tank" samples and dated 6/27/07.

9:45 Earthprobe departs site.

~~10:00~~ 10:15 S. DeYoung departs site for Datachem to get DI water for equipment blank.

10:45 Mob to Earthprobe's shop to collect EB.

11:00 Collect equipment blank EB-040210

11:20 D/O samples @ Datachem.

12:00 Return to URS

4/6/10

10:30 S. DeYoung departs URS for 5 Pts.

11:00 Arrive in Bountiful. Go to South Fork Hardware for twine + buckets

11:20 Arrive @ MW-103. Get WL Reading, noted on static WL form

11:30 Jeff Dunn arrives to help set up for sampling

11:45-14:10 Trouble-shoot pump problems incl. calling Pine Environmental tech support.

14:15 Begin purge @ MW-103.

14:55 Collect GW sample SP-MW103 and SP-MW103-Y (FD) @ 15:00.

15:20 Mob to MW102 and set up for purge.

15:40 Begin purge @ MW-102

15:50 Jeff Dunn departs site

16:50 Collect GW sample SP-MW102

17:15 Clean up + depart site

4/7/10

8:00 Calibrate Horiba U-22

8:15 S. DeYoung departs for 5 Pts

8:45 Get decon water @ Slim Olson's in Bantiful

9:00 Arrive @ MW #2-2004 location

10:00 Begin pump @ MW #2-2004. This is 2" well, so could not put WL meter down hole w/ pump. Lowered pump to bottom of well then used WL meter to measure pulling pump off bottom ~ 8', so pump sits @ ~108' bgs. Will follow same procedure at MW #1-2004.

11:00 Collect GW sample SP-MW22004 and MS/MSD

11:30 Clean up + depart site for Evco House of Hose to get more 1/4" OD tubing

13:00 Return to site @ MW #1-2004 location.

14:35 Collect GW sample SP-MW12004

14:55 Collect equipment blank SP-EB-040710. Mob to MW-101

15:45 Begin purge @ MW-101

16:30 Cannot get water to surface. Will

pull pump to troubleshoot and will have to get sample tomorrow.

17:00 Talk to tech support @ Pinc. They will send new equipment priority overnight.

17:30 Clean up + depart site

4/8/10

8:00 S. DeYoung arrives @ office to await new equipment

8:40 Call QED tech support. They say 3020 will work to 200' depths, but not quickly. Not recommended for depths > 100'. Will try a longer cycle + waiting a long time.

9:30 Equipment arrives

9:50 Depart URS for 5 Pts

10:20 Arrive @ MW-101

10:40 Calibrate Horiba U-22

11:00-12:30 Attempt to get pump to work. Call QED. Does not work.

12:30 Call Jeff Dunn. He will come up w/ bailer

13:30 J. Dunn arrives. Put pump back down well. It works!

14:30 Pump stopped working before water got to surface. Pull everything + get sample w/ bailer.

15:30 Collect GW sample SP-MW101. Will have lab hold until I find

out if I can get sample using Grundfos pump tomorrow.

Update: Grundfos pump cord only 100', so can't use @ well MW-101. Lab will analyze bailer sample

5/13/10

9:50 S. DeYoung departs URS for airgas to p/u compressed nitrogen for gw sampling @ MW-101 @ 5 pts

10:15 p/u gas + depart for Bountiful.

10:45 Meet Tony Searle (QED local rep) @ Maverick in Bountiful. Begin to set up to sample @ MW-101

11:15 Realize we do not have correct fitting to connect air hose to tubing going to pump. T. Searle claims this should have come w/ pump, but I recall it arriving w/ the controller when we rented from Pine. T. Searle departs for Lowe's to try to purchase fitting.

12:00 T. Searle + S. DeYoung mob to Evco in SLC to try to purchase fitting.

13:00 Return to MW-101 w/ fitting from Evco. Not a perfect fitting, but we will try.

14:00 Got water to surface!

14:25 Collect GW sample SP-MW 101

15:20 Clean up + depart site for Datachem

15:45 D/o samples @ Datachem + return to URS + return Airgas can

9-20-10

0815 calibrate Eureka water quality meter
pH 10 exp feb 2011
pH 7 exp march 2011 lot 1904393
sp cond 1412 ms/cm exp Aug 2011
DO - 651 mm Hg
ORP 240 mV ex Sep 2014 lot 1847

1030 Evco

1100 Arrive at MW1 to sample

1110 Sampled hydrasleeve SP-MW12004
107.80

1230 Sampled SP-MW12004 LF

1320 Depart MW-1 to MW-101

1330 Arrived at MW-101

1342 Sampled HydraSleeve sampler SP-MW101-153

1355 sampled SP-MW101-160

1405 sampled SP-MW101-160-4

1420 sampled SP-MW101-170 + MS/MSD

1435 sampled SP-MW101-180

assembled bladder pump and purged MW-101

1540 collected SP-MW-101-LF from 160 feet btoc

1610 Departed MW-101

1616 collected SP-MW22004 from bottom of well ~115 ft btoc

9-20-10

1640 Collect Hydrasleeve sample SP-MW103 from ~ 115 ft BTOC

1700 Collect Hydrasleeve sample SP-MW102 from ~ 123 ft BTOC

1710 Depart site to lab for sample delivery

1730 Arrive at Lab and delivered samples.

1600 Arrive at URS office.

9-20-10

11-18-10

J. Dunn and T. Binder

1030 - Depart office to site. Check static water levels in existing wells and check out locations for proposed wells.

1200: Finish recording grandwater elevations and inspection of proposed location ~~&~~ for drilling during the week of the 29th. Return to ~~S~~ office.

11-18-10

11-30-10 T. Binder

0730 - Mob. to site in Woods Cross
0800 - Arrive on site. Meet BLY.
0820 - Conduct H&S meeting.
0845 - Tammi Messersmith on site
0855 - Andrew with EPA on site.
0900 - Meet with City of Woods Cross to clear MW-104 location
0930 - Back on location at MW-105. Drillers begin setting up. Location has to be moved 5 feet north due to sewer service line conflict. & South Davis Sanitation District located line in the field for us.
1105 - Begin hand augering MW-105 to 8' bgs.
1600 - Finish drilling for the day. Reached a depth of 95' bgs. Drillers empty hopper and clean up site.
1640 - TB and BLY leave site.

T. B.
11-30-10

12-1-10 T. Binder

0730 - Mob. to site in Woods Cross
0750 - T. Binder and Brant Langyer on-site. BLY starts up equipment and we conduct a tailgate safety meeting.
0815 - Start drilling. Andrew with EPA on site.
0845 - Jeff Dunn (URS) on site.
1015 - Tony with the UDEQ on site.
1130 - Tony leaves site.
1200 - Break for lunch.
1230 - Return from lunch.
1300 - Andrew (EPA) leaves site to return to Denver.
1400 - Finish drilling and collecting groundwater samples.
1430 - Jeff Dunn leaves site to deliver samples to lab. BLY cleans up site.
1500 - T. Binder and BLY leave site.

T. B.
12-1-10

12-2-10 T. Binder

0800 - T. Binder and BLY on site. Conduct tailgate safety meeting.
0830 - Begin installing well at MW-105.
1030 - Robert S. with BLY on site to deliver concrete for well pad construction
1415 - Finish setting well and begin construction on well pad
1430 - Tony with UDEQ on site.
1450 - Tony leaves the site.
1630 - Finish well pad construction. Move trucks to MW-104 location.
1645 - T. Binder and BLY leave site.

T. Binder
12-2-10

12-3-10 T. Binder

0000 - TB and BLY on site at MW-104 location. Conduct tailgate safety meeting.
0815 - Hand auger MW-104 to 8' bgs.
0900 - Jeff Dunn (URS) on site. Begin drilling MW-104.
0915 - Jeff Dunn leaves site.
1115 - Groundwater encountered @ 86' bgs
1145 - Jeff Dunn on site to collect water samples.
1330 - Jeff Dunn leaves site to deliver water samples to lab.
1415 - Finish drilling and cleaning up site.
1430 - TB and BLY leave site. Will return in the morning to set well.

T. Binder
12-3-10

12-4-10 T. Binder

0800 - T. Binder and BLY on site. Conduct H&S meeting.

0815 - Call from Tammi Messersmith. Still haven't recieved results for groundwater samples taken from MW-104. She will call back when she has the results.

0915 - Groundwater elevation in MW-104 measured at 85.3' bgs.

0955 - Call from Jeff Dunn (URS). Lab results show increasing PCE results with depth. We need to drill deeper and collect samples at 115' bgs and 130' bgs.

1200 - Collect groundwater samples and depart site for lab. Drillers will clean up and depart site.

12-6-10

12-6-2010 J. Dunn

0920 Arrived on site to meet with Travis Osterberg & Lewis Fisher

0925 Health and Safety breifing

0930 Begin drilling of MW-104 at depth of 142 feet bgs

1030 Ready to sample groundwater from 147-150 Tim Binder on site.

1040 Collected sample 5P-104-147150

1130 Collect Sample 5P-MW104-162165

1200 Jeff Dunn leaves site

1230 Collect Sample 5P-MW104-172175. Encountered aquatard @ 168.5' bgs

1300 - TB and BLY leave site.

48

12-7-10 T. Binder

0830 - T. Binder on site. Spoke with Jeff Dunn on the phone and the well at MW-104 is to be screened from 115 to 135' bgs.

0900 - BLY (Travis, Lewis and Brett) on site with additional well supplies. Conduct tailgate safety meeting. Begin installing monitoring well. Hole will be backfilled to a depth of 140' bgs with bentonite chips.

1300 - Finish installing monitoring well. Drillers pack up equipment and start completing well pad.

1530 - Finish well pad and clean up site. TB and BLY depart. Meet Jose with development crew @ 8 am on Thursday.

"Rite in the Rain"®
ALL-WEATHER WRITING PAPER

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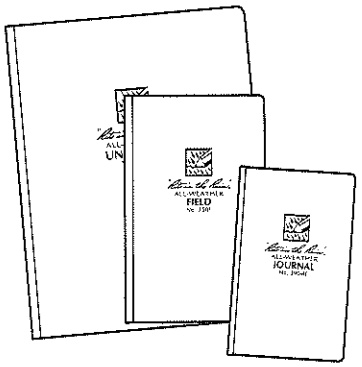
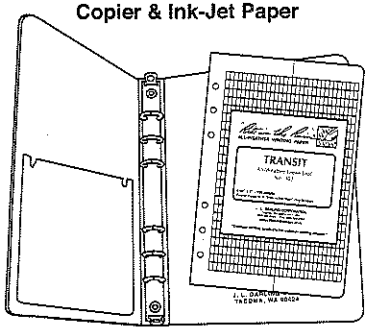
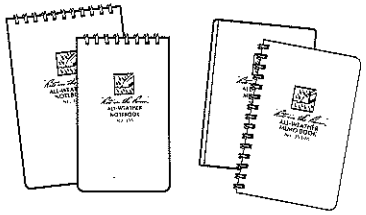

Bound Books



Loose Leaf / Ring Binder


Memo Books

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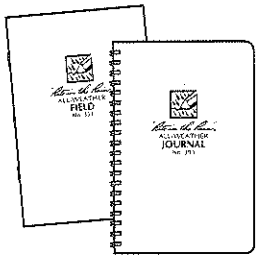
Notebooks

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4/6/12

8:40 K. ~~Drew~~ Crave (SD) + S. DeYoung depart for 5 points.

9:20 Arrive @ Freda well. Call John Ruckert 801-499-9047. He said the on-call person will be here soon, to let us ~~know~~ (SD) in.

10:20 John from public works lets us into pump house.

10:33 WL = 16.05 ft below MP (port on (W) side of casing)

WL = 16.66 btoc

TOC = 3' above ground surface (*)

(*) (2.5' above cement floor + 0.5' cement in floor = 3 ft)

HS#	Top of HS depth	Ft btwn HS	Mark on HS tether
0	~~193~~ 0	193	~~822~~ 404
1	~~218~~ 193	25	597
2	~~333~~ 218	115	622
3	~~363~~ 333	30	737
4	363	55	767
5	418		822

11:30 Set hydrolevels according to above table. Will wait 2 hrs. to sample

1330 Return to pump house to begin sampling

1345 Collect GW sample + MS/MSD Freda-193196 (triple volume)

14:00 Collect GW sample Freda-218221

14:10 Collect GW sample FD Freda-218221-Y

14:15 Collect GW sample Freda-333336

14:20 Collect GW sample Freda-363366

14:30 Collect GW sample Freda-418421

15:00 Depart site after cleaning up. Stored HS tether in large ziploc bag inside pump house per L. Cannon's instructions. John from NSL will lock up.

15:30 D/O samples @ ALS datachem.

16:10 Return to URS

5/10/12

7:45 C. Howell + S. ~~Defoung~~ Landmark depart URS for 5 Pts

8:30 John Ruckert (NSL) unlocks gate @ Freda well.

9:10 Set HS's in Freda well @ same depths as on 4/6/12 (see that entry). Also collected WL data, recorded on form

9:30 Set top HS @ MW-106i @ 145' bgs Installed tether, clip, + weight as well.

9:45 TD @ MW-106d = 192.5' bgs (silted up again after C. Howell bailed out ~6' silt on 5/3/12)

Set top of HS @ 189' bgs. Installed tether, clip, + weight.

10:10 Set top HS @ MW-104 @ 119' bgs.

10:30 Set top HS @ MW2-2004 @ 111' bgs Needs both weights in well to reach bottom.

10:45 Lost weights in well MW1-2004 b/c attached 2 weights to bottom of bag, but bag broke w/ weights @ well bottom. Will retrieve weights when sampling

10:50 Set top HS (new HS) @ 109' bg @ MW1-2004.

11:16 At MW-101. Maverick (upgradient) is

~~is~~ SDC replacing tanks + all pumps, electrical + piping. Possible release? Not confirmed in field. Called Tammi to relay info about Maverick.

11:25 Chris spoke to one of the excavators: No known release. Upgrading from steel to fiberglass tank(s). State took soil samples when they pulled steel tank(s).

11:30 Set top HS @ MW-101 @ 158' bgs

11:50 Set top HS @ MW-103 @ 116' bgs

12:00 Borrowed weight from MW-102 to use @ ~~MW-106~~ SDC MW-107. Decorned weight + put bolts on tether @ MW-102 to keep tether from tangling in well. Will need to replace weight @ MW-102.

12:20 Set top HS @ MW-105 @ 146' bgs. Installed new tether since old one was very black + unreadable. Re-used the clip + weight.

12:45 Set top HS @ MW-107i @ 145' bgs

12:55 ~~Site~~ SDC Set top HS @ MW-107d @ 200' bgs

13:10 Clean up + depart site for hardware store to purchase magnet to retrieve weights from MW1-2004.

13:20 Weight are not magnetic, so can't retrieve w/ magnet.

13:30 Pick up bottles @ ALS datachem for sampling on Tuesday 5/15/12.
14:00 Return to URS.

5/15/12
7:15 C. Howell + S. Lundmark depart for 5 pts
7:50 Conduct H+S mtg; SDL MAL

8:20 Collect GW sample SP-MW107i-145148 + MS/MSD (triple volume)
8:35 Collect GW sample SP-MW107d-200203 + Field dup SP-MW107d-200203-Y (8:40)
Water smells sulfury.
9:00 Collect GW sample SP-MW106i-145148
9:20 Collect GW sample SP-MW106d-189192
~~Very~~ SDL Much sediment in sample; used un-preserved VOAs.
10:00 Collect GW sample SP-Freda-193196
10:05 Collect GW sample SP-Freda-218221
10:10 Collect GW sample SP-Freda-333336
10:15 Collect GW sample SP-Freda-363366
10:20 Collect GW sample SP-Freda-418421
10:35 Collect GW sample SP-MW104-119122
10:45 Collect GW sample SP-MW22004-111114 + FD SP-MW22004-111114-Y (10:50).
Put both weights back in well on tether.

11:00 Collect GW sample SP-MW1204-109112
11:20 Collect GW sample SP-MW103-116119
There was an approx. 15ft knot in tether when we pulled up sample; could possibly affect sample results.
11:30 Collect GW sample SP-MW105-146149
12:00 Collect GW sample SP-MW101-158167
12:10 Clean up + depart site
12:40 Drop off samples @ ALS datachem
13:00 Return to UIRS

4/1/13

910 Chris Howell @ Fredr well
53°F Cloudy
Call JD Watt (801)557 4709
→ he will have someone come
to open well.

930 NSL here to open well

945 Hydrosleve set @ 221' in Fredr well.

1000 Lock up + depart site.

4/4/13

800 Katie Crane called
JayDee Watt to have him
open gate - informed
that they were istaling
the pump today + the
221' Sample had been
pulled by the pump
installers. Talked to
Laurence Cannon who called
Karyn. She was not awance
the pump was being
installed today.

845 Karyn called back saying
the pump would not
be installed until next week
~~Also informed that~~

900 K. Crane goes to pick up
Sample ~~was~~ bottles from ALS

1000 Arrive @ Fredr well to
set hydrosleve @ 336'
Drillers are at well
Still installing pump down
hole.

1015 Call JayDee to check if

they are going to stop
pump installation until
next week
1100 Drillers call John who
tells them to take out
the pipe they have
down well.
1230 Set hydrosleve at
336' - tether mark 738
1:00 K. Crane Returns
40 WRS.

(1) Freda Re-sample 4/8/13

730 Chris Howell @ Freda w/ K
- House + gate unlocked.
745 Collect hydrosleve sample
@ 336'
SP - Freda - 336
815 Pack up, lock door + gate
depart site for ALS
840 Hand deliver sample
to ALS (on ice)
return to office