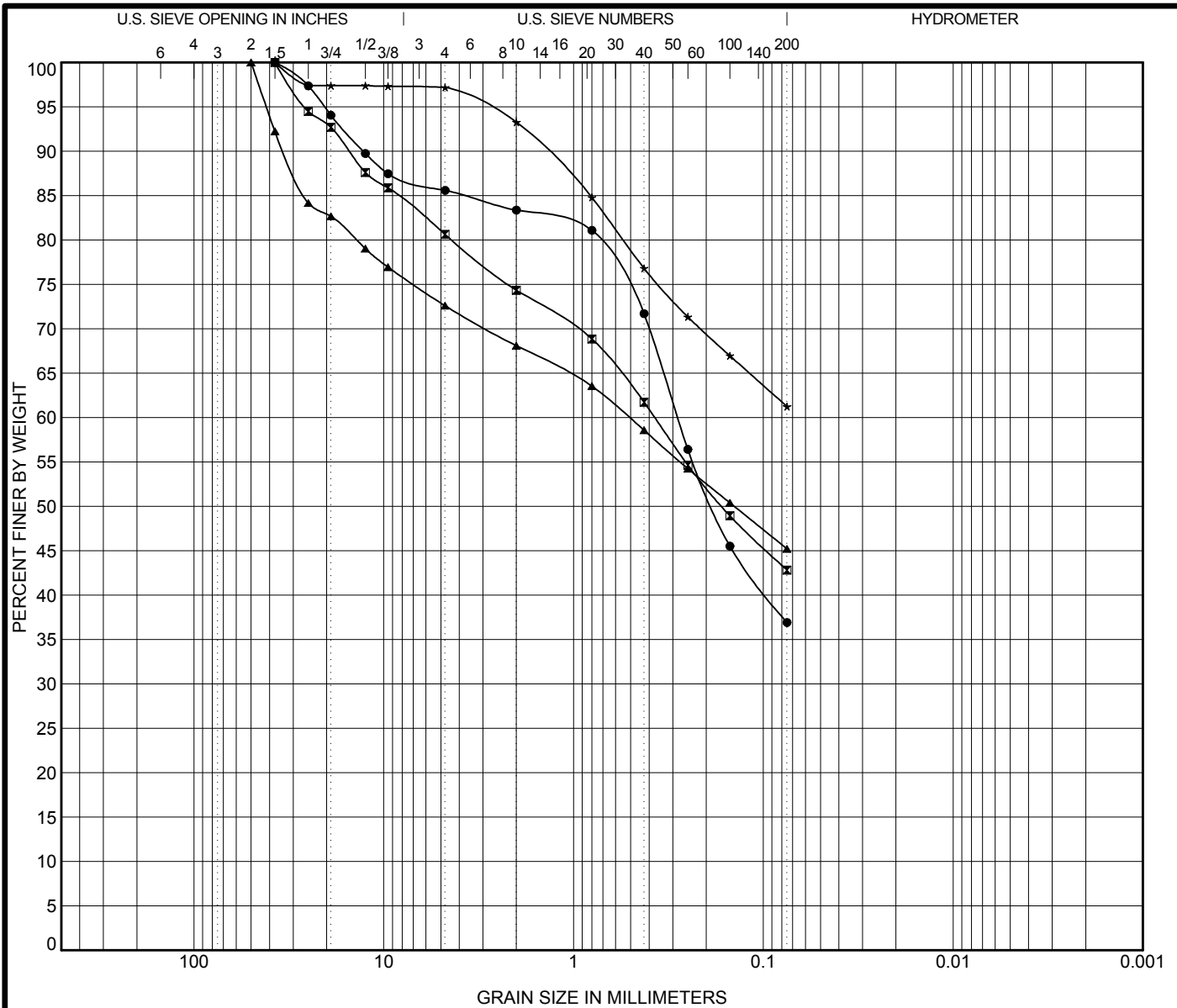


Appendix A: Infiltrometer Test – Grain Size Analysis Laboratory Reports



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample No.	Classification	LL	PL	PI	Cc	Cu
● SI-DR-1						
☒ SI-DR-2						
▲ SI-DR-4						
★ SI-DR-5						

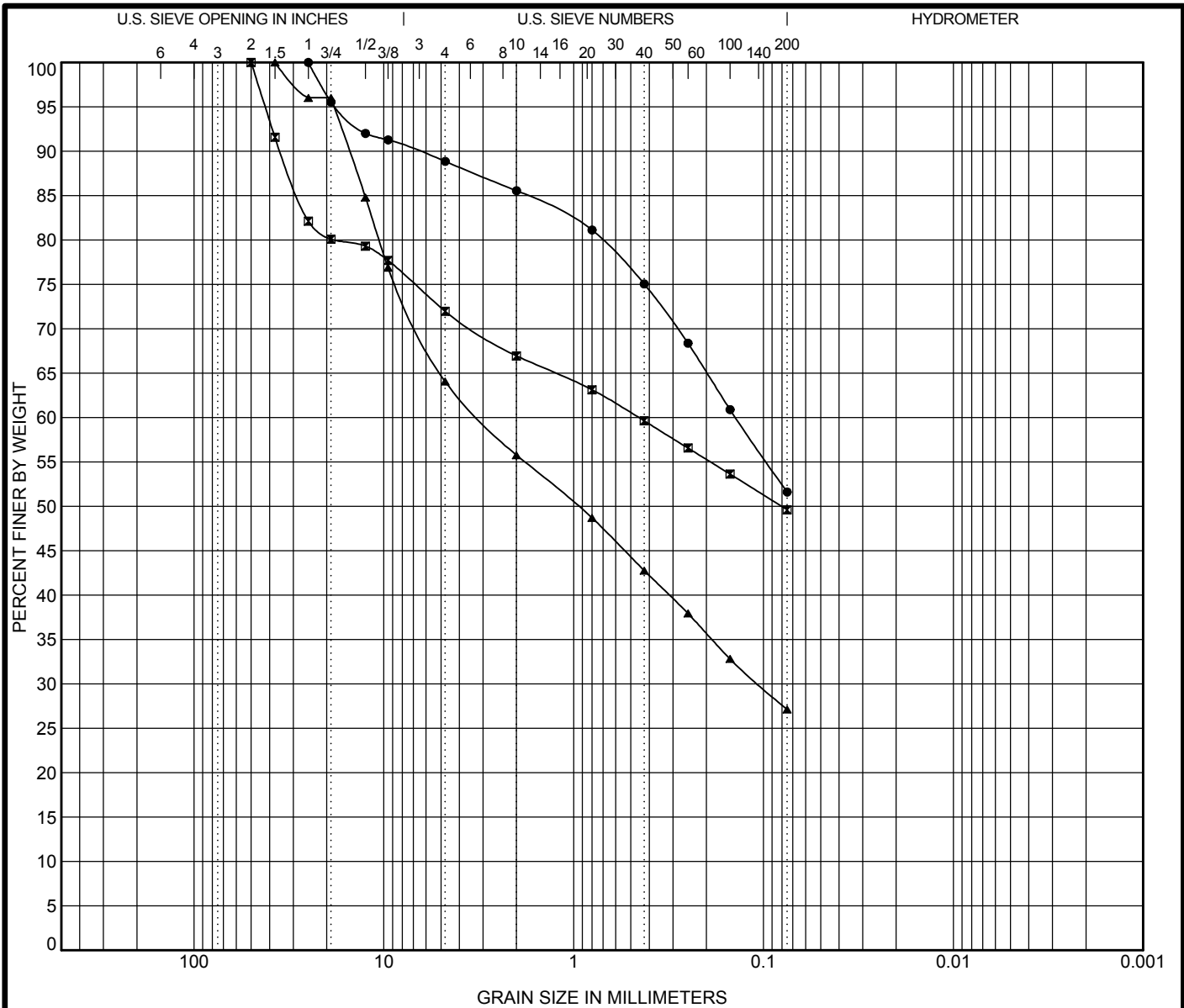
Sample No.	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● SI-DR-1	37.5	0.283			14.4	48.7	36.9	
☒ SI-DR-2	37.5	0.373			19.4	37.8	42.8	
▲ SI-DR-4	50	0.51			27.4	27.4	45.2	
★ SI-DR-5	37.5				2.8	36.0	61.2	


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GRAIN SIZE DISTRIBUTION

Project: Lower Tuscan Aquifer (138604.400)
 Location: Chico, CA
 Number: S9555-06-01

GRAIN SIZE COPY 3 S9555-06-01 LOWER TUSCAN AQUIFER.GPJ US LAB.GDT 3/8/11



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample No.	Classification					LL	PL	PI	Cc	Cu
● SI-DR-3										
☒ SI-DR-6										
▲ SI-DR-8										

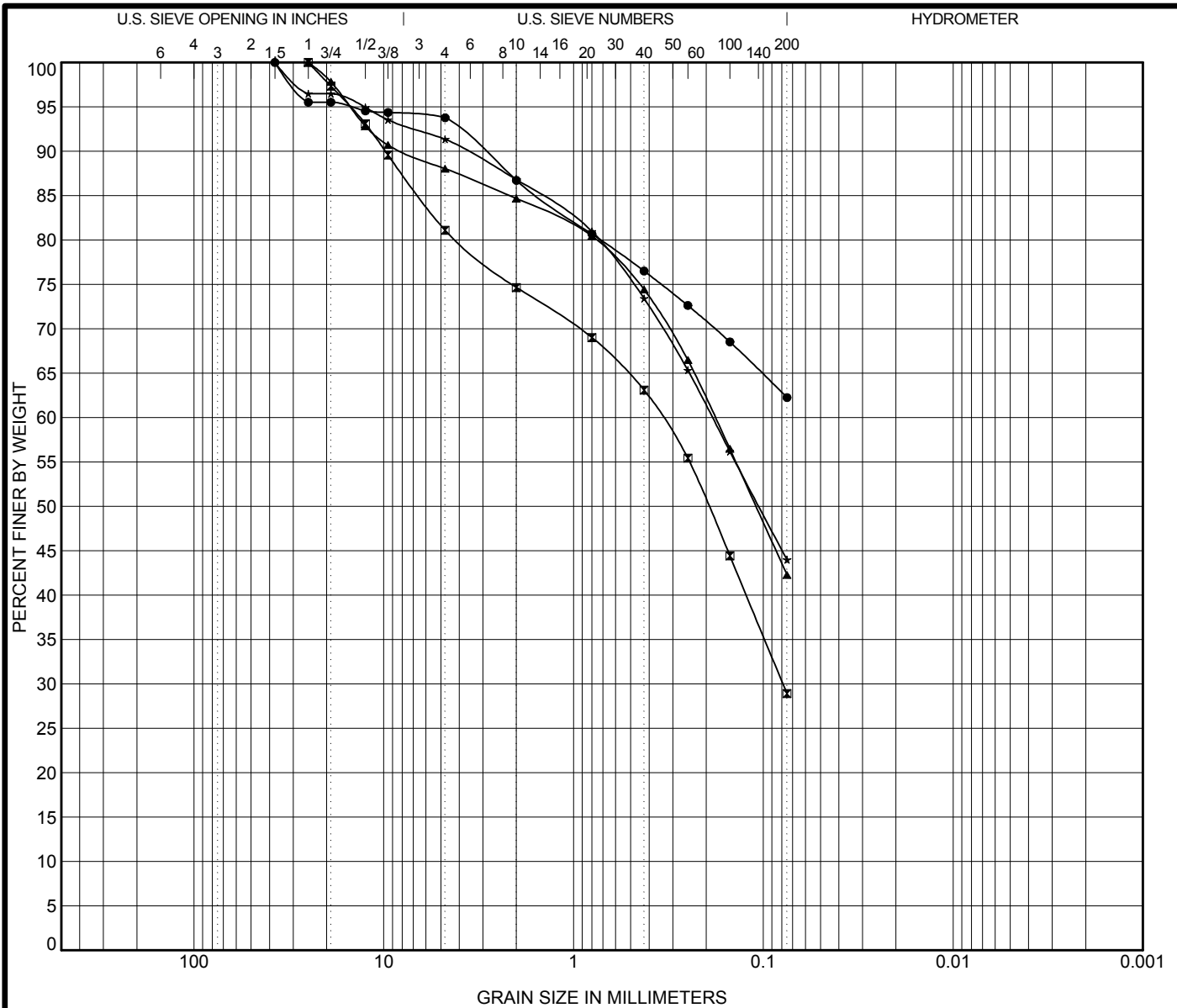
Sample No.	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● SI-DR-3	25	0.14			11.1	37.2	51.6	
☒ SI-DR-6	50	0.455			28.0	22.4	49.6	
▲ SI-DR-8	37.5	3.112	0.107		35.9	36.9	27.1	



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GRAIN SIZE DISTRIBUTION
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 Location: Chico, CA
 Number: S9555-06-01


GRAIN SIZE COPY 3 - S9555-06-01 LOWER TUSCAN AQUIFER.GPJ U.S. LAB.GDT 9/22/11



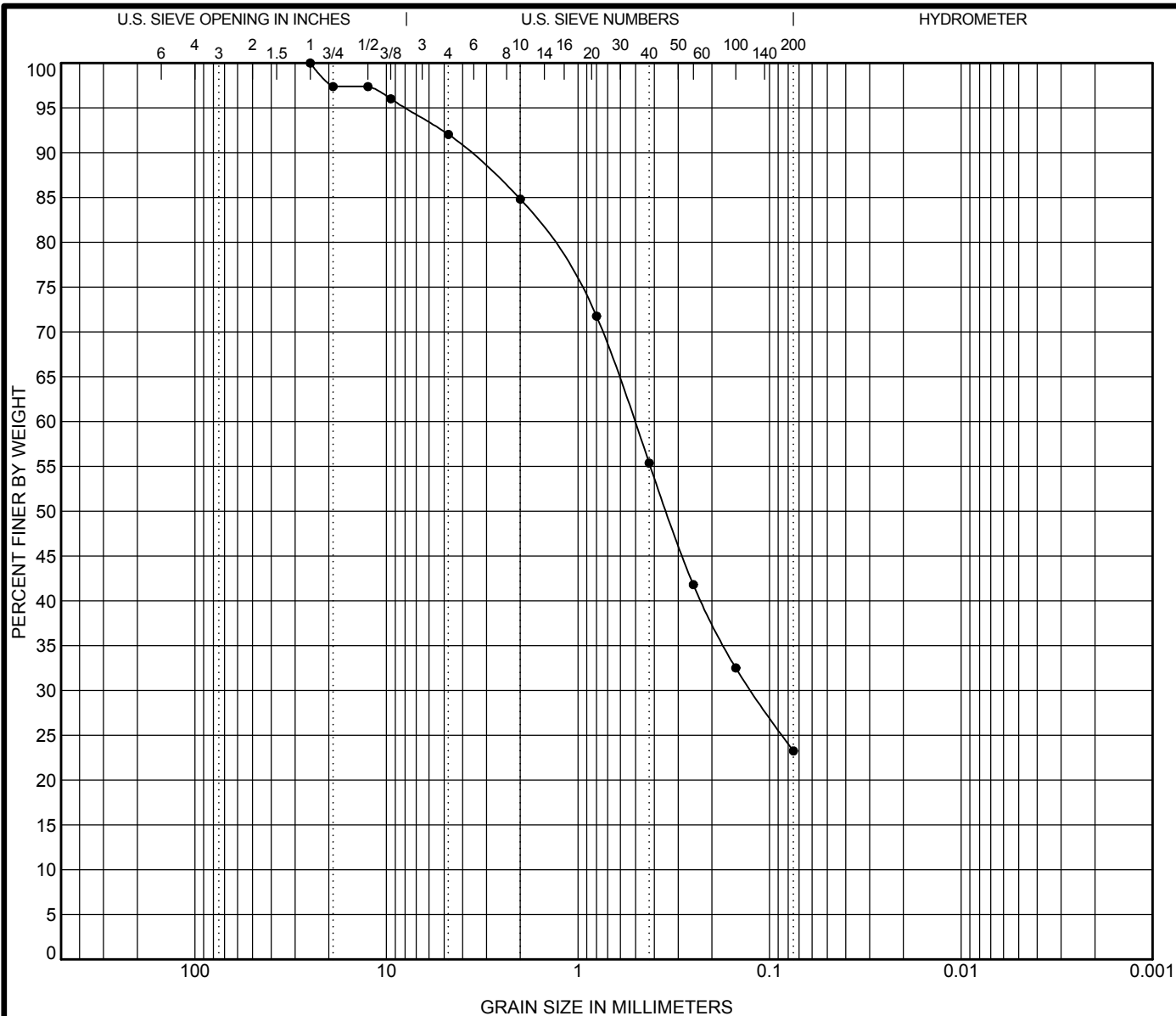
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample No.	Classification	LL	PL	PI	Cc	Cu
● SI-DR-7						
☒ SI-DR-9 NAT						
▲ SI-DR-9 RFC						
★ SI-DR-12						

Sample No.	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● SI-DR-7	37.5				6.2	31.5	62.3	
☒ SI-DR-9 NAT	25	0.343	0.079		18.9	52.2	28.9	
▲ SI-DR-9 RFC	25	0.18			12.0	45.7	42.3	
★ SI-DR-12	37.5	0.186			8.7	47.4	44.0	

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	<p>Project: Lower Tuscan Aquifer (138604.400) Location: Chico, CA Number: S9555-06-01</p>

GRAIN SIZE COPY 3 - S9555-06-01 LOWER TUSCAN AQUIFER.GPJ US LAB.GDT 3/8/11



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample No.	Classification	LL	PL	PI	Cc	Cu
● SI-DR-11						

Sample No.	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● SI-DR-11	25	0.508	0.124		8.0	68.8	23.3	



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GRAIN SIZE DISTRIBUTION

Project: Lower Tuscan Aquifer (138604.400)
 Location: Chico, CA
 Number: S9555-06-01

GRAIN SIZE COPY 3 S9555-06-01 LOWER TUSCAN AQUIFER.GPJ US LAB.GDT 12/29/11

Appendix B: Infiltration Test Field Data

Infiltration Test Forms

Sheet1

Double Ring Infiltration Test

Project: LTA Area _____ Depth of Liquid _____
 Test Location: SI-DR-1 Inner Ring: _____
 Tested by: Chuck Frey Outer Ring _____
 Penetration of rings Inner: _____ Outer: _____

Date	Time (min)	Elapsed time (min)	Depth of Liquid (in)		Volume of Water Added (gal)	
			Inner Ring	Outer ring	Inner Ring	Outer Ring
10/27/10	1327		7.4	7.0	4	12
		2	7.1	6.7		
		4	6.9	6.3		
		6	6.7	6.1		
		8	6.6	5.9		
		10	6.5	5.6		
		11	7.5	7.7	0.5	3
		13	7.3	7.2		
		15	7.2	7.0		
		18	7.0	6.6		
		23	6.7	7.1		
		27	6.6	5.8		
		32	6.4	5.4		
		33	6.3	6.5		2
		38	6.1	6.1		
		39	7.1	7.2	0.5	2
		47	6.9	6.5		
		52	6.7	6.1		
		60	6.4	5.6		
		61	7.4	7.5	0.5	3
		71	7.1	6.7		
		84	6.7	5.8		
		90	6.6	5.4		
		110	6.0	4.2		

Double Ring Infiltration Test

Project: LTA Area _____ Depth of Liquid _____
 Test Location: SI-DR-2 Inner Ring: _____
 Tested by: Chuck Frey Outer Ring _____
 Penetration of rings Inner: _____ Outer: _____

Date	Time (min)	Elapsed time (min)	Depth of Liquid (in)		Volume of Water Added (gal)	
			Inner Ring	Outer ring	Inner Ring	Outer Ring
10/27/10	924		7.8	7.1	4	12
		2	7.4	6.8		
		4	7.1	6.7		
		6	6.8	6.5		
		8	6.6	6.3		
		10	6.4	6.1		
		11	7.3	7.4	0.5	2
		13	7.2	7.2		
		15	7.0	7.0		
		17	6.9	6.9		
		19	6.8	6.8		
		24	6.6	6.5		
		29	6.3	6.2		
		34	6.0	5.9		
		39	5.8	5.7		
		45	5.5	5.4		
		47	7.3	8.0	1	4
		58	7.3	7.4		
		69	6.8	6.8		
		80	6.5	6.4		
		97	5.9	5.8		
		110	5.5	5.4		
		123	5.1	5.0		
		135	4.8	4.7		

Sheet1

Double Ring Infiltration Test

Project: LTA Area _____ Depth of Liquid _____
 Test Location: SI-DR-4 Inner Ring: _____
 Tested by: Chuck Frey Outer Ring _____
 Penetration of rings Inner: _____ Outer: _____

Date	Time (min)	Elapsed time (min)	Depth of Liquid (in)		Volume of Water Added (gal)	
			Inner Ring	Outer ring	Inner Ring	Outer Ring
10/26/10	1025		7.0	6.7	3	12
		2	6.8	6.3		
		4	6.5	5.9		
		6	6.3	5.6		
		8	6.0	5.4		
		10	5.7	5.1		
		11	6.9	6.6	0.5	3
		13	6.6	6.4		
		16	6.4	6.1		
		20	6.0	5.5		
		26	5.5	5.0		
		27	7.3	8.0	1	5
		35	7.1	6.7		
		48	6.0	5.5		
		53	5.5	5.0		
		63	4.8	4.2		
		64	5.6	5.4	0.5	2
		72	5.2	4.8		
		78	4.8	4.4		
		80	6.8	6.7	1	4
		88	6.5	6.1		
		96	5.8	5.4		
		103	5.4	4.9		
		113	4.8	4.4		

Double Ring Infiltration Test

Project: LTA Area _____ Depth of Liquid _____
 Test Location: SI-DR-5 Inner Ring: _____
 Tested by: _____ Outer Ring _____
 Penetration of rings Inner: _____ Outer: _____

Date	Time (min)	Elapsed time (min)	Depth of Liquid (in)		Volume of Water Added (gal)	
			Inner Ring	Outer ring	Inner Ring	Outer Ring
10/26/10	1405		4.3		4	14
	1408	3			2	5
	1410	5	4.6		2	5
	1413	8		2.2		5
	1414	9	5.8		2	
	1416	11		3.4		
	1417	12	6.4		2	
	1419	14		3.7		5
	1420	15	7.7		2	
	1422	17		4.6		5
	1423	18	5.2	5.3		2
	1426	21	7.4	5.5	2	5
	1427	22	6.0	5.5		2
	1430	25	5.0	4.6		
	1431	26	4.3	5.3		4
	1432	27	6.5	4.1	1	
	1433	28	5.8	5.7		3
	1435	30	6.0	5.6	1	4
	1440	35	6.1	5.7	1	4
	1443	38	6.3	6.5	1	5
	1446	41	7.2	7.6	1	5
	1450	45	6.6	6.3	1	4
	1455	50	5.3	4.2		
	1500	55	2.8	1.5		
					22	77

Double Ring Infiltration Test

Project: LTA Area _____ Depth of Liquid _____
 Test Location: STA-SI-DR-7 Inner Ring: _____
 Tested by: Chuck Frey Outer Ring _____
 Penetration of rings Inner: _____ Outer: _____

Date	Time	Elapsed time	Depth of Liquid (in)		Volume of Water Added (gal)	
	(min)		(min)	Inner Ring	Outer ring	Inner Ring
10/25/10	1500		7	5.5	4	12
		2	6.5	6.1		2
		4	6.3	5.7		
		6	6.1	5.3		
		8	5.9	4.9		
		9	6.8	6.1	0.5	2
		12	6.6	5.4		
		17	6.3	4.6		
		18	8.4	7	1	4
		20	8.3	6.7		
		29	7.8	6		
		30	7.8	7.3		2
		35	7.6	7		
		40	7.5	6.6		
		45	7.3	6.1		
		55	6.9	5.5		
		56	6.9	6.8		2
		75	6.5	5.6		
		78	6.5	6.9		2
		90	6.4	6.1		
		100	6.1	5.5		

Sheet1

Double Ring Infiltration Test

Project: LTA Area _____ Depth of Liquid _____
 Test Location: LTA-SI-DR-9 Inner Ring: _____
 Tested by: Chuck Frey Outer Ring _____
 Penetration of rings Inner: _____ Outer: _____

Date	Time (min)	Elapsed time (min)	Depth of Liquid (in)		Volume of Water Added (gal)	
			Inner Ring	Outer ring	Inner Ring	Outer Ring
10/21/10	1015		4.9	5.8	2	10
		2	4.4	5.2		
		4	4.2	5.0		
		6	4.0	4.7		
		7	6.0	5.9	1	2
		8	5.7	5.8		
		10	5.5	5.7		
		12	5.4	5.2		
		15	5.1	5.0		
		17	4.9	4.7		
		19	7.0	7.2	1	4
		21	6.8	7.0		
		25	6.5	6.5		
		29	6.3	6.1		
		33	6.0	5.8		
		38	5.6	5.3		
		42	5.3	5.0		
		46	7.4	7.0	2	4
		50	7.1	6.8		
		56	6.6	6.2		
		63	6.2	5.7		
		72	5.6	5.0		
		73	7.6	7.5	2	4
		82	7.1	6.7		
		86	6.9	6.4		
		92	6.5	6		
		103	5.9	5.3		

Transducer Files

Report Date: 11/4/2010 19:03
Report User Name: tgodwin
Report Computer Name: BUTTE-FIELD

Log File Properties

File Name Test 1_Append_20101027_222137618.wsl
Create Date 10/27/2010 15:21

Device Properties

Device Level TROLL 700
Site LTA-SI-DR-1
Device Name
Serial Number 148876
Firmware Version 2.08
Hardware Version 3

Log Configuration

Log Name	Test 1
Created By	tgodwin
Computer Name	BUTTE-FIELD
Application	WinSitu.exe
Application Version	5.6.8.4
Create Date	10/27/2010 13:25
Notes Size(bytes)	4096
Type	Linear
Overwrite when full	Disabled
Scheduled Start Time	Manual Start
Scheduled Stop Time	No Stop Time
Interval	Days: 0 hrs: 00 mins: 01 secs: 00

Level Reference Settings At Log Creation

Level Measurement Mo Depth
Specific Gravity 0.999

Log Notes:

Date and Time	Note
10/27/2010 13:25	Sensor: 148876 Factory calibration has expired.: 7/23/2010 6:43:46 AM
10/27/2010 13:25	Manual Start Command
10/27/2010 13:38	Log Download - Used Battery: 29% Used Memory: 17% Name: tgodwin
10/27/2010 13:46	Log Download - Used Battery: 29% Used Memory: 17% Name: tgodwin
10/27/2010 13:55	Log Download - Used Battery: 29% Used Memory: 17% Name: tgodwin
10/27/2010 14:02	Log Download - Used Battery: 29% Used Memory: 17% Name: tgodwin
10/27/2010 14:07	Log Download - Used Battery: 29% Used Memory: 17% Name: tgodwin

10/27/2010 14:15 Log Download - Used Battery: 29% Used Memory: 17% Name: tgodwin
 10/27/2010 14:20 Log Download - Used Battery: 29% Used Memory: 17% Name: tgodwin
 10/27/2010 14:39 Log Download - Used Battery: 29% Used Memory: 17% Name: tgodwin
 10/27/2010 14:58 Log Download - Used Battery: 29% Used Memory: 17% Name: tgodwin
 10/27/2010 15:21 Manual Stop Command

Log Data:

Record Count 117

Date and Time	Elapsed Time Seconds	Sensor: Pres 69ft SN#: 148876 Pressure (PSI)	Sensor: Pre SN#: 14887	Sensor: Pre SN#: 14887 Temperatu	Pre SN#: 14887 Depth (ft)
10/27/2010 13:25	0	0.03899	24.00253	0.090027	
10/27/2010 13:26	60	0.037581	23.96469	0.086774	
10/27/2010 13:27	120	0.291833	23.03061	0.673833	
10/27/2010 13:28	180	0.284875	21.01462	0.657767	
10/27/2010 13:29	240	0.282091	19.83719	0.65134	
10/27/2010 13:30	300	0.276687	19.1189	0.638861	
10/27/2010 13:31	360	0.271719	18.64047	0.627391	
10/27/2010 13:32	420	0.270269	18.30911	0.624044	
10/27/2010 13:33	480	0.267906	18.07202	0.618587	
10/27/2010 13:34	540	0.265787	17.90756	0.613694	
10/27/2010 13:35	600	0.261842	17.79468	0.604585	
10/27/2010 13:36	660	0.260944	17.71362	0.602512	
10/27/2010 13:37	720	0.2573	17.65985	0.594099	
10/27/2010 13:38	780	0.292133	17.60886	0.674527	
10/27/2010 13:39	840	0.289286	17.55508	0.667952	
10/27/2010 13:40	900	0.288083	17.52554	0.665175	
10/27/2010 13:41	960	0.28306	17.5184	0.653577	
10/27/2010 13:42	1020	0.281548	17.51553	0.650085	
10/27/2010 13:43	1080	0.279365	17.50937	0.645044	
10/27/2010 13:44	1140	0.276457	17.51602	0.63833	
10/27/2010 13:45	1200	0.27585	17.52554	0.63693	
10/27/2010 13:46	1260	0.272581	17.53079	0.629381	
10/27/2010 13:47	1320	0.271305	17.54886	0.626435	
10/27/2010 13:48	1380	0.269427	17.57028	0.622099	
10/27/2010 13:49	1440	0.268584	17.59125	0.620153	
10/27/2010 13:50	1500	0.26634	17.616	0.614971	
10/27/2010 13:51	1560	0.264837	17.64743	0.611501	
10/27/2010 13:52	1620	0.263991	17.67697	0.609548	
10/27/2010 13:53	1680	0.26241	17.71796	0.605897	
10/27/2010 13:54	1740	0.25999	17.75131	0.600308	
10/27/2010 13:55	1800	0.260715	17.79083	0.601984	
10/27/2010 13:56	1860	0.258049	17.83322	0.595827	
10/27/2010 13:57	1920	0.255507	17.87091	0.589957	
10/27/2010 13:58	1980	0.256114	17.90329	0.591359	

10/27/2010 13:59	2040	0.253752	17.93189	0.585905
10/27/2010 14:00	2100	0.252364	17.96768	0.582701
10/27/2010 14:01	2160	0.251637	17.99432	0.581023
10/27/2010 14:02	2220	0.24867	18.01389	0.57417
10/27/2010 14:03	2280	0.249395	18.03534	0.575846
10/27/2010 14:04	2340	0.246671	18.04916	0.569555
10/27/2010 14:05	2400	0.245216	18.06155	0.566197
10/27/2010 14:06	2460	0.243576	18.07492	0.56241
10/27/2010 14:07	2520	0.281251	18.04916	0.6494
10/27/2010 14:08	2580	0.278323	18.00198	0.64264
10/27/2010 14:09	2640	0.278023	17.97144	0.641946
10/27/2010 14:10	2700	0.275064	17.95712	0.635115
10/27/2010 14:11	2760	0.273664	17.94379	0.631881
10/27/2010 14:12	2820	0.271914	17.94424	0.62784
10/27/2010 14:13	2880	0.270698	17.94098	0.625032
10/27/2010 14:14	2940	0.270819	17.94424	0.625312
10/27/2010 14:15	3000	0.269849	17.94473	0.623073
10/27/2010 14:16	3060	0.269983	17.94714	0.623383
10/27/2010 14:17	3120	0.26865	17.94904	0.620305
10/27/2010 14:18	3180	0.265676	17.95236	0.613439
10/27/2010 14:19	3240	0.265253	17.95477	0.612461
10/27/2010 14:20	3300	0.26477	17.96097	0.611345
10/27/2010 14:21	3360	0.263309	17.96576	0.607973
10/27/2010 14:22	3420	0.262404	17.9686	0.605884
10/27/2010 14:23	3480	0.260279	17.97287	0.600975
10/27/2010 14:24	3540	0.260039	17.9743	0.600423
10/27/2010 14:25	3600	0.25925	17.9772	0.598599
10/27/2010 14:26	3660	0.25561	17.97955	0.590197
10/27/2010 14:27	3720	0.255916	17.9848	0.590901
10/27/2010 14:28	3780	0.289145	17.97192	0.667628
10/27/2010 14:29	3840	0.287996	17.96576	0.664975
10/27/2010 14:30	3900	0.288192	17.97385	0.665426
10/27/2010 14:31	3960	0.288917	17.98816	0.667099
10/27/2010 14:32	4020	0.286793	18.01007	0.662196
10/27/2010 14:33	4080	0.285823	18.02676	0.659956
10/27/2010 14:34	4140	0.283221	18.03436	0.653949
10/27/2010 14:35	4200	0.281462	18.04724	0.649886
10/27/2010 14:36	4260	0.282432	18.05631	0.652126
10/27/2010 14:37	4320	0.281098	18.06918	0.649047
10/27/2010 14:38	4380	0.280264	18.0773	0.647121
10/27/2010 14:39	4440	0.280793	18.08969	0.648343
10/27/2010 14:40	4500	0.27849	18.10306	0.643025
10/27/2010 14:41	4560	0.276182	18.11545	0.637696
10/27/2010 14:42	4620	0.275942	18.12167	0.637141
10/27/2010 14:43	4680	0.274907	18.12927	0.634752
10/27/2010 14:44	4740	0.273589	18.13785	0.631709
10/27/2010 14:45	4800	0.274182	18.14597	0.633078

10/27/2010 14:46	4860	0.271813	18.15503	0.627609
10/27/2010 14:47	4920	0.271523	18.16556	0.626939
10/27/2010 14:48	4980	0.270861	18.17075	0.625409
10/27/2010 14:49	5040	0.268236	18.1741	0.619349
10/27/2010 14:50	5100	0.265813	18.18222	0.613754
10/27/2010 14:51	5160	0.267341	18.18698	0.617281
10/27/2010 14:52	5220	0.265157	18.19415	0.612239
10/27/2010 14:53	5280	0.263036	18.20129	0.607341
10/27/2010 14:54	5340	0.263941	18.20465	0.609431
10/27/2010 14:55	5400	0.263216	18.20895	0.607758
10/27/2010 14:56	5460	0.260784	18.21039	0.602143
10/27/2010 14:57	5520	0.261093	18.20703	0.602856
10/27/2010 14:58	5580	0.259276	18.20322	0.598661
10/27/2010 14:59	5640	0.258724	18.20367	0.597386
10/27/2010 15:00	5700	0.25551	18.19751	0.589965
10/27/2010 15:01	5760	0.255992	18.19559	0.591077
10/27/2010 15:02	5820	0.256601	18.18604	0.592485
10/27/2010 15:03	5880	0.255026	18.18222	0.588847
10/27/2010 15:04	5940	0.25351	18.17123	0.585346
10/27/2010 15:05	6000	0.251873	18.1579	0.581567
10/27/2010 15:06	6060	0.251446	18.14261	0.58058
10/27/2010 15:07	6120	0.248717	18.13022	0.574281
10/27/2010 15:08	6180	0.249018	18.11688	0.574974
10/27/2010 15:09	6240	0.246656	18.10495	0.569522
10/27/2010 15:10	6300	0.247021	18.08777	0.570363
10/27/2010 15:11	6360	0.245745	18.07492	0.567417
10/27/2010 15:12	6420	0.24465	18.05823	0.564889
10/27/2010 15:13	6480	0.242831	18.04153	0.56069
10/27/2010 15:14	6540	0.243862	18.02152	0.56307
10/27/2010 15:15	6600	0.239799	17.99912	0.553687
10/27/2010 15:16	6660	0.240161	17.97528	0.554524
10/27/2010 15:17	6720	0.238283	17.95761	0.550188
10/27/2010 15:18	6780	0.238465	17.93427	0.550609
10/27/2010 15:19	6840	0.235979	17.9195	0.544868
10/27/2010 15:20	6900	0.23756	17.90662	0.548519
10/27/2010 15:21	6960	0.233065	17.89331	0.538139

s 69ft
'6

Report Date: 11/4/2010 19:03
Report User Name: tgodwin
Report Computer Na BUTTE-FIELD

Log File Properties

File Name Test 1_Append_20101027_183934619.wsl
Create Date 10/27/2010 11:39

Device Properties

Device Level TROLL 700
Site LTA-SI-DR-2
Device Name
Serial Number 148876
Firmware Version 2.08
Hardware Version 3

Log Configuration

Log Name Test 1
Created By tgodwin
Computer Name BUTTE-FIELD
Application WinSitu.exe
Application Version 5.6.8.4
Create Date 10/27/2010 9:20
Notes Size(bytes) 4096
Type Linear
Overwrite when full Disabled
Scheduled Start Time Manual Start
Scheduled Stop Time No Stop Time
Interval Days: 0 hrs: 00 mins: 01 secs: 00

Level Reference Settings At Log Creation

Level Measurem Depth
Specific Gravi 0.999

Log Notes:

Date and Time	Note
10/27/2010 9:20	Sensor: 148876 Factory calibration has expired.: 7/23/2010 6:43:46 AM
10/27/2010 9:20	Manual Start Command
10/27/2010 9:35	Log Download - Used Battery: 29% Used Memory: 15% Name: tgodwin
10/27/2010 9:40	Log Download - Used Battery: 29% Used Memory: 15% Name: tgodwin
10/27/2010 9:48	Log Download - Used Battery: 29% Used Memory: 15% Name: tgodwin
10/27/2010 9:54	Log Download - Used Battery: 29% Used Memory: 15% Name: tgodwin
10/27/2010 10:03	Log Download - Used Battery: 29% Used Memory: 15% Name: tgodwin

10/27/2010 10:11 Log Download - Used Battery: 29% Used Memory: 15% Name: tgodwin
 10/27/2010 10:23 Log Download - Used Battery: 29% Used Memory: 15% Name: tgodwin
 10/27/2010 10:33 Log Download - Used Battery: 29% Used Memory: 15% Name: tgodwin
 10/27/2010 10:40 Log Download - Used Battery: 29% Used Memory: 15% Name: tgodwin
 10/27/2010 10:44 Log Download - Used Battery: 29% Used Memory: 15% Name: tgodwin
 10/27/2010 11:01 Log Download - Used Battery: 29% Used Memory: 15% Name: tgodwin
 10/27/2010 11:15 Log Download - Used Battery: 29% Used Memory: 15% Name: tgodwin
 10/27/2010 11:27 Log Download - Used Battery: 29% Used Memory: 15% Name: tgodwin
 10/27/2010 11:39 Manual Stop Command

Log Data:

Record Count 139

Date and Time	Elapsed Time Seconds	Sensor: Pres 69ft	Sensor: Pres 69ft	Sensor: Pres 69ft
		SN#: 148876 Pressure (PSI)	SN#: 148876 Temperature (C)	SN#: 148876 Depth (ft)
10/27/2010 9:20	0	0.042442	10.505493	0.097998
10/27/2010 9:21	60	0.041727	10.475159	0.096347
10/27/2010 9:22	120	0.04268	10.451813	0.098546
10/27/2010 9:23	180	0.1919	11.027802	0.443092
10/27/2010 9:24	240	0.306333	12.210114	0.707312
10/27/2010 9:25	300	0.298452	12.888885	0.689117
10/27/2010 9:26	360	0.293345	13.278137	0.677326
10/27/2010 9:27	420	0.288053	13.528931	0.665104
10/27/2010 9:28	480	0.281741	13.700317	0.650532
10/27/2010 9:29	540	0.278979	13.814301	0.644155
10/27/2010 9:30	600	0.273448	13.894836	0.631383
10/27/2010 9:31	660	0.269057	13.947174	0.621245
10/27/2010 9:32	720	0.265995	13.980652	0.614174
10/27/2010 9:33	780	0.261729	13.998077	0.604325
10/27/2010 9:34	840	0.261564	14.001862	0.603944
10/27/2010 9:35	900	0.293042	14.023071	0.676625
10/27/2010 9:36	960	0.291532	14.059814	0.673137
10/27/2010 9:37	1020	0.288053	14.089996	0.665104
10/27/2010 9:38	1080	0.285648	14.111206	0.659553
10/27/2010 9:39	1140	0.283185	14.114502	0.653865
10/27/2010 9:40	1200	0.280898	14.11496	0.648585
10/27/2010 9:41	1260	0.277893	14.09848	0.641647
10/27/2010 9:42	1320	0.277958	14.079132	0.641796
10/27/2010 9:43	1380	0.274713	14.059357	0.634303
10/27/2010 9:44	1440	0.272678	14.036713	0.629606
10/27/2010 9:45	1500	0.269194	14.014587	0.62156
10/27/2010 9:46	1560	0.268594	13.996643	0.620175
10/27/2010 9:47	1620	0.266305	13.977814	0.61489
10/27/2010 9:48	1680	0.26302	13.956146	0.607304
10/27/2010 9:49	1740	0.261202	13.942474	0.603107

10/27/2010 9:50	1800	0.259834	13.935394	0.599949
10/27/2010 9:51	1860	0.257915	13.932556	0.595517
10/27/2010 9:52	1920	0.256232	13.925049	0.591632
10/27/2010 9:53	1980	0.253107	13.91748	0.584416
10/27/2010 9:54	2040	0.252144	13.914215	0.582192
10/27/2010 9:55	2100	0.249564	13.904297	0.576236
10/27/2010 9:56	2160	0.248786	13.898621	0.574439
10/27/2010 9:57	2220	0.247217	13.892487	0.570817
10/27/2010 9:58	2280	0.244334	13.889648	0.56416
10/27/2010 9:59	2340	0.242832	13.886383	0.560692
10/27/2010 10:00	2400	0.241569	13.890137	0.557774
10/27/2010 10:01	2460	0.242111	13.895325	0.559027
10/27/2010 10:02	2520	0.239527	13.899597	0.55306
10/27/2010 10:03	2580	0.236581	13.903809	0.546258
10/27/2010 10:04	2640	0.234422	13.908569	0.541273
10/27/2010 10:05	2700	0.233582	13.912292	0.539335
10/27/2010 10:06	2760	0.230339	13.913727	0.531846
10/27/2010 10:07	2820	0.231055	13.9151	0.533499
10/27/2010 10:08	2880	0.229255	13.917023	0.529342
10/27/2010 10:09	2940	0.226852	13.921265	0.523795
10/27/2010 10:10	3000	0.295861	13.958954	0.683134
10/27/2010 10:11	3060	0.295496	14.041901	0.682291
10/27/2010 10:12	3120	0.295855	14.115448	0.683119
10/27/2010 10:13	3180	0.294766	14.165436	0.680607
10/27/2010 10:14	3240	0.295671	14.205048	0.682694
10/27/2010 10:15	3300	0.294235	14.226288	0.67938
10/27/2010 10:16	3360	0.293994	14.241333	0.678823
10/27/2010 10:17	3420	0.293447	14.255524	0.677561
10/27/2010 10:18	3480	0.293206	14.267303	0.677004
10/27/2010 10:19	3540	0.29201	14.274353	0.674243
10/27/2010 10:20	3600	0.291162	14.283783	0.672283
10/27/2010 10:21	3660	0.290022	14.288055	0.669652
10/27/2010 10:22	3720	0.290565	14.290863	0.670905
10/27/2010 10:23	3780	0.287566	14.300323	0.663981
10/27/2010 10:24	3840	0.287312	14.305969	0.663393
10/27/2010 10:25	3900	0.286652	14.309753	0.66187
10/27/2010 10:26	3960	0.283527	14.316833	0.654656
10/27/2010 10:27	4020	0.282689	14.322479	0.65272
10/27/2010 10:28	4080	0.280822	14.330505	0.648409
10/27/2010 10:29	4140	0.280096	14.336151	0.646733
10/27/2010 10:30	4200	0.278353	14.346527	0.642708
10/27/2010 10:31	4260	0.278175	14.351746	0.642298
10/27/2010 10:32	4320	0.275831	14.360229	0.636886
10/27/2010 10:33	4380	0.27589	14.371063	0.637022
10/27/2010 10:34	4440	0.273126	14.378632	0.630639
10/27/2010 10:35	4500	0.272824	14.389923	0.629943
10/27/2010 10:36	4560	0.272163	14.398438	0.628417

10/27/2010 10:37	4620	0.270476	14.404602	0.624521
10/27/2010 10:38	4680	0.269039	14.413574	0.621203
10/27/2010 10:39	4740	0.268255	14.425812	0.619393
10/27/2010 10:40	4800	0.265069	14.431946	0.612036
10/27/2010 10:41	4860	0.265069	14.438538	0.612036
10/27/2010 10:42	4920	0.262185	14.444214	0.605377
10/27/2010 10:43	4980	0.26176	14.448914	0.604395
10/27/2010 10:44	5040.002	0.260137	14.457428	0.600647
10/27/2010 10:45	5100	0.258442	14.464508	0.596734
10/27/2010 10:46	5160	0.256755	14.476288	0.592839
10/27/2010 10:47	5220	0.254888	14.48526	0.588528
10/27/2010 10:48	5280	0.255493	14.499908	0.589926
10/27/2010 10:49	5340	0.253628	14.517822	0.585619
10/27/2010 10:50	5400	0.254348	14.533875	0.587281
10/27/2010 10:51	5460	0.251463	14.551819	0.58062
10/27/2010 10:52	5520	0.250257	14.568817	0.577837
10/27/2010 10:53	5580	0.248382	14.587219	0.573505
10/27/2010 10:54	5640	0.249116	14.607056	0.575201
10/27/2010 10:55	5700	0.24826	14.626404	0.573224
10/27/2010 10:56	5760	0.243387	14.64389	0.561974
10/27/2010 10:57	5820	0.244893	14.668427	0.565451
10/27/2010 10:58	5880	0.243985	14.693451	0.563354
10/27/2010 10:59	5940	0.242729	14.714722	0.560454
10/27/2010 11:00	6000	0.241933	14.742554	0.558616
10/27/2010 11:01	6060	0.239961	14.769043	0.554062
10/27/2010 11:02	6120	0.239945	14.793121	0.554026
10/27/2010 11:03	6180	0.236937	14.815338	0.547079
10/27/2010 11:04	6240	0.236397	14.83847	0.545833
10/27/2010 11:05	6300	0.23489	14.863037	0.542354
10/27/2010 11:06	6360	0.233567	14.88855	0.5393
10/27/2010 11:07	6420	0.234875	14.910767	0.542318
10/27/2010 11:08	6480	0.230319	14.929657	0.531799
10/27/2010 11:09	6540	0.232227	14.950439	0.536206
10/27/2010 11:10	6600	0.230182	14.967926	0.531482
10/27/2010 11:11	6660	0.229038	14.988739	0.528842
10/27/2010 11:12	6720	0.228495	15.01474	0.527587
10/27/2010 11:13	6780	0.227411	15.036011	0.525086
10/27/2010 11:14	6840	0.225287	15.051117	0.520182
10/27/2010 11:15	6900	0.224927	15.075256	0.519349
10/27/2010 11:16	6960	0.222821	15.102661	0.514487
10/27/2010 11:17	7020	0.222682	15.132446	0.514166
10/27/2010 11:18	7080	0.220937	15.161285	0.510136
10/27/2010 11:19	7140	0.221478	15.189636	0.511385
10/27/2010 11:20	7200	0.219435	15.213318	0.506668
10/27/2010 11:21	7260	0.218527	15.232697	0.504572
10/27/2010 11:22	7320	0.216304	15.249725	0.499439
10/27/2010 11:23	7380	0.216426	15.269135	0.499721

10/27/2010 11:24	7440	0.215436	15.289001	0.497435
10/27/2010 11:25	7500	0.212255	15.31076	0.490089
10/27/2010 11:26	7560	0.213334	15.333923	0.492582
10/27/2010 11:27	7620	0.211204	15.356628	0.487662
10/27/2010 11:28	7680	0.211347	15.387878	0.487993
10/27/2010 11:29	7740	0.211628	15.429504	0.488642
10/27/2010 11:30	7800	0.207654	15.465942	0.479467
10/27/2010 11:31	7860	0.208499	15.503815	0.481418
10/27/2010 11:32	7920	0.206509	15.540253	0.476822
10/27/2010 11:33	7980	0.203622	15.566772	0.470157
10/27/2010 11:34	8040	0.205528	15.606506	0.474558
10/27/2010 11:35	8100	0.204021	15.641571	0.471077
10/27/2010 11:36	8160	0.202752	15.677063	0.468148
10/27/2010 11:37	8220	0.202936	15.715912	0.468573
10/27/2010 11:38	8280	0.200829	15.755249	0.463707

Report Date: 8/5/2011 12:43
Report User Name: cfrey
Report Computer Name: SAC-CFREY
Application: WinSitu.exe
Application Version: 5.6.17.7

Log File Properties

File Name LTA-SI-DR-3_Append_2011-08-05_12-43-13-031.wsl
Create Date 8/5/2011 12:43

Device Properties

Device Level TROLL 700
Site Williams Rd
Device Name
Serial Number 149638
Firmware Version 2.08
Hardware Version 3
Device Address 1
Device Comm Cfg 19200 8 Even 1

Log Configuration

Log Name LTA-SI-DR-3
Created By cfrey
Computer Name SAC-CFREY
Application WinSitu.exe
Application Version 5.6.17.7
Create Date 8/5/2011 10:08 Pacific Daylight Time
Log Setup Time Zone Pacific Daylight Time
Notes Size(bytes) 4096
Overwrite when full Disabled
Scheduled Start Time Manual Start Pacific Daylight Time
Scheduled Stop Time No Stop Time Pacific Daylight Time
Type Linear
Interval Days: 0 hrs: 00 mins: 01 secs: 00

Level Reference Settings At Log Creation

Level Measurement Mo Depth
Specific Gravity 0.999

Other Log Settings

Depth of Probe: 0.0678878 (ft)
Head Pressure: 0.0294018 (PSI)
Temperature: 24.4743 (C)

Log Notes:

Date and Time	Note
8/5/2011 10:08	Sensor: 149638 Factory calibration has expired.: 8/12/2010 11:27:14 AM
8/5/2011 10:08	Used Battery: 22% Used Memory: 7% User Name: cfrey
8/5/2011 10:08	Manual Start Command
8/5/2011 10:21	Log Download - Used Battery: 22% Used Memory: 7% User Name: cfrey
8/5/2011 10:27	Log Download - Used Battery: 22% Used Memory: 7% User Name: cfrey
8/5/2011 10:38	Log Download - Used Battery: 22% Used Memory: 7% User Name: cfrey
8/5/2011 10:52	Log Download - Used Battery: 22% Used Memory: 7% User Name: cfrey
8/5/2011 11:06	Log Download - Used Battery: 22% Used Memory: 7% User Name: cfrey
8/5/2011 11:06	Log Download - Used Battery: 22% Used Memory: 7% User Name: cfrey
8/5/2011 11:37	Log Download - Used Battery: 22% Used Memory: 7% User Name: cfrey
8/5/2011 12:03	Log Download - Used Battery: 22% Used Memory: 7% User Name: cfrey
8/5/2011 12:11	Log Download - Used Battery: 22% Used Memory: 7% User Name: cfrey
8/5/2011 12:28	Log Download - Used Battery: 22% Used Memory: 7% User Name: cfrey
8/5/2011 12:42	Used Battery: 22% Used Memory: 7% User Name: cfrey
8/5/2011 12:42	Manual Stop Command

Log Data:

Record Count 155

Sensors 1

1 149638 Pressure/Temp 30 PSIG (21m/69ft)

Time Zone: Pacific Daylight Time

Date and Time	Elapsed Time Seconds	Sensor: Pres(G) 69ft	Sensor: Pres(G) 69ft	Sensor: Pres(G) 69ft
		SN#: 149638 Pressure (PSI)	SN#: 149638 Temperature (C)	SN#: 149638 Depth (ft)
8/5/2011 10:08	0	0.036	24.439	0.084
8/5/2011 10:09	60	0.032	24.775	0.073
8/5/2011 10:10	120	0.031	25.351	0.072
8/5/2011 10:11	180	0.031	25.479	0.072
8/5/2011 10:12	240	0.294	25.394	0.679
8/5/2011 10:13	300	0.349	24.2	0.807
8/5/2011 10:14	360	0.346	23.422	0.798
8/5/2011 10:15	420	0.34	22.938	0.785
8/5/2011 10:16	480	0.337	22.618	0.779
8/5/2011 10:17	540	0.334	22.401	0.77
8/5/2011 10:18	600	0.332	22.25	0.767
8/5/2011 10:19	660	0.33	22.147	0.761
8/5/2011 10:20	720	0.329	22.086	0.759
8/5/2011 10:21	780	0.327	22.044	0.754

8/5/2011 10:22	840	0.325	22.018	0.75
8/5/2011 10:23	900	0.342	22.013	0.79
8/5/2011 10:24	960	0.342	22.036	0.79
8/5/2011 10:25	1020	0.339	22.077	0.782
8/5/2011 10:26	1080	0.336	22.116	0.777
8/5/2011 10:27	1140	0.335	22.152	0.773
8/5/2011 10:28	1200	0.332	22.18	0.765
8/5/2011 10:29	1260	0.332	22.205	0.766
8/5/2011 10:30	1320	0.33	22.224	0.762
8/5/2011 10:31	1380	0.329	22.249	0.759
8/5/2011 10:32	1440	0.327	22.273	0.754
8/5/2011 10:33	1500	0.325	22.299	0.75
8/5/2011 10:34	1560	0.324	22.322	0.747
8/5/2011 10:35	1620	0.32	22.354	0.739
8/5/2011 10:36	1680	0.319	22.382	0.736
8/5/2011 10:37	1740	0.319	22.419	0.737
8/5/2011 10:38	1800	0.317	22.452	0.733
8/5/2011 10:39	1860	0.318	22.5	0.734
8/5/2011 10:40	1920	0.317	22.538	0.732
8/5/2011 10:41	1980	0.317	22.576	0.732
8/5/2011 10:42	2040	0.317	22.611	0.732
8/5/2011 10:43	2100	0.315	22.648	0.728
8/5/2011 10:44	2160	0.316	22.689	0.73
8/5/2011 10:45	2220	0.315	22.732	0.727
8/5/2011 10:46	2280	0.314	22.771	0.725
8/5/2011 10:47	2340	0.314	22.815	0.726
8/5/2011 10:48	2400	0.312	22.854	0.72
8/5/2011 10:49	2460	0.31	22.901	0.717
8/5/2011 10:50	2520	0.31	22.952	0.716
8/5/2011 10:51	2580	0.345	23.049	0.796
8/5/2011 10:52	2640	0.345	23.212	0.797
8/5/2011 10:53	2700	0.345	23.342	0.796
8/5/2011 10:54	2760	0.342	23.433	0.79
8/5/2011 10:55	2820	0.342	23.503	0.79
8/5/2011 10:56	2880	0.342	23.552	0.79
8/5/2011 10:57	2940	0.342	23.594	0.791
8/5/2011 10:58	3000	0.34	23.629	0.786
8/5/2011 10:59	3060	0.34	23.661	0.785
8/5/2011 11:00	3120	0.339	23.689	0.784
8/5/2011 11:01	3180	0.339	23.717	0.782
8/5/2011 11:02	3240	0.336	23.744	0.776
8/5/2011 11:03	3300	0.336	23.771	0.775
8/5/2011 11:04	3360	0.335	23.797	0.774
8/5/2011 11:05	3420	0.333	23.825	0.77
8/5/2011 11:06	3480	0.332	23.86	0.766
8/5/2011 11:07	3540	0.33	23.893	0.763
8/5/2011 11:08	3600	0.33	23.925	0.761

8/5/2011 11:09	3660	0.329	23.957	0.76
8/5/2011 11:10	3720	0.328	23.995	0.757
8/5/2011 11:11	3780	0.328	24.034	0.756
8/5/2011 11:12	3840	0.326	24.075	0.753
8/5/2011 11:13	3900	0.326	24.123	0.752
8/5/2011 11:14	3960	0.325	24.172	0.751
8/5/2011 11:15	4020	0.326	24.214	0.752
8/5/2011 11:16	4080	0.326	24.259	0.753
8/5/2011 11:17	4140	0.325	24.303	0.751
8/5/2011 11:18	4200	0.324	24.348	0.748
8/5/2011 11:19	4260	0.323	24.39	0.746
8/5/2011 11:20	4320	0.322	24.438	0.744
8/5/2011 11:21	4380	0.324	24.486	0.748
8/5/2011 11:22	4440	0.321	24.535	0.741
8/5/2011 11:23	4500	0.32	24.583	0.738
8/5/2011 11:24	4560	0.321	24.632	0.74
8/5/2011 11:25	4620	0.318	24.682	0.734
8/5/2011 11:26	4680	0.318	24.733	0.734
8/5/2011 11:27	4740	0.317	24.783	0.731
8/5/2011 11:28	4800	0.317	24.834	0.731
8/5/2011 11:29	4860	0.314	24.89	0.725
8/5/2011 11:30	4920	0.313	24.943	0.723
8/5/2011 11:31	4980	0.313	25	0.722
8/5/2011 11:32	5040	0.312	25.055	0.72
8/5/2011 11:33	5100	0.311	25.109	0.718
8/5/2011 11:34	5160	0.311	25.167	0.718
8/5/2011 11:35	5220	0.308	25.226	0.712
8/5/2011 11:36	5280	0.324	25.314	0.749
8/5/2011 11:37	5340	0.324	25.445	0.748
8/5/2011 11:38	5400	0.324	25.513	0.747
8/5/2011 11:39	5460	0.323	25.555	0.746
8/5/2011 11:40	5520	0.326	25.601	0.752
8/5/2011 11:41	5580	0.325	25.633	0.751
8/5/2011 11:42	5640	0.325	25.664	0.75
8/5/2011 11:43	5700	0.324	25.7	0.749
8/5/2011 11:44	5760	0.325	25.734	0.75
8/5/2011 11:45	5820	0.325	25.769	0.751
8/5/2011 11:46	5880	0.324	25.803	0.749
8/5/2011 11:47	5940	0.323	25.836	0.746
8/5/2011 11:48	6000	0.321	25.877	0.741
8/5/2011 11:49	6060	0.323	25.915	0.745
8/5/2011 11:50	6120	0.322	25.955	0.743
8/5/2011 11:51	6180	0.321	25.997	0.741
8/5/2011 11:52	6240	0.319	26.039	0.737
8/5/2011 11:53	6300	0.317	26.082	0.731
8/5/2011 11:54	6360	0.316	26.13	0.729
8/5/2011 11:55	6420	0.317	26.175	0.732

8/5/2011 11:56	6480	0.315	26.223	0.727
8/5/2011 11:57	6540	0.314	26.275	0.726
8/5/2011 11:58	6600	0.314	26.328	0.725
8/5/2011 11:59	6660	0.312	26.375	0.72
8/5/2011 12:00	6720	0.311	26.427	0.717
8/5/2011 12:01	6780	0.309	26.479	0.714
8/5/2011 12:02	6840	0.31	26.538	0.716
8/5/2011 12:03	6900	0.312	26.579	0.72
8/5/2011 12:04	6960	0.313	26.623	0.723
8/5/2011 12:05	7020	0.313	26.655	0.723
8/5/2011 12:06	7080	0.314	26.691	0.725
8/5/2011 12:07	7140	0.316	26.725	0.729
8/5/2011 12:08	7200	0.316	26.757	0.729
8/5/2011 12:09	7260	0.316	26.795	0.729
8/5/2011 12:10	7320	0.316	26.831	0.729
8/5/2011 12:11	7380	0.316	26.865	0.729
8/5/2011 12:12	7440	0.317	26.906	0.731
8/5/2011 12:13	7500	0.316	26.946	0.729
8/5/2011 12:14	7560	0.314	26.984	0.725
8/5/2011 12:15	7620	0.313	27.023	0.723
8/5/2011 12:16	7680	0.314	27.064	0.725
8/5/2011 12:17	7740	0.314	27.114	0.724
8/5/2011 12:18	7800	0.313	27.157	0.724
8/5/2011 12:19	7860	0.313	27.211	0.724
8/5/2011 12:20	7920	0.31	27.26	0.717
8/5/2011 12:21	7980	0.311	27.315	0.719
8/5/2011 12:22	8040	0.309	27.371	0.714
8/5/2011 12:23	8100	0.308	27.425	0.71
8/5/2011 12:24	8160	0.307	27.482	0.709
8/5/2011 12:25	8220	0.305	27.538	0.703
8/5/2011 12:26	8280	0.304	27.599	0.702
8/5/2011 12:27	8340	0.304	27.654	0.702
8/5/2011 12:28	8400	0.302	27.718	0.696
8/5/2011 12:29	8460	0.302	27.78	0.697
8/5/2011 12:30	8520	0.3	27.841	0.693
8/5/2011 12:31	8580	0.298	27.9	0.689
8/5/2011 12:32	8640	0.297	27.96	0.687
8/5/2011 12:33	8700	0.296	28.021	0.684
8/5/2011 12:34	8760	0.295	28.08	0.681
8/5/2011 12:35	8820	0.292	28.142	0.675
8/5/2011 12:36	8880	0.291	28.204	0.673
8/5/2011 12:37	8940	0.29	28.268	0.671
8/5/2011 12:38	9000	0.288	28.332	0.666
8/5/2011 12:39	9060	0.285	28.388	0.658
8/5/2011 12:40	9120	0.287	28.451	0.663
8/5/2011 12:41	9180	0.284	28.512	0.655
8/5/2011 12:42	9240	0.024	28.449	0.056

Report Date: 11/4/2010 19:03
Report User Name: tgodwin
Report Computer Name BUTTE-FIELD

Log File Properties

File Name Test 1_Append_20101026_191913784.wsl
Create Date 10/26/2010 12:19

Device Properties

Device Level TROLL 700
Site LTA-SI-DR-4
Device Name
Serial Number 148876
Firmware Version 2.08
Hardware Version 3

Log Configuration

Log Name Test 1
Created By tgodwin
Computer Name BUTTE-FIELD
Application WinSitu.exe
Application Version 5.6.8.4
Create Date 10/26/2010 10:17
Notes Size(bytes) 4096
Type Linear
Overwrite when full Disabled
Scheduled Start Time Manual Start
Scheduled Stop Time No Stop Time
Interval Days: 0 hrs: 00 mins: 01 secs: 00

Level Reference Settings At Log Creation

Level Measurement Mod Depth
Specific Gravity 0.999

Log Notes:

Date and Time	Note
10/26/2010 10:16	Sensor: 148876 Factory calibration has expired.: 7/23/2010 6:43:46 AM
10/26/2010 10:20	Manual Start Command
10/26/2010 10:34	Log Download - Used Battery: 29% Used Memory: 10% Name: tgodwin
10/26/2010 10:40	Log Download - Used Battery: 29% Used Memory: 10% Name: tgodwin
10/26/2010 10:53	Log Download - Used Battery: 29% Used Memory: 10% Name: tgodwin
10/26/2010 11:03	Log Download - Used Battery: 29% Used Memory: 10% Name: tgodwin
10/26/2010 11:19	Log Download - Used Battery: 29% Used Memory: 10% Name: tgodwin

10/26/2010 11:27 Log Download - Used Battery: 29% Used Memory: 10% Name: tgodwin
 10/26/2010 11:38 Log Download - Used Battery: 29% Used Memory: 10% Name: tgodwin
 10/26/2010 11:53 Log Download - Used Battery: 29% Used Memory: 10% Name: tgodwin
 10/26/2010 12:00 Log Download - Used Battery: 29% Used Memory: 10% Name: tgodwin
 10/26/2010 12:18 Manual Stop Command

Log Data:

Record Count 118

Date and Time	Elapsed Time Seconds	Sensor: Pres 69ft	Sensor: Pres 69ft	Sensor: Pres 69ft
		SN#: 148876	SN#: 148876	SN#: 148876
		Pressure (PSI)	Temperature (C)	Depth (ft)
10/26/2010 10:20	0	0.043595	15.403961	0.10066
10/26/2010 10:21	60.001	0.041128	15.45459	0.094964
10/26/2010 10:22	120.001	0.043836	15.516571	0.101215
10/26/2010 10:23	180.001	0.047766	15.571503	0.11029
10/26/2010 10:24	240.001	0.069227	15.591858	0.159844
10/26/2010 10:25	300.001	0.263569	15.55777	0.608572
10/26/2010 10:26	360.001	0.258332	15.521301	0.596481
10/26/2010 10:27	420.001	0.255676	15.496246	0.590349
10/26/2010 10:28	480.001	0.251816	15.477295	0.581435
10/26/2010 10:29	540.001	0.24766	15.468781	0.571839
10/26/2010 10:30	600.001	0.241025	15.46167	0.556519
10/26/2010 10:31	660.001	0.235479	15.456451	0.543715
10/26/2010 10:32	720.001	0.23156	15.451752	0.534664
10/26/2010 10:33	780.001	0.227209	15.448425	0.524619
10/26/2010 10:34	840.001	0.220834	15.45459	0.509898
10/26/2010 10:35	900.001	0.217152	15.455536	0.501396
10/26/2010 10:36	960.001	0.251753	15.430939	0.58129
10/26/2010 10:37	1020.001	0.249947	15.415771	0.577119
10/26/2010 10:38	1080.001	0.249765	15.409607	0.576701
10/26/2010 10:39	1140.001	0.248199	15.414825	0.573083
10/26/2010 10:40	1200.001	0.245907	15.420959	0.567791
10/26/2010 10:41	1260.001	0.242593	15.426178	0.560139
10/26/2010 10:42	1320.001	0.23771	15.434723	0.548865
10/26/2010 10:43	1380.001	0.235657	15.441315	0.544124
10/26/2010 10:44	1440.001	0.232162	15.448883	0.536054
10/26/2010 10:45	1500.001	0.228234	15.453644	0.526986
10/26/2010 10:46	1560.001	0.224511	15.459778	0.518389
10/26/2010 10:47	1620.001	0.221002	15.463562	0.510286
10/26/2010 10:48	1680.001	0.218344	15.464508	0.504149
10/26/2010 10:49	1740.001	0.212617	15.467346	0.490926
10/26/2010 10:50	1800.001	0.209115	15.486786	0.48284
10/26/2010 10:51	1860.001	0.242221	15.482513	0.559281
10/26/2010 10:52	1920.001	0.271885	15.49057	0.627774
10/26/2010 10:53	1980.001	0.274843	15.524628	0.634604

10/26/2010 10:54	2040.001	0.274897	15.561554	0.634728
10/26/2010 10:55	2100.001	0.277192	15.585693	0.640028
10/26/2010 10:56	2160.001	0.276648	15.612701	0.638771
10/26/2010 10:57	2220.001	0.273694	15.628326	0.631951
10/26/2010 10:58	2280.001	0.272547	15.644897	0.629302
10/26/2010 10:59	2340.001	0.270553	15.661469	0.624698
10/26/2010 11:00	2400.001	0.266876	15.674713	0.616209
10/26/2010 11:01	2460.001	0.262712	15.690338	0.606595
10/26/2010 11:02	2520.001	0.261625	15.702179	0.604085
10/26/2010 11:03	2580.001	0.256319	15.717834	0.591833
10/26/2010 11:04	2640.001	0.254696	15.729187	0.588085
10/26/2010 11:05	2700.001	0.251318	15.740082	0.580285
10/26/2010 11:06	2760.001	0.246911	15.757141	0.57011
10/26/2010 11:07	2820.001	0.244371	15.77417	0.564246
10/26/2010 11:08	2880.001	0.240932	15.79599	0.556306
10/26/2010 11:09	2940.001	0.236598	15.812561	0.546297
10/26/2010 11:10	3000.001	0.23381	15.832428	0.539861
10/26/2010 11:11	3060.001	0.228572	15.848114	0.527765
10/26/2010 11:12	3120.001	0.226392	15.867493	0.522732
10/26/2010 11:13	3180.001	0.223621	15.88501	0.516335
10/26/2010 11:14	3240.001	0.219998	15.910614	0.507969
10/26/2010 11:15	3300.001	0.216074	15.934814	0.498908
10/26/2010 11:16	3360.001	0.21324	15.959442	0.492364
10/26/2010 11:17	3420.001	0.209496	15.984558	0.483721
10/26/2010 11:18	3480.001	0.208474	16.011108	0.48136
10/26/2010 11:19	3540.001	0.20647	16.044739	0.476734
10/26/2010 11:20	3600.001	0.201156	16.072754	0.464462
10/26/2010 11:21	3660.001	0.199888	16.101196	0.461536
10/26/2010 11:22	3720.001	0.196753	16.124908	0.454296
10/26/2010 11:23	3780.001	0.193377	16.151428	0.446503
10/26/2010 11:24	3840.001	0.192635	16.176544	0.444787
10/26/2010 11:25	3900.001	0.188049	16.205505	0.4342
10/26/2010 11:26	3960.001	0.186537	16.253906	0.430708
10/26/2010 11:27	4020.001	0.183582	16.288513	0.423886
10/26/2010 11:28	4080.001	0.180261	16.32077	0.416216
10/26/2010 11:29	4140.001	0.195998	16.329315	0.452554
10/26/2010 11:30	4200.001	0.21282	16.299927	0.491395
10/26/2010 11:31	4260.001	0.211241	16.333099	0.487748
10/26/2010 11:32	4320.001	0.20809	16.368195	0.480473
10/26/2010 11:33	4380.001	0.206218	16.391449	0.47615
10/26/2010 11:34	4440.001	0.205671	16.400482	0.474889
10/26/2010 11:35	4500.001	0.200961	16.406647	0.464013
10/26/2010 11:36	4560.001	0.199208	16.422302	0.459966
10/26/2010 11:37	4620.001	0.197204	16.448425	0.455337
10/26/2010 11:38	4680.001	0.195706	16.489716	0.45188
10/26/2010 11:39	4740.001	0.192616	16.528625	0.444743
10/26/2010 11:40	4800.001	0.189829	16.572784	0.438309

10/26/2010 11:41	4860.001	0.188924	16.610779	0.436219
10/26/2010 11:42	4920.001	0.184696	16.64212	0.426458
10/26/2010 11:43	4980.001	0.182932	16.676758	0.422384
10/26/2010 11:44	5040.001	0.181599	16.7034	0.419306
10/26/2010 11:45	5100.001	0.257106	16.890106	0.593649
10/26/2010 11:46	5160.001	0.253489	17.091156	0.585299
10/26/2010 11:47	5220.001	0.253376	17.222412	0.585037
10/26/2010 11:48	5280.001	0.251494	17.30188	0.580693
10/26/2010 11:49	5340.001	0.24798	17.357056	0.572578
10/26/2010 11:50	5400.001	0.246651	17.393677	0.569509
10/26/2010 11:51	5460.001	0.243745	17.419861	0.562799
10/26/2010 11:52	5520.001	0.240417	17.440826	0.555117
10/26/2010 11:53	5580.001	0.239992	17.460327	0.554134
10/26/2010 11:54	5640.001	0.236113	17.484619	0.545177
10/26/2010 11:55	5700.001	0.234659	17.50174	0.541821
10/26/2010 11:56	5760.001	0.229693	17.519379	0.530355
10/26/2010 11:57	5820.001	0.22897	17.539337	0.528684
10/26/2010 11:58	5880.001	0.226605	17.556519	0.523225
10/26/2010 11:59	5940.001	0.22473	17.57077	0.518894
10/26/2010 12:00	6000.001	0.219338	17.586945	0.506446
10/26/2010 12:01	6060.001	0.218794	17.601257	0.505188
10/26/2010 12:02	6120.001	0.21661	17.61554	0.500146
10/26/2010 12:03	6180.001	0.214129	17.628876	0.494418
10/26/2010 12:04	6240.001	0.211282	17.641266	0.487843
10/26/2010 12:05	6300.001	0.207767	17.659851	0.479727
10/26/2010 12:06	6360.001	0.205407	17.672668	0.474279
10/26/2010 12:07	6420.001	0.200985	17.688904	0.464068
10/26/2010 12:08	6480.001	0.202314	17.694611	0.467138
10/26/2010 12:09	6540.001	0.199407	17.706024	0.460424
10/26/2010 12:10	6600.001	0.196866	17.721741	0.454558
10/26/2010 12:11	6660.001	0.193895	17.737	0.447698
10/26/2010 12:12	6720.001	0.192554	17.752716	0.4446
10/26/2010 12:13	6780.001	0.189773	17.763184	0.438179
10/26/2010 12:14	6840.001	0.18856	17.770813	0.43538
10/26/2010 12:15	6900.001	0.187464	17.785156	0.432848
10/26/2010 12:16	6960.001	0.182981	17.799408	0.422496
10/26/2010 12:17	7020.001	0.179768	17.817963	0.415078

Report Date: 11/4/2010 19:03
Report User Name: tgodwin
Report Computer Name: BUTTE-FIELD

Log File Properties

File Name Test_1_Append_20101026_221242657.wsl
Create Date 10/26/2010 15:12

Device Properties

Device Level TROLL 700
Site LTA-SI-DR-5
Device Name
Serial Number 148876
Firmware Version 2.08
Hardware Version 3

Log Configuration

Log Name Test 1
Created By tgodwin
Computer Name BUTTE-FIELD
Application WinSitu.exe
Application Version 5.6.8.4
Create Date 10/26/2010 14:01
Notes Size(bytes) 4096
Type Linear
Overwrite when full Disabled
Scheduled Start Time Manual Start
Scheduled Stop Time No Stop Time
Interval Days: 0 hrs: 00 mins: 01 secs: 00

Level Reference Settings At Log Creation

Level Measurement Mo Depth
Specific Gravity 0.999

Log Notes:

Date and Time	Note
10/26/2010 14:01	Sensor: 148876 Factory calibration has expired.: 7/23/2010 6:43:46 AM
10/26/2010 14:01	Manual Start Command
10/26/2010 14:16	Log Download - Used Battery: 29% Used Memory: 12% Name: tgodwin
10/26/2010 14:24	Log Download - Used Battery: 29% Used Memory: 12% Name: tgodwin
10/26/2010 14:33	Log Download - Used Battery: 29% Used Memory: 12% Name: tgodwin
10/26/2010 14:40	Log Download - Used Battery: 29% Used Memory: 12% Name: tgodwin
10/26/2010 14:47	Log Download - Used Battery: 29% Used Memory: 12% Name: tgodwin

10/26/2010 14:55 Log Download - Used Battery: 29% Used Memory: 12% Name: tgodwin

10/26/2010 15:01 Log Download - Used Battery: 29% Used Memory: 12% Name: tgodwin

10/26/2010 15:12 Manual Stop Command

Log Data:

Record Count 72

Date and Time	Elapsed Time Seconds	Sensor: Pres 69ft	Sensor: Pres 69ft	Sensor: Pres 69ft	
		SN#: 148876	SN#: 148876	SN#: 148876	
		Pressure (PSI)	Temperature (C)	Depth (ft)	
10/26/2010 14:01		0	0.041061	18.989288	0.09481
10/26/2010 14:02		60.001	0.038229	18.761322	0.08827
10/26/2010 14:03		120.001	0.040155	18.515808	0.092718
10/26/2010 14:04		180.001	0.037628	18.301483	0.086882
10/26/2010 14:05		240.001	0.077509	18.090179	0.178966
10/26/2010 14:06		300.001	0.15131	17.725555	0.34937
10/26/2010 14:07		360.001	0.089124	17.216248	0.205784
10/26/2010 14:08		420.001	0.181499	16.819275	0.419074
10/26/2010 14:09		480.001	0.135662	16.673004	0.31324
10/26/2010 14:10		540.001	0.095776	16.364899	0.221143
10/26/2010 14:11		600.001	0.16948	16.287079	0.391325
10/26/2010 14:12		660.001	0.130483	16.260529	0.30128
10/26/2010 14:13		720.001	0.098193	16.042877	0.226725
10/26/2010 14:14		780.001	0.219961	16.014404	0.507884
10/26/2010 14:15		840.001	0.180338	16.187469	0.416395
10/26/2010 14:16		900.001	0.152778	16.119202	0.352759
10/26/2010 14:17		960.001	0.256737	16.082672	0.592797
10/26/2010 14:18		1020.001	0.221769	16.315552	0.512058
10/26/2010 14:19		1080.001	0.191657	16.412323	0.44253
10/26/2010 14:20		1140.001	0.289626	16.417084	0.668738
10/26/2010 14:21		1200.015	0.257826	16.491608	0.595312
10/26/2010 14:22		1260.001	0.229823	16.543335	0.530654
10/26/2010 14:23		1320.001	0.204291	16.563293	0.471702
10/26/2010 14:24		1380.001	0.18179	16.512512	0.419748
10/26/2010 14:25		1440.001	0.163279	16.315552	0.377005
10/26/2010 14:26		1500.001	0.282744	16.280914	0.652848
10/26/2010 14:27		1560.001	0.255887	16.443634	0.590835
10/26/2010 14:28		1620.001	0.234054	16.540955	0.540423
10/26/2010 14:29		1680.001	0.211068	16.57135	0.48735
10/26/2010 14:30		1740.001	0.192197	16.511536	0.443777
10/26/2010 14:31		1800.001	0.176593	16.387665	0.407747
10/26/2010 14:32		1860.001	0.245848	16.366333	0.567655
10/26/2010 14:33		1920.001	0.226011	16.452209	0.521853
10/26/2010 14:34		1980.001	0.206892	16.493011	0.477707
10/26/2010 14:35		2040.001	0.188864	16.433228	0.436081
10/26/2010 14:36		2100.001	0.240219	16.31601	0.554658

10/26/2010 14:37	2160.001	0.220014	16.417084	0.508005
10/26/2010 14:38	2220.001	0.202839	16.462189	0.468349
10/26/2010 14:39	2280.001	0.255342	16.411377	0.589578
10/26/2010 14:40	2340.001	0.238343	16.494934	0.550327
10/26/2010 14:41	2400.001	0.220681	16.575623	0.509546
10/26/2010 14:42	2460.001	0.204406	16.587036	0.471967
10/26/2010 14:43	2520.001	0.250444	16.584656	0.578268
10/26/2010 14:44	2580.001	0.235562	16.637817	0.543906
10/26/2010 14:45	2640.001	0.219174	16.663483	0.506067
10/26/2010 14:46	2700.001	0.279119	16.671082	0.644478
10/26/2010 14:47	2760.001	0.264843	16.711426	0.611514
10/26/2010 14:48	2820.001	0.247424	16.74231	0.571295
10/26/2010 14:49	2880.001	0.229878	16.740875	0.530782
10/26/2010 14:50	2940.001	0.210999	16.696747	0.487191
10/26/2010 14:51	3000.001	0.264963	16.624054	0.611792
10/26/2010 14:52	3060.001	0.252261	16.63736	0.582463
10/26/2010 14:53	3120.001	0.23665	16.652069	0.546419
10/26/2010 14:54	3180.001	0.220806	16.633087	0.509834
10/26/2010 14:55	3240.001	0.204108	16.559479	0.47128
10/26/2010 14:56	3300.001	0.189183	16.442719	0.436818
10/26/2010 14:57	3360.001	0.174185	16.264313	0.402187
10/26/2010 14:58	3420.001	0.158886	16.00589	0.366863
10/26/2010 14:59	3480.001	0.145118	15.68985	0.335072
10/26/2010 15:00	3540.001	0.130167	15.384094	0.300552
10/26/2010 15:01	3600.001	0.117437	15.104065	0.271159
10/26/2010 15:02	3660.001	0.102061	14.850739	0.235656
10/26/2010 15:03	3720.001	0.089615	14.6604	0.206918
10/26/2010 15:04	3780.001	0.076605	14.481964	0.176878
10/26/2010 15:05	3840.001	0.065624	14.304077	0.151524
10/26/2010 15:06	3900.001	0.052424	14.135254	0.121046
10/26/2010 15:07	3960.001	0.033113	13.985809	0.076458
10/26/2010 15:08	4020.001	0.015545	13.845367	0.035893
10/26/2010 15:09	4080.001	0.034864	13.713013	0.080501
10/26/2010 15:10	4140.001	0.03503	13.576477	0.080884
10/26/2010 15:11	4200.001	0.035744	13.448486	0.082531
10/26/2010 15:12	4260.001	0.03586	13.378357	0.0828

Report Date: 8/4/2011 15:43
Report User Name: cfrey
Report Computer Name: SAC-CFREY
Application: WinSitu.exe
Application Version: 5.6.17.7

Log File Properties

File Name LTA-SI-DR-6_Append_2011-08-04_15-42-31-203.wsl
Create Date 8/4/2011 15:42

Device Properties

Device Level TROLL 700
Site Bear Pond
Device Name
Serial Number 149638
Firmware Version 2.08
Hardware Version 3
Device Address 1
Device Comm Cfg 19200 8 Even 1

Log Configuration

Log Name LTA-SI-DR-6
Created By cfrey
Computer Name SAC-CFREY
Application WinSitu.exe
Application Version 5.6.17.7
Create Date 8/4/2011 13:52 Pacific Daylight Time
Log Setup Time Zone Pacific Daylight Time
Notes Size(bytes) 4096
Overwrite when full Disabled
Scheduled Start Time Manual Start Pacific Daylight Time
Scheduled Stop Time No Stop Time Pacific Daylight Time
Type Linear
Interval Days: 0 hrs: 00 mins: 01 secs: 00

Level Reference Settings At Log Creation

Level Measurement Mode Depth
Specific Gravity 0.999

Other Log Settings

Depth of Probe: 0.0709001 (ft)
Head Pressure: 0.0307064 (PSI)
Temperature: 42.8523 (C)

Log Notes:

Date and Time	Note
8/4/2011 13:52	Sensor: 149638 Factory calibration has expired.: 8/12/2010 11:27:14 AM
8/4/2011 13:52	Used Battery: 22% Used Memory: 4% User Name: cfrey
8/4/2011 13:59	Manual Start Command
8/4/2011 14:34	Log Download - Used Battery: 22% Used Memory: 4% User Name: cfrey
8/4/2011 14:36	Log Download - Used Battery: 22% Used Memory: 4% User Name: cfrey
8/4/2011 14:41	Log Download - Used Battery: 22% Used Memory: 4% User Name: cfrey
8/4/2011 15:26	Log Download - Used Battery: 22% Used Memory: 4% User Name: cfrey
8/4/2011 15:31	Log Download - Used Battery: 22% Used Memory: 4% User Name: cfrey
8/4/2011 15:35	Log Download - Used Battery: 22% Used Memory: 4% User Name: cfrey
8/4/2011 15:42	Used Battery: 22% Used Memory: 4% User Name: cfrey
8/4/2011 15:42	Manual Stop Command

Log Data:

Record Count 103

Sensors 1

1 149638 Pressure/Temp 30 PSIG (21m/69ft)

Time Zone: Pacific Daylight Time

Date and Time	Elapsed Time Seconds	Sensor: Pres(G) 69ft	Sensor: Pres(G) 69ft	Sensor: Pres(G) 69ft	
		SN#: 149638 Pressure (PSI)	SN#: 149638 Temperature (C)	SN#: 149638 Depth (ft)	
8/4/2011 13:59		0	0.036	43.005	0.082
8/4/2011 14:00		60	0.035	42.932	0.081
8/4/2011 14:01		120	0.036	42.526	0.083
8/4/2011 14:02		180	0.033	40.305	0.076
8/4/2011 14:03		240	0.094	37.15	0.216
8/4/2011 14:04		300	0.071	34.171	0.163
8/4/2011 14:05		360	0.034	32.647	0.079
8/4/2011 14:06		420	0.034	31.446	0.078
8/4/2011 14:07		480	0.032	30.444	0.074
8/4/2011 14:08		540	0.033	29.663	0.075
8/4/2011 14:09		600	0.151	28.975	0.349
8/4/2011 14:10		660	0.17	27.554	0.393
8/4/2011 14:11		720	0.133	26.773	0.306
8/4/2011 14:12		780	0.3	26.271	0.692
8/4/2011 14:13		840	0.236	25.693	0.545
8/4/2011 14:14		900	0.222	25.337	0.512
8/4/2011 14:15		960	0.262	25.068	0.604
8/4/2011 14:16		1020	0.295	24.895	0.68

8/4/2011 14:17	1080	0.252	24.759	0.581
8/4/2011 14:18	1140	0.216	24.689	0.498
8/4/2011 14:19	1200	0.328	24.642	0.757
8/4/2011 14:20	1260	0.293	24.594	0.677
8/4/2011 14:21	1320	0.253	24.583	0.584
8/4/2011 14:22	1380	0.22	24.589	0.508
8/4/2011 14:23	1440	0.271	24.614	0.626
8/4/2011 14:24	1500	0.304	24.654	0.702
8/4/2011 14:25	1560	0.273	24.695	0.629
8/4/2011 14:26	1620	0.308	24.742	0.711
8/4/2011 14:27	1680	0.281	24.787	0.648
8/4/2011 14:28	1740	0.258	24.848	0.595
8/4/2011 14:29	1800	0.234	24.869	0.541
8/4/2011 14:30	1860	0.218	24.904	0.503
8/4/2011 14:31	1920	0.297	24.947	0.687
8/4/2011 14:32	1980	0.273	25.005	0.631
8/4/2011 14:33	2040	0.253	25.064	0.584
8/4/2011 14:34	2100	0.234	25.137	0.54
8/4/2011 14:35	2160	0.216	25.182	0.498
8/4/2011 14:36	2220	0.199	25.248	0.461
8/4/2011 14:37	2280	0.188	25.327	0.434
8/4/2011 14:38	2340	0.325	25.442	0.75
8/4/2011 14:39	2400	0.298	25.589	0.688
8/4/2011 14:40	2460	0.274	25.692	0.632
8/4/2011 14:41	2520	0.257	25.772	0.593
8/4/2011 14:42	2580	0.239	25.84	0.551
8/4/2011 14:43	2640	0.223	25.912	0.516
8/4/2011 14:44	2700	0.356	25.984	0.822
8/4/2011 14:45	2760	0.333	26.057	0.769
8/4/2011 14:46	2820	0.317	26.116	0.732
8/4/2011 14:47	2880	0.3	26.158	0.694
8/4/2011 14:48	2940.001	0.286	26.192	0.66
8/4/2011 14:49	3000	0.27	26.226	0.624
8/4/2011 14:50	3060	0.256	26.257	0.591
8/4/2011 14:51	3120	0.243	26.289	0.56
8/4/2011 14:52	3180	0.303	26.333	0.699
8/4/2011 14:53	3240	0.285	26.532	0.658
8/4/2011 14:54	3300	0.271	26.685	0.625
8/4/2011 14:55	3360	0.256	26.789	0.59
8/4/2011 14:56	3420	0.242	26.863	0.559
8/4/2011 14:57	3480	0.229	26.921	0.529
8/4/2011 14:58	3540	0.216	26.967	0.5
8/4/2011 14:59	3600	0.208	27.014	0.48
8/4/2011 15:00	3660	0.275	27.09	0.635
8/4/2011 15:01	3720	0.263	27.205	0.607
8/4/2011 15:02	3780	0.254	27.287	0.587
8/4/2011 15:03	3840	0.242	27.352	0.558

8/4/2011 15:04	3900	0.232	27.402	0.535
8/4/2011 15:05	3960	0.224	27.437	0.517
8/4/2011 15:06	4020	0.212	27.454	0.49
8/4/2011 15:07	4080	0.276	27.479	0.637
8/4/2011 15:08	4140	0.264	27.61	0.609
8/4/2011 15:09	4200	0.253	27.702	0.584
8/4/2011 15:10	4260	0.243	27.762	0.56
8/4/2011 15:11	4320	0.232	27.81	0.536
8/4/2011 15:12	4380	0.223	27.837	0.515
8/4/2011 15:13	4440	0.212	27.851	0.49
8/4/2011 15:14	4500	0.203	27.84	0.468
8/4/2011 15:15	4560	0.19	27.831	0.439
8/4/2011 15:16	4620	0.184	27.834	0.424
8/4/2011 15:17	4680	0.177	27.857	0.408
8/4/2011 15:18	4740	0.168	27.862	0.387
8/4/2011 15:19	4800	0.162	27.871	0.374
8/4/2011 15:20	4860	0.155	27.878	0.357
8/4/2011 15:21	4920	0.147	27.902	0.34
8/4/2011 15:22	4980	0.138	27.932	0.318
8/4/2011 15:23	5040	0.131	27.974	0.303
8/4/2011 15:24	5100	0.124	28.043	0.287
8/4/2011 15:25	5160	0.119	28.112	0.274
8/4/2011 15:26	5220	0.113	28.173	0.262
8/4/2011 15:27	5280	0.105	28.253	0.243
8/4/2011 15:28	5340	0.101	28.339	0.233
8/4/2011 15:29	5400	0.091	28.411	0.209
8/4/2011 15:30	5460	0.087	28.477	0.2
8/4/2011 15:31	5520	0.082	28.547	0.189
8/4/2011 15:32	5580	0.079	28.632	0.183
8/4/2011 15:33	5640	0.073	28.714	0.169
8/4/2011 15:34	5700	0.069	28.797	0.16
8/4/2011 15:35	5760	0.063	28.865	0.144
8/4/2011 15:36	5820	0.057	28.956	0.131
8/4/2011 15:37	5880	0.049	29.041	0.114
8/4/2011 15:38	5940	0.04	29.13	0.093
8/4/2011 15:39	6000	0.027	29.208	0.061
8/4/2011 15:40	6060	0.029	29.299	0.067
8/4/2011 15:41	6120	0.03	29.395	0.069

Report Date: 11/4/2010 19:02
Report User Name: tgodwin
Report Computer Name: BUTTE-FIELD

Log File Properties

File Name Test 1_Append_20101025_234222681.wsl
Create Date 10/25/2010 16:42

Device Properties

Device Level TROLL 700
Site LTA-SI-DR-7
Device Name
Serial Number 148876
Firmware Version 2.08
Hardware Version 3

Log Configuration

Log Name Test 1
Created By tgodwin
Computer Name BUTTE-FIELD
Application WinSitu.exe
Application Version 5.6.8.4
Create Date 10/25/2010 14:26
Notes Size(bytes) 4096
Type Linear
Overwrite when full Disabled
Scheduled Start Time Manual Start
Scheduled Stop Time No Stop Time
Interval Days: 0 hrs: 00 mins: 01 secs: 00

Level Reference Settings At Log Creation

Level Measurement Mode Depth
Specific Gravity 0.999

Log Notes:

Date and Time	Note
10/25/2010 14:26	Sensor: 148876 Factory calibration has expired.: 7/23/2010 6:43:46 AM
10/25/2010 14:55	Manual Start Command
10/25/2010 15:07	Log Download - Used Battery: 29% Used Memory: 9% Name: tgodwin
10/25/2010 15:21	Log Download - Used Battery: 29% Used Memory: 9% Name: tgodwin
10/25/2010 15:31	Log Download - Used Battery: 29% Used Memory: 9% Name: tgodwin
10/25/2010 15:40	Log Download - Used Battery: 29% Used Memory: 9% Name: tgodwin
10/25/2010 15:46	Log Download - Used Battery: 29% Used Memory: 9% Name: tgodwin

10/25/2010 15:57 Log Download - Used Battery: 29% Used Memory: 9% Name: tgodwin
 10/25/2010 16:16 Log Download - Used Battery: 29% Used Memory: 9% Name: tgodwin
 10/25/2010 16:31 Log Download - Used Battery: 29% Used Memory: 9% Name: tgodwin
 10/25/2010 16:41 Log Download - Used Battery: 29% Used Memory: 9% Name: tgodwin
 10/25/2010 16:42 Manual Stop Command

Log Data:

Record Count 107

Date and Time	Elapsed Time Seconds	Sensor: Pres 69ft	Sensor: Pres 69ft	Sensor: Pres 69ft
		SN#: 148876	SN#: 148876	SN#: 148876
		Pressure (PSI)	Temperature (C)	Depth (ft)
10/25/2010 14:55	0	0.036826	17.121124	0.08503
10/25/2010 14:56	60.001	0.037255	17.111603	0.086021
10/25/2010 14:57	120.001	0.035674	17.072601	0.08237
10/25/2010 14:58	180.001	0.147868	17.267609	0.341423
10/25/2010 14:59	240.001	0.267325	17.721741	0.617246
10/25/2010 15:00	300.001	0.261419	18.048676	0.603609
10/25/2010 15:01	360.001	0.257103	18.2323	0.593643
10/25/2010 15:02	420.001	0.254004	18.335388	0.586488
10/25/2010 15:03	480.001	0.249389	18.404572	0.575831
10/25/2010 15:04	540.001	0.246353	18.440369	0.568822
10/25/2010 15:05	600.001	0.242095	18.453278	0.55899
10/25/2010 15:06	660.001	0.240028	18.465698	0.554218
10/25/2010 15:07	720.001	0.236988	18.472839	0.547198
10/25/2010 15:08	780.001	0.236022	18.481903	0.544967
10/25/2010 15:09	840.001	0.268872	18.484772	0.620818
10/25/2010 15:10	900.001	0.264618	18.50293	0.610995
10/25/2010 15:11	960.001	0.261161	18.522034	0.603012
10/25/2010 15:12	1020.001	0.258003	18.535858	0.595721
10/25/2010 15:13	1080.001	0.25752	18.556885	0.594605
10/25/2010 15:14	1140.001	0.255452	18.571198	0.589831
10/25/2010 15:15	1200.001	0.252902	18.585052	0.583943
10/25/2010 15:16	1260.001	0.250533	18.599396	0.578473
10/25/2010 15:17	1320.001	0.247376	18.61084	0.571185
10/25/2010 15:18	1380.001	0.326287	18.590332	0.753387
10/25/2010 15:19	1440.001	0.323611	18.564514	0.747208
10/25/2010 15:20	1500.001	0.321339	18.558777	0.741961
10/25/2010 15:21	1560.014	0.319266	18.567413	0.737176
10/25/2010 15:22	1620.001	0.316931	18.577881	0.731783
10/25/2010 15:23	1680.001	0.316203	18.592712	0.730103
10/25/2010 15:24	1740.001	0.314322	18.604187	0.725761
10/25/2010 15:25	1800.001	0.311889	18.616577	0.720141
10/25/2010 15:26	1860.001	0.311409	18.62851	0.719034
10/25/2010 15:27	1920.001	0.306122	18.642365	0.706826
10/25/2010 15:28	1980.001	0.305147	18.652405	0.704575

10/25/2010 15:29	2040.001	0.305392	18.661469	0.705141
10/25/2010 15:30	2100.001	0.302113	18.671509	0.697569
10/25/2010 15:31	2160.001	0.301629	18.67868	0.696452
10/25/2010 15:32	2220.001	0.303349	18.683929	0.700422
10/25/2010 15:33	2280.001	0.300312	18.692993	0.693411
10/25/2010 15:34	2340.001	0.298369	18.698273	0.688926
10/25/2010 15:35	2400.001	0.296792	18.703064	0.685284
10/25/2010 15:36	2460.001	0.294359	18.715424	0.679666
10/25/2010 15:37	2520.001	0.29606	18.72406	0.683592
10/25/2010 15:38	2580.001	0.291988	18.730286	0.674192
10/25/2010 15:39	2640.001	0.291441	18.743195	0.672928
10/25/2010 15:40	2700.001	0.291686	18.74939	0.673494
10/25/2010 15:41	2760.001	0.289619	18.759399	0.668722
10/25/2010 15:42	2820.001	0.288282	18.766602	0.665635
10/25/2010 15:43	2880.001	0.287433	18.774231	0.663673
10/25/2010 15:44	2940.001	0.286035	18.781403	0.660445
10/25/2010 15:45	3000.001	0.28616	18.789978	0.660736
10/25/2010 15:46	3060.001	0.284764	18.799561	0.657512
10/25/2010 15:47	3120.001	0.283791	18.810516	0.655264
10/25/2010 15:48	3180.001	0.282943	18.822021	0.653306
10/25/2010 15:49	3240.001	0.281599	18.833466	0.650203
10/25/2010 15:50	3300.001	0.280083	18.840179	0.646702
10/25/2010 15:51	3360.001	0.276377	18.851166	0.638145
10/25/2010 15:52	3420.001	0.278098	18.858337	0.64212
10/25/2010 15:53	3480.001	0.276684	18.864563	0.638854
10/25/2010 15:54	3540.001	0.275551	18.876953	0.636238
10/25/2010 15:55	3600.001	0.273907	18.883179	0.632442
10/25/2010 15:56	3660.001	0.271961	18.88797	0.62795
10/25/2010 15:57	3720.001	0.272569	18.879822	0.629353
10/25/2010 15:58	3780.001	0.270482	18.876953	0.624535
10/25/2010 15:59	3840.001	0.27091	18.879822	0.625523
10/25/2010 16:00	3900.001	0.269469	18.876953	0.622196
10/25/2010 16:01	3960.001	0.270201	18.877441	0.623885
10/25/2010 16:02	4020.001	0.268984	18.875092	0.621075
10/25/2010 16:03	4080.001	0.267649	18.871216	0.617993
10/25/2010 16:04	4140.001	0.267037	18.87027	0.616581
10/25/2010 16:05	4200.001	0.266551	18.869293	0.615458
10/25/2010 16:06	4260.001	0.265643	18.867432	0.613362
10/25/2010 16:07	4320.001	0.26309	18.871216	0.607467
10/25/2010 16:08	4380.001	0.264139	18.87265	0.609889
10/25/2010 16:09	4440.001	0.26329	18.876495	0.607929
10/25/2010 16:10	4500.001	0.26195	18.873627	0.604836
10/25/2010 16:11	4560.001	0.262358	18.88031	0.605776
10/25/2010 16:12	4620.001	0.26195	18.884613	0.604836
10/25/2010 16:13	4680.001	0.258914	18.883667	0.597824
10/25/2010 16:14	4740.001	0.259528	18.884155	0.599242
10/25/2010 16:15	4800.001	0.25709	18.890839	0.593612

10/25/2010 16:16	4860.001	0.259887	18.894684	0.60007
10/25/2010 16:17	4920.001	0.25723	18.900848	0.593936
10/25/2010 16:18	4980.001	0.256829	18.884613	0.593011
10/25/2010 16:19	5040.001	0.255189	18.878387	0.589223
10/25/2010 16:20	5100.001	0.256541	18.875092	0.592346
10/25/2010 16:21	5160.001	0.252822	18.873138	0.583758
10/25/2010 16:22	5220.001	0.255738	18.873627	0.590492
10/25/2010 16:23	5280.001	0.256525	18.874115	0.592308
10/25/2010 16:24	5340.001	0.255937	18.875549	0.59095
10/25/2010 16:25	5400.001	0.254357	18.874115	0.587303
10/25/2010 16:26	5460.001	0.255509	18.878387	0.589963
10/25/2010 16:27	5520.001	0.253627	18.881744	0.585617
10/25/2010 16:28	5580.001	0.252835	18.883667	0.583789
10/25/2010 16:29	5640.001	0.251498	18.887482	0.580702
10/25/2010 16:30	5700.001	0.251559	18.88797	0.580843
10/25/2010 16:31	5760.001	0.25162	18.894684	0.580983
10/25/2010 16:32	5820.001	0.251559	18.894684	0.580843
10/25/2010 16:33	5880.001	0.25053	18.894684	0.578467
10/25/2010 16:34	5940.001	0.24925	18.896576	0.575512
10/25/2010 16:35	6000.001	0.248823	18.899933	0.574525
10/25/2010 16:36	6060.001	0.248945	18.899933	0.574807
10/25/2010 16:37	6120.003	0.248886	18.902283	0.57467
10/25/2010 16:38	6180.001	0.24925	18.905182	0.575512
10/25/2010 16:39	6240.001	0.24822	18.90564	0.573133
10/25/2010 16:40	6300.018	0.248854	18.907562	0.574595
10/25/2010 16:41	6360.001	0.246654	18.914734	0.569515

Report Date: 8/5/2011 10:27
Report User Name: cfrey
Report Computer Name: SAC-CFREY
Application: WinSitu.exe
Application Version: 5.6.17.7

Log File Properties

File Name LTA-SI-DR-8_Append_2011-08-05_10-27-24-453.wsl
Create Date 8/5/2011 10:27

Device Properties

Device Level TROLL 700
Site Cohasset
Device Name
Serial Number 149638
Firmware Version 2.08
Hardware Version 3
Device Address 1
Device Comm Cfg 19200 8 Even 1

Log Configuration

Log Name LTA-SI-DR-8
Created By cfrey
Computer Name SAC-CFREY
Application WinSitu.exe
Application Version 5.6.17.7
Create Date 8/5/2011 6:57 Pacific Daylight Time
Log Setup Time Zone Pacific Daylight Time
Notes Size(bytes) 4096
Overwrite when full Disabled
Scheduled Start Time Manual Start Pacific Daylight Time
Scheduled Stop Time No Stop Time Pacific Daylight Time
Type Linear
Interval Days: 0 hrs: 00 mins: 01 secs: 00

Level Reference Settings At Log Creation

Level Measurement Depth
Specific Gravity 0.999

Other Log Settings

Depth of Probe: 0.0739367 (ft)
Head Pressure: 0.0320215 (PSI)
Temperature: 17.3348 (C)

Log Notes:

Date and Time	Note
8/5/2011 6:58	Sensor: 149638 Factory calibration has expired.: 8/12/2010 11:27:14 AM
8/5/2011 6:58	Used Battery: 22% Used Memory: 6% User Name: cfrey
8/5/2011 7:33	Manual Start Command
8/5/2011 7:55	Log Download - Used Battery: 22% Used Memory: 6% User Name: cfrey
8/5/2011 8:08	Log Download - Used Battery: 22% Used Memory: 6% User Name: cfrey
8/5/2011 8:24	Log Download - Used Battery: 22% Used Memory: 6% User Name: cfrey
8/5/2011 8:31	Log Download - Used Battery: 22% Used Memory: 6% User Name: cfrey
8/5/2011 8:38	Used Battery: 22% Used Memory: 6% User Name: cfrey
8/5/2011 8:38	Manual Stop Command

Log Data:

Record Count	65
Sensors	1
	1 149638 Pressure/Temp 30 PSIG (21m/69ft)

Time Zone: Pacific Daylight Time

Date and Time	Elapsed Time Seconds	Sensor: Pres(G) 69ft	Sensor: Pres(G) 69ft	Sensor: Pres(G) 69ft
		SN#: 149638 Pressure (PSI)	SN#: 149638 Temperature (C)	SN#: 149638 Depth (ft)
8/5/2011 7:33	0	0.039	15.304	0.091
8/5/2011 7:34	60	0.036	15.346	0.084
8/5/2011 7:35	120	0.231	15.98	0.533
8/5/2011 7:36	180	0.207	17.552	0.478
8/5/2011 7:37	240	0.173	18.502	0.399
8/5/2011 7:38	300	0.138	18.936	0.319
8/5/2011 7:39	360	0.134	19.07	0.309
8/5/2011 7:40	420	0.256	19.468	0.591
8/5/2011 7:41	480	0.235	19.873	0.542
8/5/2011 7:42	540	0.212	20.139	0.489
8/5/2011 7:43	600	0.203	20.301	0.468
8/5/2011 7:44	660	0.19	20.402	0.439
8/5/2011 7:45	720	0.175	20.433	0.405
8/5/2011 7:46	780	0.317	20.495	0.731
8/5/2011 7:47	840	0.296	20.667	0.683
8/5/2011 7:48	900	0.271	20.793	0.627
8/5/2011 7:49	960	0.257	20.876	0.594
8/5/2011 7:50	1020	0.248	20.938	0.573
8/5/2011 7:51	1080	0.283	20.987	0.653
8/5/2011 7:52	1140	0.274	20.963	0.633

8/5/2011 7:53	1200	0.253	20.942	0.585
8/5/2011 7:54	1260	0.281	20.934	0.649
8/5/2011 7:55	1320	0.266	20.927	0.613
8/5/2011 7:56	1380	0.244	20.899	0.564
8/5/2011 7:57	1440	0.231	20.875	0.534
8/5/2011 7:58	1500	0.215	20.871	0.497
8/5/2011 7:59	1560	0.199	20.867	0.459
8/5/2011 8:00	1620	0.181	20.854	0.417
8/5/2011 8:01	1680	0.168	20.791	0.387
8/5/2011 8:02	1740	0.259	20.782	0.597
8/5/2011 8:03	1800	0.241	20.822	0.557
8/5/2011 8:04	1860	0.22	20.853	0.509
8/5/2011 8:05	1920	0.201	20.869	0.463
8/5/2011 8:06	1980	0.184	20.859	0.425
8/5/2011 8:07	2040	0.264	20.833	0.609
8/5/2011 8:08	2100	0.248	20.875	0.572
8/5/2011 8:09	2160	0.224	20.918	0.518
8/5/2011 8:10	2220	0.206	20.94	0.475
8/5/2011 8:11	2280	0.207	20.938	0.477
8/5/2011 8:12	2340	0.288	20.945	0.665
8/5/2011 8:13	2400	0.267	20.966	0.617
8/5/2011 8:14	2460	0.246	20.984	0.568
8/5/2011 8:15	2520	0.224	20.995	0.517
8/5/2011 8:16	2580	0.204	20.982	0.471
8/5/2011 8:17	2640	0.185	20.937	0.428
8/5/2011 8:18	2700	0.17	20.863	0.393
8/5/2011 8:19	2760	0.165	20.787	0.38
8/5/2011 8:20	2820	0.155	20.724	0.357
8/5/2011 8:21	2880	0.145	20.643	0.335
8/5/2011 8:22	2940	0.133	20.554	0.308
8/5/2011 8:23	3000	0.122	20.456	0.281
8/5/2011 8:24	3060	0.121	20.336	0.279
8/5/2011 8:25	3120	0.118	20.241	0.272
8/5/2011 8:26	3180	0.112	20.178	0.259
8/5/2011 8:27	3240	0.104	20.136	0.241
8/5/2011 8:28	3300	0.095	20.108	0.22
8/5/2011 8:29	3360	0.088	20.078	0.202
8/5/2011 8:30	3420	0.08	20.058	0.184
8/5/2011 8:31	3480	0.072	20.047	0.166
8/5/2011 8:32	3540	0.064	20.038	0.147
8/5/2011 8:33	3600	0.056	20.04	0.13
8/5/2011 8:34	3660	0.046	20.046	0.107
8/5/2011 8:35	3720	0.039	20.056	0.091
8/5/2011 8:36	3780	0.032	20.077	0.074
8/5/2011 8:37	3840	0.021	20.095	0.048

Report Date: 10/21/2010 11:47
Report User Name: tgodwin
Report Computer Name: BUTTE-FIELD

Log File Properties

File Name test_1_Append_20101021_184622358.wsl
Create Date 10/21/2010 11:46

Device Properties

Device Level TROLL 700
Site LTA-SI-DR-9
Device Name
Serial Number 148876
Firmware Version 2.08
Hardware Version 3

Log Configuration

Log Name test 1
Created By tgodwin
Computer Name BUTTE-FIELD
Application WinSitu.exe
Application Version 5.6.8.4
Create Date 10/21/2010 10:03
Notes Size(bytes) 4096
Type Linear
Overwrite when full Disabled
Scheduled Start Time Manual Start
Scheduled Stop Time No Stop Time
Interval Days: 0 hrs: 00 mins: 01 secs: 00

Level Reference Settings At Log Creation

Level Measurement Mod Depth
Specific Gravity 0.999

Log Notes:

Date and Time	Note
10/21/2010 10:03	Sensor: 148876 Factory calibration has expired.: 7/23/2010 6:43:46 AM
10/21/2010 10:04	Manual Start Command
10/21/2010 10:28	Log Download - Used Battery: 28% Used Memory: 4% Name: tgodwin
10/21/2010 10:40	Log Download - Used Battery: 28% Used Memory: 4% Name: tgodwin
10/21/2010 10:57	Log Download - Used Battery: 28% Used Memory: 4% Name: tgodwin
10/21/2010 11:05	Log Download - Used Battery: 28% Used Memory: 4% Name: tgodwin
10/21/2010 11:15	Log Download - Used Battery: 28% Used Memory: 4% Name: tgodwin

10/21/2010 11:43 Log Download - Used Battery: 28% Used Memory: 4% Name: tgodwin

10/21/2010 11:46 Log Download - Used Battery: 28% Used Memory: 4% Name: tgodwin

Log Data:

Record Count 102

Date and Time	Elapsed Time Seconds	Sensor: Pres 69ft		Sensor: Pres 69ft	
		SN#: 148876	SN#: 148876	SN#: 148876	
		Pressure (PSI)	Temperature (C)	Depth (ft)	
10/21/2010 10:04		0	0.037632	20.255432	0.086891
10/21/2010 10:05		60	0.037929	19.890411	0.087576
10/21/2010 10:06		120	0.038153	19.592804	0.088093
10/21/2010 10:07		180	0.037352	19.330902	0.086244
10/21/2010 10:08		240	0.039047	19.118896	0.090159
10/21/2010 10:09		300	0.039536	18.940552	0.091286
10/21/2010 10:10		360	0.04169	18.788086	0.096261
10/21/2010 10:11		420	0.044085	18.651001	0.10179
10/21/2010 10:12		480	0.044783	18.560211	0.103402
10/21/2010 10:13		540	0.045483	18.495758	0.105018
10/21/2010 10:14		600	0.16963	18.345886	0.391671
10/21/2010 10:15		660	0.163262	18.097809	0.376968
10/21/2010 10:16		720	0.156892	17.859436	0.362258
10/21/2010 10:17		780	0.1535	17.675537	0.354426
10/21/2010 10:18		840	0.148289	17.540283	0.342394
10/21/2010 10:19		900	0.145861	17.413696	0.336788
10/21/2010 10:20		960	0.14411	17.338013	0.332745
10/21/2010 10:21		1020	0.211038	17.436035	0.487279
10/21/2010 10:22		1080	0.210553	17.502716	0.486161
10/21/2010 10:23		1140	0.205582	17.49411	0.474682
10/21/2010 10:24		1200	0.199577	17.47702	0.460818
10/21/2010 10:25		1260	0.197277	17.471741	0.455507
10/21/2010 10:26		1320	0.193702	17.455078	0.447251
10/21/2010 10:27		1380.018	0.189029	17.445068	0.436462
10/21/2010 10:28		1440.103	0.188058	17.412231	0.43422
10/21/2010 10:29		1500.19	0.183208	17.392731	0.423023
10/21/2010 10:30		1560.027	0.181032	17.403198	0.417998
10/21/2010 10:31		1620.113	0.178542	17.423218	0.412248
10/21/2010 10:32		1680.2	0.254984	17.488861	0.58875
10/21/2010 10:33		1740.031	0.25444	17.610291	0.587495
10/21/2010 10:34		1800.118	0.249104	17.681702	0.575172
10/21/2010 10:35		1860	0.246861	17.70697	0.569993
10/21/2010 10:36		1920	0.245217	17.74939	0.566199
10/21/2010 10:37		1980	0.239648	17.784668	0.553339
10/21/2010 10:38		2040	0.239106	17.807495	0.552089
10/21/2010 10:39		2100	0.234495	17.825134	0.541442
10/21/2010 10:40		2160	0.234317	17.841309	0.54103

10/21/2010 10:41	2220	0.23007	17.848511	0.531225
10/21/2010 10:42	2280	0.226677	17.855164	0.52339
10/21/2010 10:43	2340	0.225587	17.858521	0.520873
10/21/2010 10:44	2400	0.222374	17.854187	0.513455
10/21/2010 10:45	2460	0.217587	17.863708	0.502403
10/21/2010 10:46	2520	0.216916	17.876587	0.500853
10/21/2010 10:47	2580	0.213584	17.887085	0.493159
10/21/2010 10:48	2640	0.211464	17.888977	0.488264
10/21/2010 10:49	2700	0.209218	17.899933	0.483078
10/21/2010 10:50	2760	0.207826	17.899475	0.479863
10/21/2010 10:51	2820	0.203517	17.884705	0.469914
10/21/2010 10:52	2880	0.201943	17.868988	0.466281
10/21/2010 10:53	2940.016	0.199943	17.857544	0.461661
10/21/2010 10:54	3000	0.196732	17.846588	0.454247
10/21/2010 10:55	3060	0.194118	17.83371	0.448214
10/21/2010 10:56	3120	0.193091	17.850861	0.445842
10/21/2010 10:57	3180	0.188665	17.844666	0.435622
10/21/2010 10:58	3240	0.187757	17.820343	0.433526
10/21/2010 10:59	3300	0.184909	17.812286	0.426949
10/21/2010 11:00	3360	0.182484	17.840881	0.421349
10/21/2010 11:01	3420	0.259435	17.884216	0.599027
10/21/2010 11:02	3480	0.256769	17.941895	0.592872
10/21/2010 11:03	3540	0.252951	17.994324	0.584055
10/21/2010 11:04	3600	0.25047	18.033417	0.578328
10/21/2010 11:05	3660	0.246705	18.0625	0.569634
10/21/2010 11:06	3720	0.246408	18.085388	0.568947
10/21/2010 11:07	3780	0.242641	18.107361	0.560252
10/21/2010 11:08	3840	0.241193	18.116394	0.556907
10/21/2010 11:09	3900	0.238516	18.125916	0.550726
10/21/2010 11:10	3960	0.243074	18.141174	0.561251
10/21/2010 11:11	4020	0.232209	18.156464	0.536164
10/21/2010 11:12	4080	0.231118	18.166962	0.533645
10/21/2010 11:13	4140	0.22724	18.171234	0.524689
10/21/2010 11:14	4200	0.224995	18.179352	0.519506
10/21/2010 11:15	4260	0.223299	18.176025	0.515591
10/21/2010 11:16	4320	0.21984	18.17984	0.507604
10/21/2010 11:17	4380	0.217413	18.186981	0.502
10/21/2010 11:18	4440	0.216626	18.192261	0.500183
10/21/2010 11:19	4500	0.213959	18.202728	0.494024
10/21/2010 11:20	4560	0.210986	18.211792	0.48716
10/21/2010 11:21	4620.026	0.208736	18.228485	0.481966
10/21/2010 11:22	4680.112	0.206675	18.247101	0.477205
10/21/2010 11:23	4740.2	0.20443	18.273834	0.472022
10/21/2010 11:24	4800.037	0.201392	18.298615	0.465008
10/21/2010 11:25	4860.14	0.199944	18.326782	0.461666
10/21/2010 11:26	4920	0.197576	18.359222	0.456196
10/21/2010 11:27	4980.057	0.270388	18.386414	0.624317

10/21/2010 11:28	5040	0.267293	18.311005	0.617171
10/21/2010 11:29	5100	0.26555	18.301971	0.613146
10/21/2010 11:30	5160	0.26148	18.312439	0.60375
10/21/2010 11:31	5220	0.259235	18.326782	0.598566
10/21/2010 11:32	5280	0.258013	18.34967	0.595743
10/21/2010 11:33	5340.01	0.254805	18.379791	0.588336
10/21/2010 11:34	5400	0.253838	18.403595	0.586103
10/21/2010 11:35	5460	0.250132	18.437073	0.577546
10/21/2010 11:36	5520	0.249343	18.464722	0.575725
10/21/2010 11:37	5580	0.248264	18.491943	0.573235
10/21/2010 11:38	5640	0.244563	18.517242	0.564689
10/21/2010 11:39	5700	0.242374	18.547333	0.559635
10/21/2010 11:40	5760	0.240187	18.571686	0.554584
10/21/2010 11:41	5820	0.236123	18.605591	0.545201
10/21/2010 11:42	5880	0.234723	18.649078	0.541968
10/21/2010 11:43	5940	0.23352	18.694916	0.539189
10/21/2010 11:44	6000	0.229939	18.726929	0.530923
10/21/2010 11:45	6060	0.230484	18.747467	0.53218

Report Date: 11/4/2010 19:02
Report User Name: tgodwin
Report Computer Name: BUTTE-FIELD

Log File Properties

File Name test_1_20101019_211752566.wsl
Create Date 10/19/2010 14:17

Device Properties

Device Level TROLL 700
Site LTA-SI-DR-10
Device Name
Serial Number 148876
Firmware Version 2.08
Hardware Version 3

Log Configuration

Log Name test 1
Created By tgodwin
Computer Name BUTTE-FIELD
Application WinSitu.exe
Application Version 5.6.8.4
Create Date 10/19/2010 10:52
Notes Size(bytes) 4096
Type Linear
Overwrite when full Disabled
Scheduled Start Time Manual Start
Scheduled Stop Time No Stop Time
Interval Days: 0 hrs: 00 mins: 01 secs: 00

Level Reference Settings At Log Creation

Level Measurement Mod Depth
Specific Gravity 0.999

Log Notes:

Date and Time Note
10/19/2010 10:52 Sensor: 148876 Factory calibration has expired.: 7/23/2010 6:43:46 AM
10/19/2010 10:53 Manual Start Command
10/19/2010 14:17 Log Download - Used Battery: 28% Used Memory: 1% Name: tgodwin

Log Data:

Record Count 205

Date and Time	Elapsed Time Seconds	Sensor: Pres 69ft		Sensor: Pres 69ft	
		SN#: 148876		SN#: 148876	
		Pressure (PSI)	Temperature (C)	Depth (ft)	
10/19/2010 10:53		0	0.035419	21.951111	0.081782
10/19/2010 10:54		60	0.035332	22.095367	0.08158
10/19/2010 10:55		120	0.035794	22.259033	0.082648
10/19/2010 10:56		180	0.034613	22.434387	0.07992
10/19/2010 10:57		240	0.03416	22.606415	0.078874
10/19/2010 10:58		300	0.034262	22.771301	0.079109
10/19/2010 10:59		360	0.036015	22.950287	0.083156
10/19/2010 11:00		420	0.035589	23.029175	0.082174
10/19/2010 11:01		480	0.035167	22.975433	0.081199
10/19/2010 11:02		540	0.035238	22.882538	0.081364
10/19/2010 11:03		600	0.034929	22.806122	0.080651
10/19/2010 11:04		660	0.351261	22.495728	0.811051
10/19/2010 11:05		720	0.385488	20.657898	0.890079
10/19/2010 11:06		780	0.380667	19.597595	0.878948
10/19/2010 11:07		840	0.374976	18.977356	0.865808
10/19/2010 11:08		900	0.372734	18.577393	0.860631
10/19/2010 11:09		960	0.368972	18.314362	0.851944
10/19/2010 11:10		1020	0.366857	18.130219	0.84706
10/19/2010 11:11		1080	0.366006	18.011505	0.845096
10/19/2010 11:12		1140	0.365704	17.921906	0.844398
10/19/2010 11:13		1200	0.363949	17.869476	0.840347
10/19/2010 11:14		1260	0.361768	17.832764	0.835311
10/19/2010 11:15		1320	0.358555	17.805603	0.827892
10/19/2010 11:16		1380	0.359617	17.81131	0.830345
10/19/2010 11:17		1440	0.357369	17.810822	0.825155
10/19/2010 11:18		1500	0.35628	17.8237	0.82264
10/19/2010 11:19		1560	0.354825	17.838501	0.81928
10/19/2010 11:20		1620	0.355549	17.870422	0.820951
10/19/2010 11:21		1680	0.352406	17.88089	0.813694
10/19/2010 11:22		1740	0.353071	17.898499	0.81523
10/19/2010 11:23		1800	0.352492	17.918549	0.813894
10/19/2010 11:24		1860	0.35146	17.932861	0.811509
10/19/2010 11:25		1920	0.349736	17.956207	0.80753
10/19/2010 11:26		1980	0.350067	17.981934	0.808294
10/19/2010 11:27		2040	0.350431	18.001038	0.809135
10/19/2010 11:28		2100	0.348793	18.029602	0.805352
10/19/2010 11:29		2160	0.347343	18.053467	0.802005
10/19/2010 11:30		2220	0.345826	18.078247	0.798502
10/19/2010 11:31		2280	0.345972	18.104004	0.798839
10/19/2010 11:32		2340	0.346457	18.126862	0.799957
10/19/2010 11:33		2400	0.344702	18.146454	0.795906
10/19/2010 11:34		2460	0.343246	18.170288	0.792545
10/19/2010 11:35		2520	0.341242	18.191284	0.787917

10/19/2010 11:36	2580	0.341363	18.213226	0.788197
10/19/2010 11:37	2640	0.34084	18.23996	0.78699
10/19/2010 11:38	2700	0.340485	18.265686	0.786168
10/19/2010 11:39	2760	0.339628	18.293396	0.784191
10/19/2010 11:40	2820	0.338968	18.320587	0.782667
10/19/2010 11:41	2880	0.339324	18.348724	0.783489
10/19/2010 11:42	2940	0.338479	18.373077	0.781538
10/19/2010 11:43	3000	0.336358	18.395538	0.77664
10/19/2010 11:44	3060	0.336909	18.422241	0.777913
10/19/2010 11:45	3120	0.33521	18.449463	0.773989
10/19/2010 11:46	3180	0.334808	18.474762	0.773062
10/19/2010 11:47	3240	0.33475	18.499603	0.772928
10/19/2010 11:48	3300	0.333291	18.530121	0.769559
10/19/2010 11:49	3360	0.332987	18.561188	0.768856
10/19/2010 11:50	3420	0.332833	18.590332	0.768502
10/19/2010 11:51	3480.009	0.331682	18.62561	0.765844
10/19/2010 11:52	3540.096	0.332163	18.662903	0.766954
10/19/2010 11:53	3600.184	0.331223	18.692505	0.764783
10/19/2010 11:54	3660.021	0.330167	18.728851	0.762345
10/19/2010 11:55	3720.109	0.330467	18.763245	0.763039
10/19/2010 11:56	3780.196	0.331584	18.799561	0.765617
10/19/2010 11:57	3840.025	0.329523	18.841125	0.760859
10/19/2010 11:58	3900.114	0.328434	18.876953	0.758344
10/19/2010 11:59	3960	0.328309	18.882233	0.758055
10/19/2010 12:00	4020	0.327188	18.916656	0.755466
10/19/2010 12:01	4080	0.325099	18.95108	0.750643
10/19/2010 12:02	4140	0.326551	18.984985	0.753997
10/19/2010 12:03	4200	0.325213	19.024719	0.750908
10/19/2010 12:04	4260	0.325665	19.062042	0.751952
10/19/2010 12:05	4320	0.323419	19.103149	0.746764
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10/19/2010 12:07	4440	0.324753	19.177765	0.749844
10/19/2010 12:08	4500	0.324694	19.219391	0.749708
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10/19/2010 12:10	4620	0.324207	19.304077	0.748585
10/19/2010 12:11	4680	0.32229	19.345245	0.744159
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10/19/2010 12:15	4920.001	0.321649	19.517609	0.742677
10/19/2010 12:16	4980	0.319771	19.563568	0.738341
10/19/2010 12:17	5040	0.320888	19.607635	0.740919
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10/19/2010 12:20	5220	0.319217	19.740875	0.737062
10/19/2010 12:21	5280	0.316058	19.789246	0.729769
10/19/2010 12:22	5340	0.317268	19.832367	0.732563

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10/19/2010 12:26	5580	0.317355	20.014557	0.732763
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10/19/2010 12:30	5820	0.39504	20.179108	0.912134
10/19/2010 12:31	5880	0.394239	20.194458	0.910287
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10/19/2010 12:33	6000	0.39229	20.218964	0.905786
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10/19/2010 12:35	6120	0.39398	20.244415	0.909688
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10/19/2010 12:37	6240	0.389912	20.278473	0.900294
10/19/2010 12:38	6300	0.391311	20.297668	0.903524
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10/19/2010 12:41	6480	0.389957	20.337067	0.9004
10/19/2010 12:42	6540	0.388264	20.346619	0.896489
10/19/2010 12:43	6600	0.387288	20.367279	0.894236
10/19/2010 12:44	6660	0.385938	20.37735	0.891118
10/19/2010 12:45	6720	0.388072	20.393219	0.896046
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10/19/2010 12:47	6840	0.386365	20.428284	0.892105
10/19/2010 12:48	6900.01	0.385752	20.449371	0.890689
10/19/2010 12:49	6960.097	0.385085	20.467163	0.88915
10/19/2010 12:50	7020.185	0.384656	20.488281	0.888159
10/19/2010 12:51	7080.014	0.383129	20.521912	0.884633
10/19/2010 12:52	7140	0.382828	20.508972	0.883937
10/19/2010 12:53	7200	0.386301	20.530548	0.891957
10/19/2010 12:54	7260	0.382216	20.556488	0.882526
10/19/2010 12:55	7320	0.382771	20.575256	0.883805
10/19/2010 12:56	7380	0.381364	20.595886	0.880557
10/19/2010 12:57	7440	0.380989	20.62088	0.879692
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10/19/2010 12:59	7560	0.378368	20.66748	0.873641
10/19/2010 13:00	7620	0.380317	20.69104	0.878139
10/19/2010 13:01	7680	0.385489	20.715515	0.890083
10/19/2010 13:02	7740	0.378672	20.736694	0.874341
10/19/2010 13:03	7800	0.378121	20.764557	0.87307
10/19/2010 13:04	7860	0.377556	20.790039	0.871765
10/19/2010 13:05	7920	0.379143	20.816956	0.875429
10/19/2010 13:06	7980	0.376826	20.847229	0.87008
10/19/2010 13:07	8040	0.375914	20.876099	0.867973
10/19/2010 13:08	8100	0.374019	20.902039	0.863598
10/19/2010 13:09	8160	0.37567	20.927094	0.867411

10/19/2010 13:10	8220	0.373958	20.942474	0.863457
10/19/2010 13:11	8280	0.374509	20.972778	0.864729
10/19/2010 13:12	8340	0.37293	21.002594	0.861083
10/19/2010 13:13	8400	0.372683	21.038666	0.860513
10/19/2010 13:14	8460	0.372439	21.073792	0.859951
10/19/2010 13:15	8520	0.37352	21.108429	0.862446
10/19/2010 13:16	8580	0.371507	21.1474	0.857798
10/19/2010 13:17	8640	0.371936	21.186859	0.858788
10/19/2010 13:18	8700	0.370896	21.22345	0.856388
10/19/2010 13:19	8760	0.369744	21.261993	0.853728
10/19/2010 13:20	8820	0.369421	21.300018	0.852982
10/19/2010 13:21	8880	0.37052	21.337067	0.855518
10/19/2010 13:22	8940	0.368447	21.376099	0.850733
10/19/2010 13:23	9000	0.367529	21.412689	0.848613
10/19/2010 13:24	9060	0.36784	21.452179	0.849331
10/19/2010 13:25	9120	0.365639	21.492157	0.844248
10/19/2010 13:26	9180	0.364891	21.530701	0.842522
10/19/2010 13:27	9240	0.366178	21.581299	0.845493
10/19/2010 13:28	9300	0.365977	21.625641	0.84503
10/19/2010 13:29	9360	0.366101	21.673828	0.845316
10/19/2010 13:30	9420	0.364149	21.715302	0.840809
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10/19/2010 13:33	9600	0.36224	21.840149	0.836401
10/19/2010 13:34	9660	0.362424	21.885986	0.836825
10/19/2010 13:35	9720	0.361264	21.929382	0.834148
10/19/2010 13:36	9780	0.361192	21.972809	0.833981
10/19/2010 13:37	9840	0.360394	22.013306	0.83214
10/19/2010 13:38	9900	0.360699	22.061127	0.832842
10/19/2010 13:39	9960	0.35905	22.106964	0.829035
10/19/2010 13:40	10020	0.359227	22.148926	0.829444
10/19/2010 13:41	10080	0.356046	22.192413	0.822099
10/19/2010 13:42	10140	0.357452	22.234375	0.825346
10/19/2010 13:43	10200	0.357009	22.28125	0.824323
10/19/2010 13:44	10260	0.357548	22.324219	0.825567
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10/19/2010 13:48	10500	0.354675	22.496674	0.818934
10/19/2010 13:49	10560	0.355518	22.540192	0.820881
10/19/2010 13:50	10620	0.352955	22.584686	0.814962
10/19/2010 13:51	10680	0.354648	22.631042	0.81887
10/19/2010 13:52	10740	0.352877	22.674103	0.814781
10/19/2010 13:53	10800	0.352447	22.721008	0.813788
10/19/2010 13:54	10860	0.350924	22.764526	0.810274
10/19/2010 13:55	10920	0.3503	22.80658	0.808831
10/19/2010 13:56	10980	0.349615	22.851593	0.80725

10/19/2010 13:57	11040	0.350529	22.893677	0.80936
10/19/2010 13:58	11100	0.349313	22.935272	0.806552
10/19/2010 13:59	11160	0.348685	22.977844	0.805103
10/19/2010 14:00	11220	0.348866	23.020416	0.80552
10/19/2010 14:01	11280	0.354421	23.057739	0.818346
10/19/2010 14:02	11340	0.347939	23.100342	0.803379
10/19/2010 14:03	11400	0.34702	23.139069	0.801259
10/19/2010 14:04	11460	0.346334	23.177338	0.799673
10/19/2010 14:05	11520	0.346274	23.217499	0.799537
10/19/2010 14:06	11580	0.347317	23.255737	0.801944
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10/19/2010 14:09	11760	0.34412	23.362823	0.794562
10/19/2010 14:10	11820	0.343987	23.395264	0.794254
10/19/2010 14:11	11880	0.344105	23.431122	0.794527
10/19/2010 14:12	11940	0.343374	23.460724	0.79284
10/19/2010 14:13	12000	0.342384	23.4888	0.790555
10/19/2010 14:14	12060	0.341407	23.515015	0.788298
10/19/2010 14:15	12120	0.341637	23.537292	0.788828
10/19/2010 14:16	12180	0.340843	23.566345	0.786996
10/19/2010 14:17	12240	0.340285	23.591095	0.785708

Report Date: 6/21/2012 9:38
Report User Name: tgodwin
Report Computer Name: BUTTE-FIELD
Application: WinSitu.exe
Application Version: 5.6.21.0

Log File Properties

File Name Infiltration Test 2_2011-12-15_13-26-45-251.wsl
Create Date 12/15/2011 13:26

Device Properties

Device Level TROLL 700
Site MillCrkInft.Inner
Device Name
Serial Number 149638
Firmware Version 2.08
Hardware Version 3
Device Address 1
Device Comm Cfg 19200 8 Even 1
Used Memory 3
Used Battery 24

Log Configuration

Log Name Infiltration Test 2
Created By tgodwin
Computer Name BUTTE-FIELD
Application WinSitu.exe
Application Version 5.6.21.0
Create Date 12/15/2011 12:32:48 PM Pacific Standard Time
Log Setup Time Zone Pacific Standard Time
Notes Size(bytes) 4096
Overwrite when full Disabled
Scheduled Start Time Manual Start
Scheduled Stop Time No Stop Time
Type Linear
Interval Days: 0 hrs: 00 mins: 01 secs: 00

Level Reference Settings At Log Creation

Level Measurement Moc Depth
Specific Gravity 0.999

Other Log Settings

Depth of Probe: 0.0875979 (ft)

Head Pressure: 0.0379381 (PSI)
 Temperature: 58.5618 (F)

Log Notes:

Date and Time	Note
12/15/2011 12:32	Sensor SN: 149638 Factory calibration has expired.: 8/12/2010 11:27:14 AM
12/15/2011 12:32	Used Battery: 24% Used Memory: 4% User Name: tgodwin
12/15/2011 12:33	Manual Start Command
12/15/2011 13:26	Used Battery: 24% Used Memory: 4% User Name: tgodwin
12/15/2011 13:26	Manual Stop Command

Log Data:

Record Count	54
Sensors	1
	1 149638 Pressure/Temp 30 PSIG (21m/69ft)

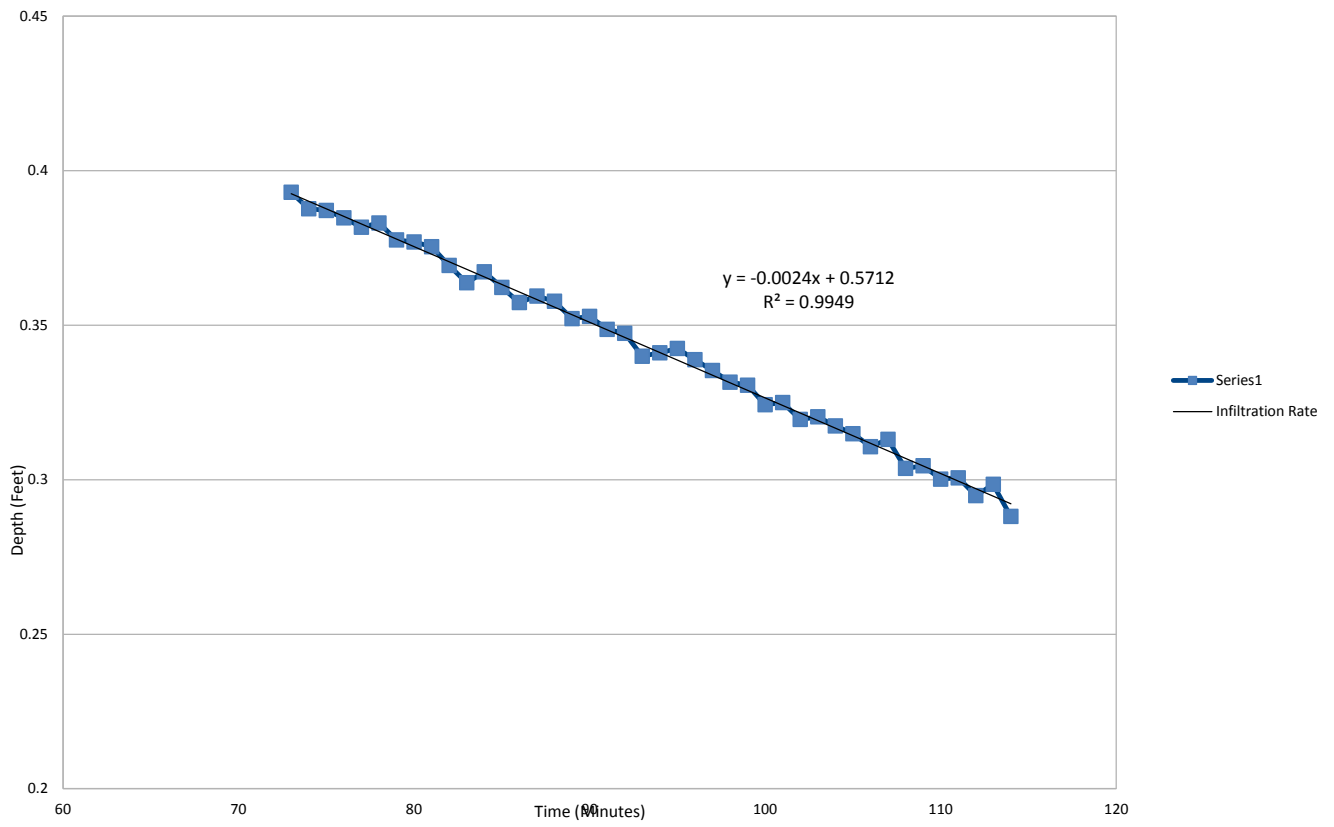
Time Zone: Pacific Standard Time

Date and Time	Elapsed Time Seconds	Sensor: Pres(G) 69ft	Sensor: Pres(G) 69ft	Sensor: Pres(G) 69ft
		SN#: 149638 Pressure (PSI)	SN#: 149638 Temperature (F)	SN#: 149638 Depth (ft)
12/15/2011 12:33	0	0.043	58.94	0.1
12/15/2011 12:34	60	0.055	59.911	0.127
12/15/2011 12:35	120	0.073	59.641	0.169
12/15/2011 12:36	180	0.07	58.933	0.163
12/15/2011 12:37	240	0.329	56.958	0.76
12/15/2011 12:38	300	0.522	52.364	1.204
12/15/2011 12:39	360	0.526	49.35	1.215
12/15/2011 12:40	420	0.606	47.334	1.4
12/15/2011 12:41	480	0.599	45.989	1.382
12/15/2011 12:42	540	0.607	45.084	1.402
12/15/2011 12:43	600	0.604	44.43	1.394
12/15/2011 12:44	660	0.599	43.97	1.383
12/15/2011 12:45	720	0.596	43.635	1.375
12/15/2011 12:46	780	0.592	43.388	1.367
12/15/2011 12:47	840	0.588	43.207	1.357
12/15/2011 12:48	900	0.583	43.077	1.345
12/15/2011 12:49	960	0.578	42.974	1.334
12/15/2011 12:50	1020	0.572	42.899	1.322
12/15/2011 12:51	1080	0.567	42.833	1.309
12/15/2011 12:52	1140	0.561	42.791	1.295
12/15/2011 12:53	1200	0.557	42.754	1.285

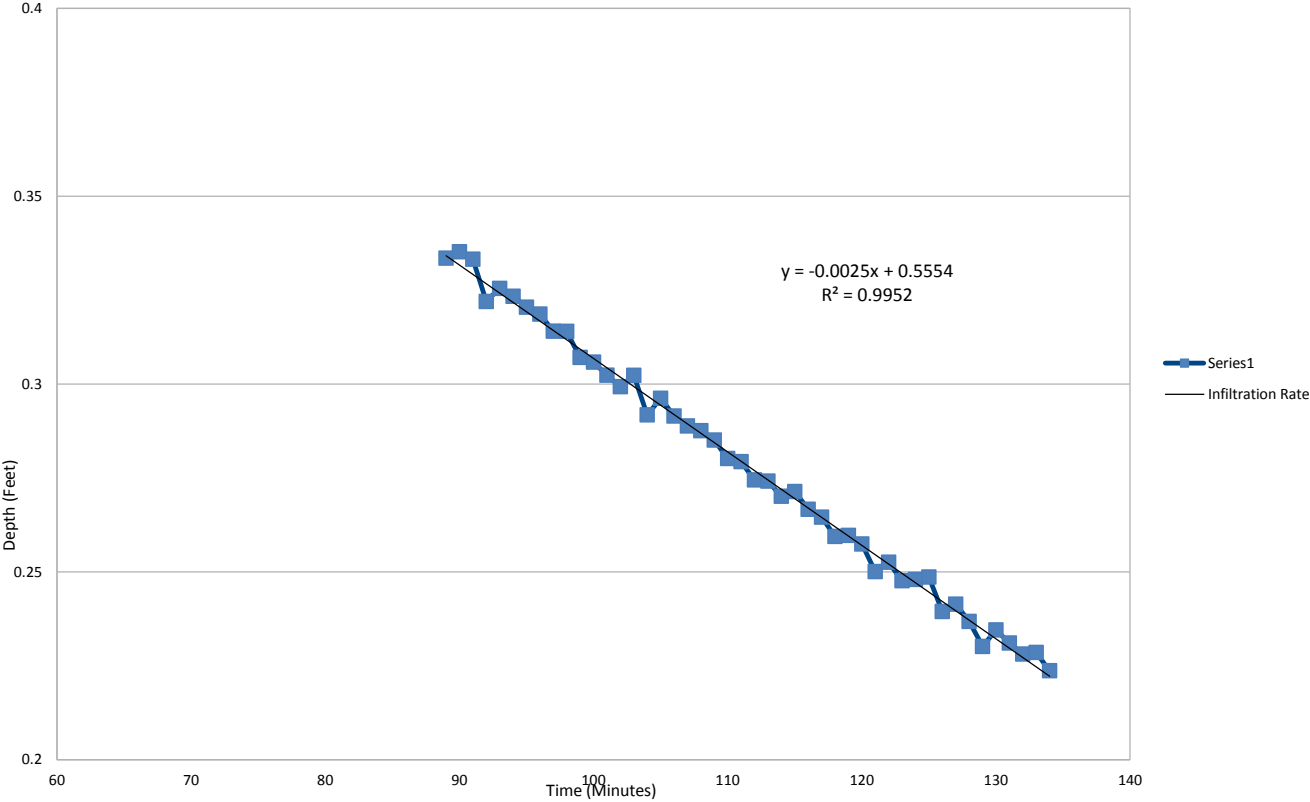
12/15/2011 12:54	1260	0.55	42.731	1.27
12/15/2011 12:55	1320	0.546	42.715	1.26
12/15/2011 12:56	1380	0.54	42.703	1.246
12/15/2011 12:57	1440	0.533	42.69	1.231
12/15/2011 12:58	1500	0.53	42.682	1.224
12/15/2011 12:59	1560	0.523	42.672	1.208
12/15/2011 13:00	1620	0.516	42.672	1.192
12/15/2011 13:01	1680	0.511	42.667	1.179
12/15/2011 13:02	1740	0.507	42.667	1.17
12/15/2011 13:03	1800	0.502	42.662	1.159
12/15/2011 13:04	1860	0.495	42.665	1.144
12/15/2011 13:05	1920	0.49	42.662	1.131
12/15/2011 13:06	1980	0.484	42.665	1.118
12/15/2011 13:07	2040	0.477	42.657	1.102
12/15/2011 13:08	2100	0.472	42.662	1.091
12/15/2011 13:09	2160	0.61	42.698	1.408
12/15/2011 13:10	2220	0.62	42.742	1.431
12/15/2011 13:11	2280	0.613	42.786	1.416
12/15/2011 13:12	2340	0.606	42.801	1.398
12/15/2011 13:13	2400	0.604	42.819	1.394
12/15/2011 13:14	2460	0.601	42.836	1.387
12/15/2011 13:15	2520	0.597	42.843	1.379
12/15/2011 13:16	2580	0.593	42.855	1.369
12/15/2011 13:17	2640	0.589	42.86	1.359
12/15/2011 13:18	2700	0.584	42.869	1.348
12/15/2011 13:19	2760	0.58	42.868	1.339
12/15/2011 13:20	2820	0.61	42.871	1.408
12/15/2011 13:21	2880	0.582	42.888	1.343
12/15/2011 13:22	2940	0.551	42.91	1.272
12/15/2011 13:23	3000	0.042	43.018	0.096
12/15/2011 13:24	3060	0.041	43.795	0.096
12/15/2011 13:25	3120	0.042	44.608	0.097
12/15/2011 13:26	3180	0.042	45.238	0.096

Infiltration Test Plots

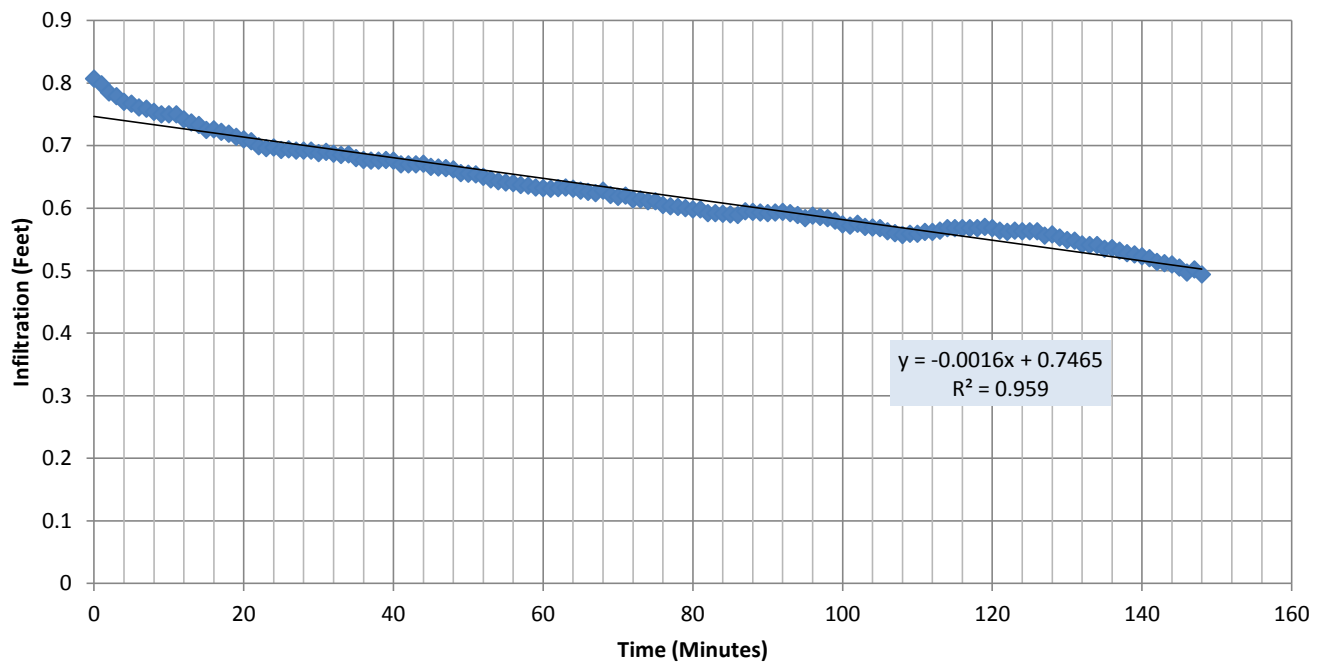
SI-DR-1 Infiltration Rate



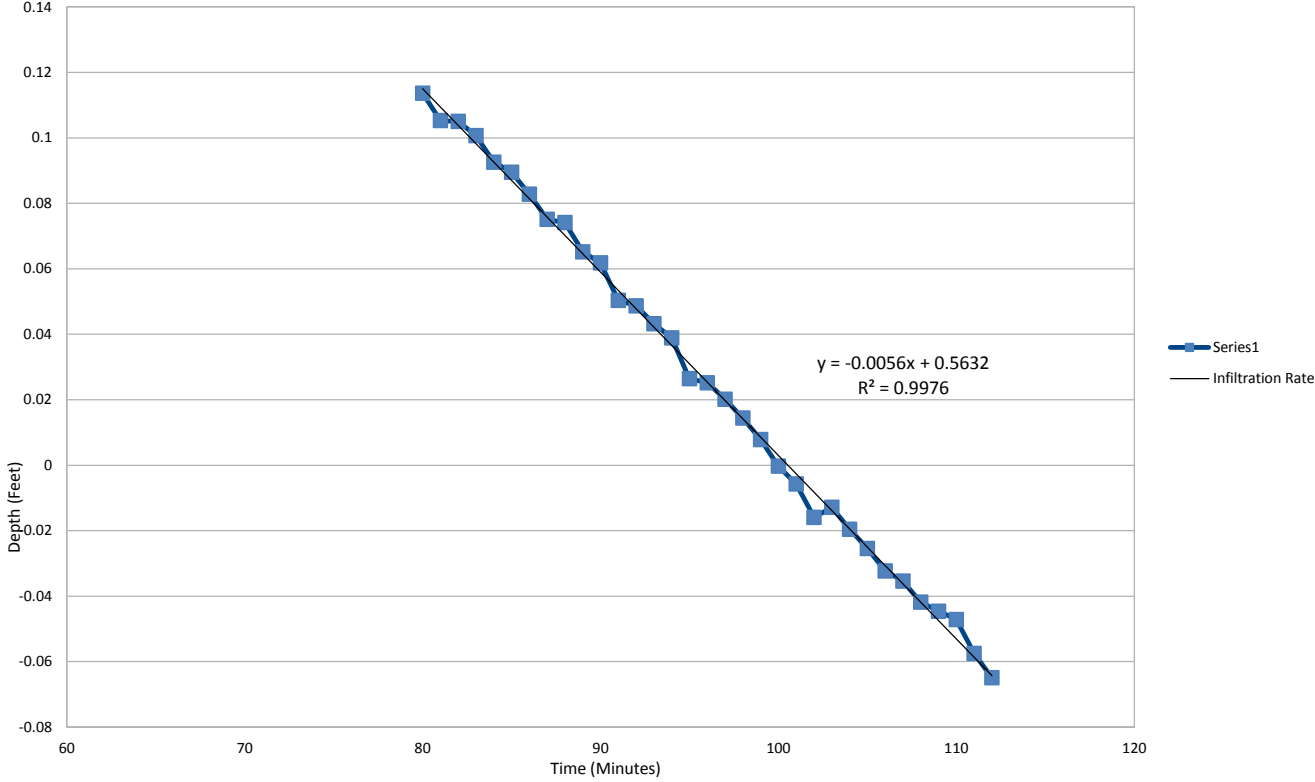
SI-DR-2 Infiltration Rate



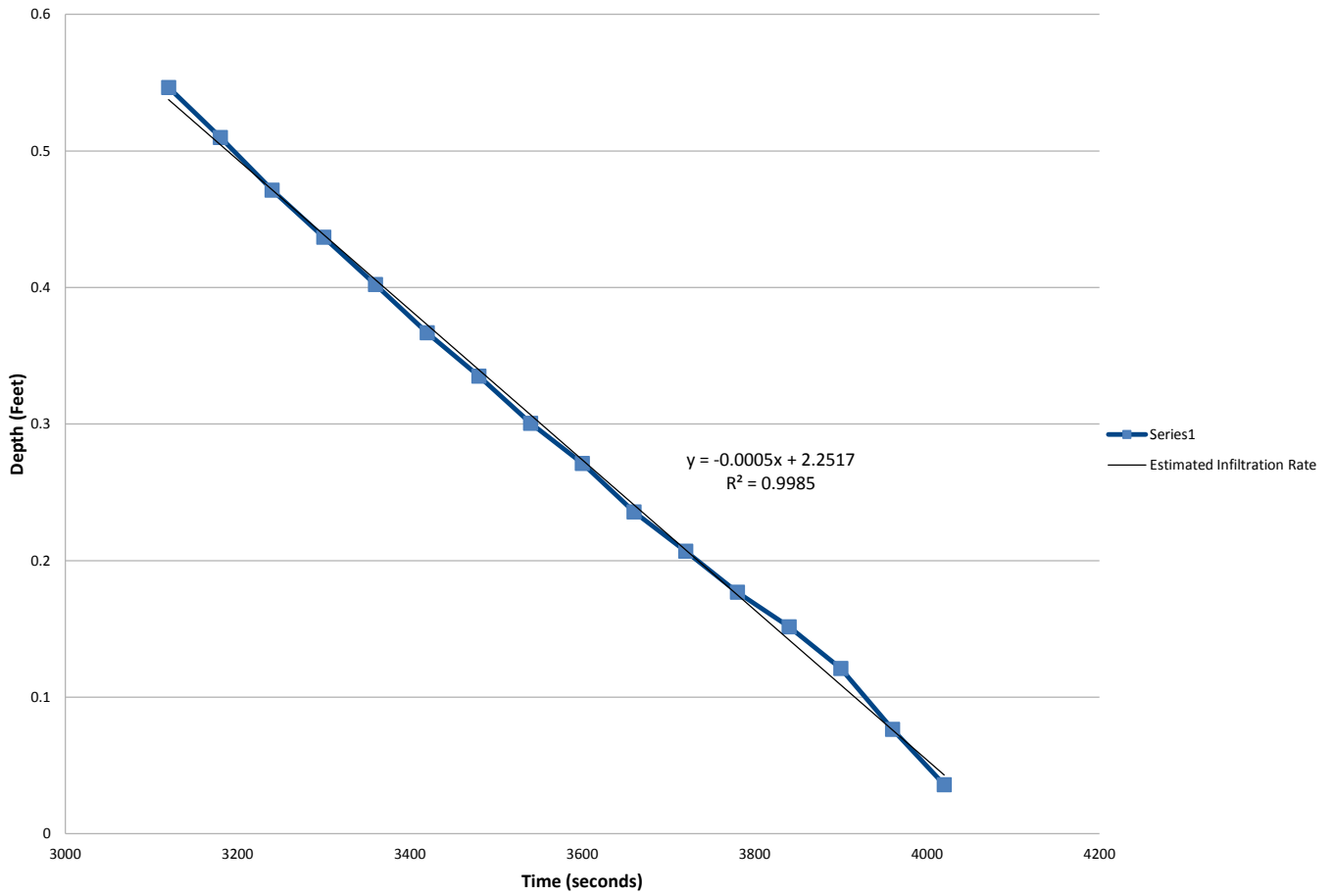
LTA-SI-DR-3



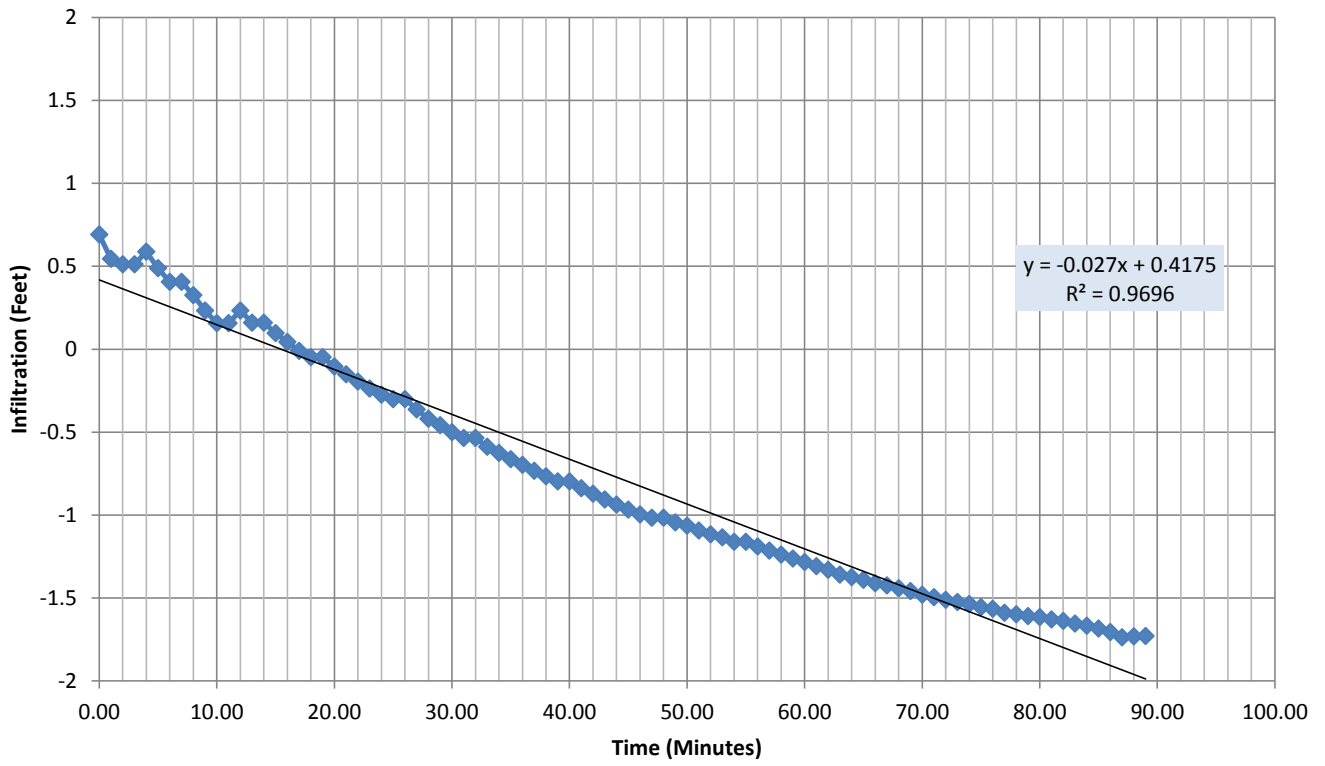
SI-DR-4 Infiltration Rate



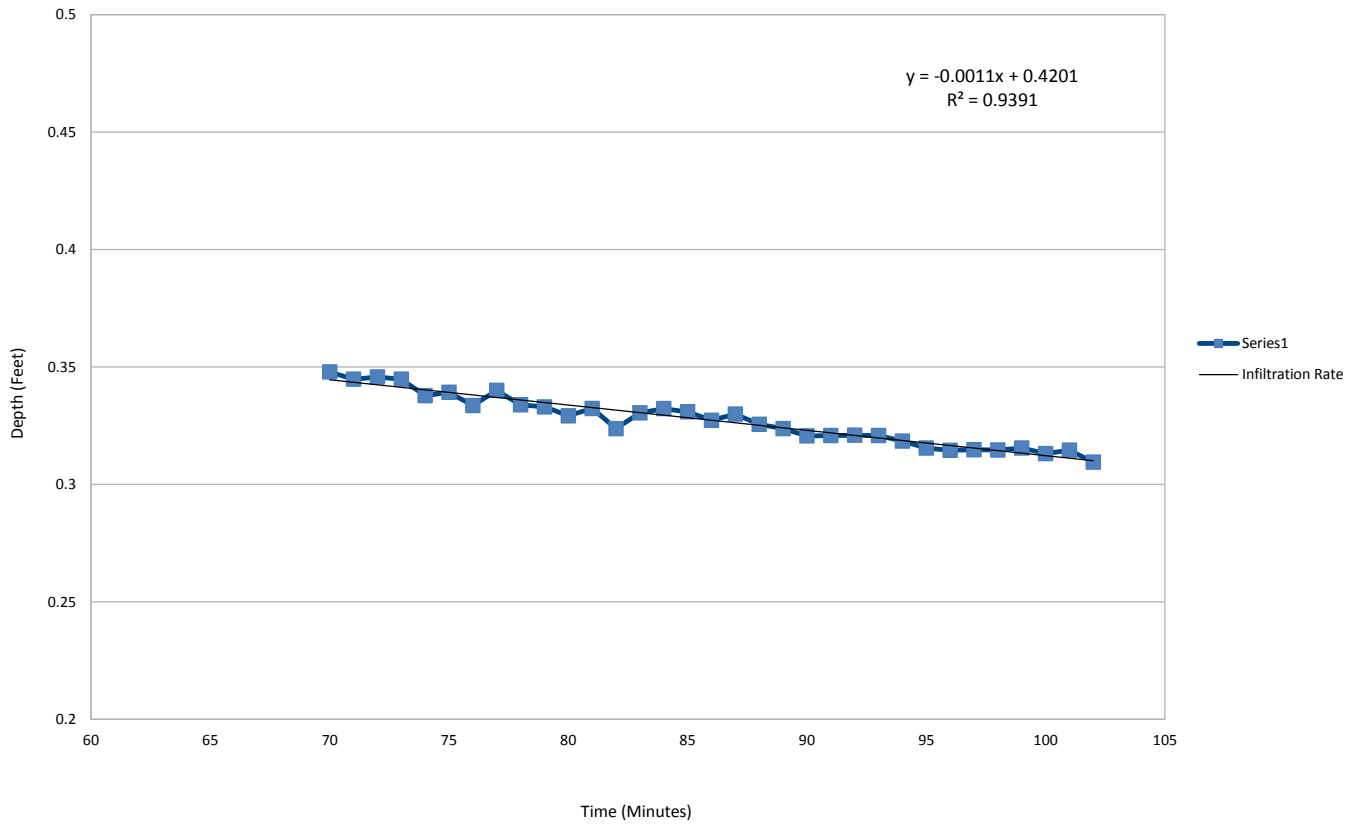
SI-DR-5 Raw Data



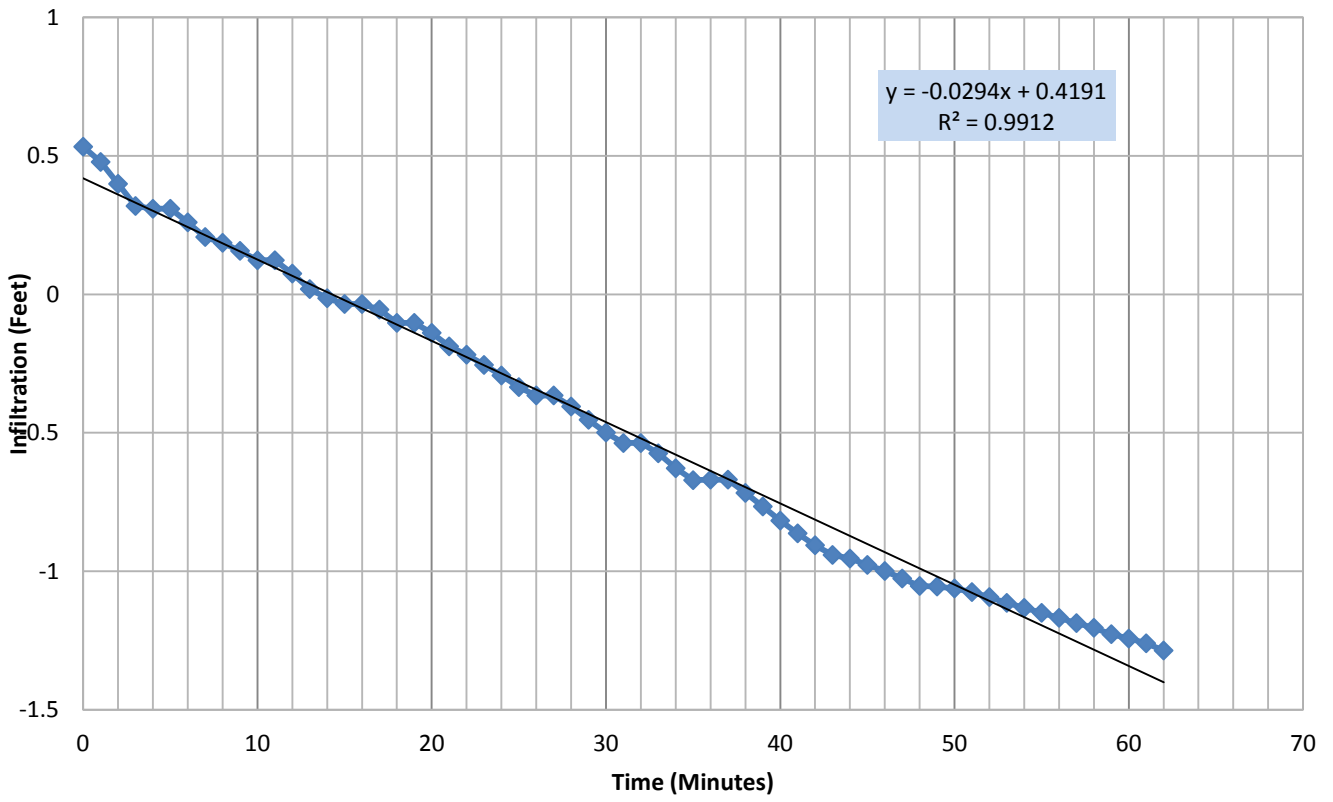
SI-DR-6



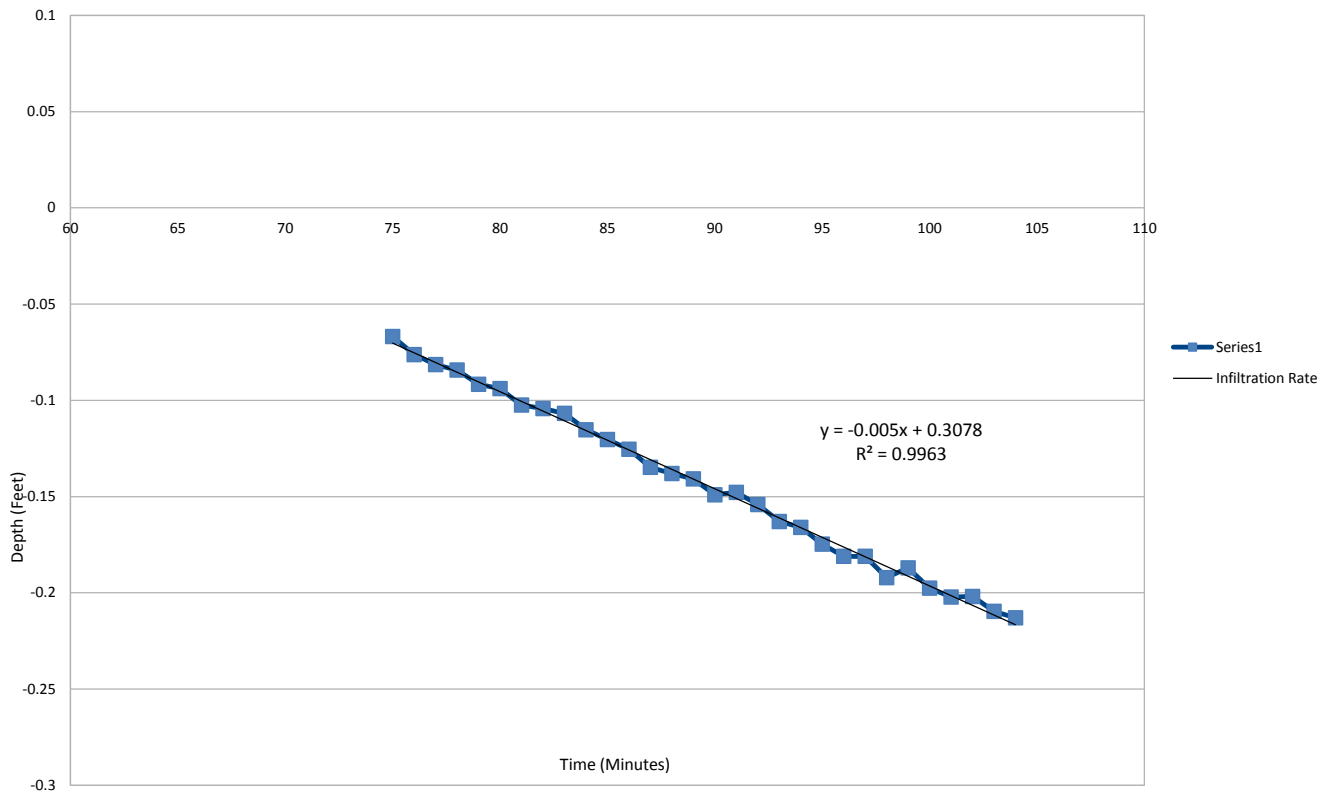
SI-DR-7 Infiltration Rate



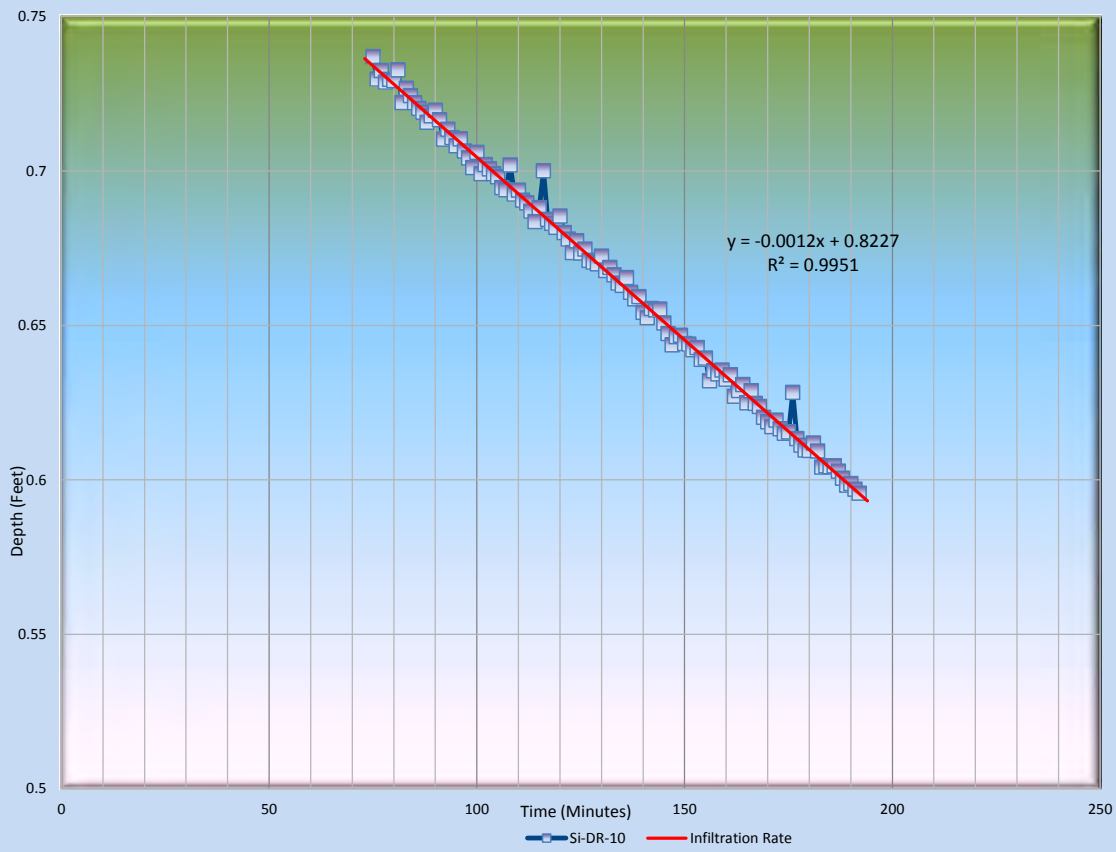
LTA-SI-DR-8



SI-DR-9 Infiltration Rate

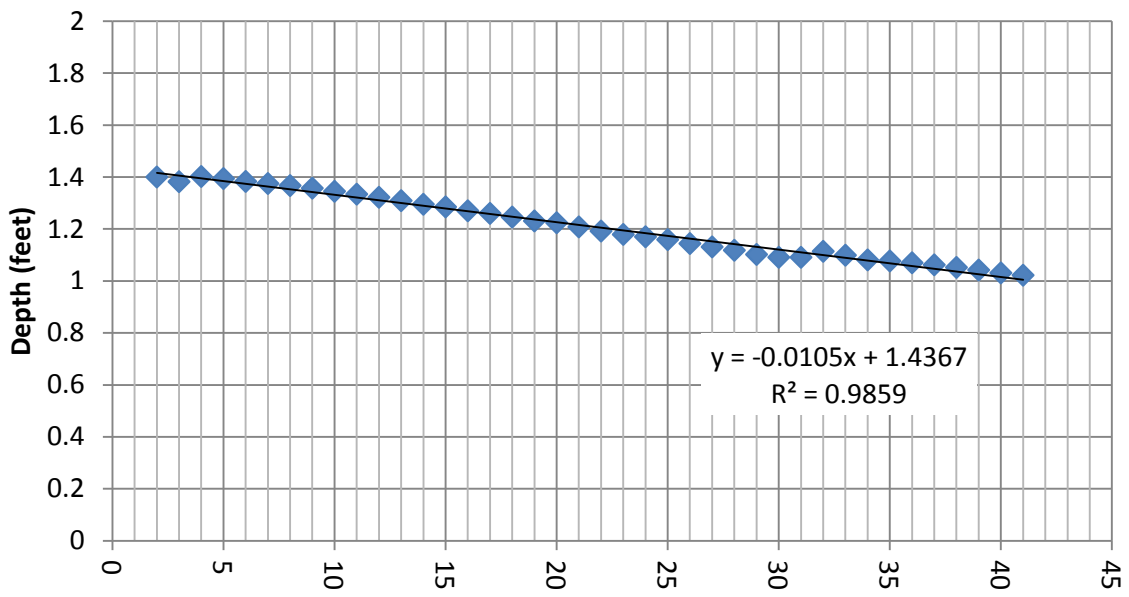


SI-DR-10 Infiltration Rate



Infiltration Rate
0.072 feet/hour
0.864 inches/hour

LTA-SI-DR-11



Appendix C: Well Permits



PHYLLIS L. MURDOCK, DIRECTOR
MARK A. LUNDBERG, M.D., M.P.H., HEALTH OFFICER

WWW.BUTTECOUNTY.NET/PUBLICHEALTH

ENVIRONMENTAL HEALTH DIVISION

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WP 000007
AUG 26 2010

APPLICATION FOR ENVIRONMENTAL INVESTIGATION WELL PERMIT or
AUTHORITY TO CONSTRUCT ENVIRONMENTAL INVESTIGATION SOIL BORING

New Well Soil Boring Destruction Well or Soil Boring ID # State ID to be determined
AW-HKT-1

Well Location: 235 GAIA WAY, Chico, CA Cross Street: Hwy 99 APN: 047-070-027-000
Township: 23N Range: 1W Section: 3

Owner Name: Paul Gossewin - Butte County Dept. Water Resource Conservation Telephone No. 530-538-4343

Owner Mailing Address: 308 Nelson Ave., Oroville, CA Zip 95965

C-57 Contractor: WDC Explorations & Wells Telephone No. 530-662-2829

C-57 Mailing Address: 9580 County Rd. 93B, Zamora, CA Zip 95698 License #: C-57 283326

Consultant Name: Tim Godwin - Brown and Caldwell Telephone No. 916-853-5370 / 916-396-8858

Consultant Mailing Address: 10540 White Rock Rd. #180, Rancho Cordova, CA Zip 95670

TYPE OF WELL/BORING
 Monitoring Dual Phase Extraction Soil Boring
 GW Extraction Air/Ozone Sparge
 Vapor Extraction Other (CPT, Geoprobe, Hydropunch)

CONSTRUCTION SPECIFICATIONS
Boring Depth ~550 ft bgs
Diameter of Borehole 12-inch
Well Casing Diameter 2-inch
Multiple Casings (#) 3

Comments: _____

NOTE: PERMIT APPLICATION SHALL INCLUDE ALL REQUIRED SUBMITTALS AND PERMITTEE SHALL FOLLOW ALL REQUIRED PERMIT CONDITIONS LISTED ON THE BACK OF THE PERMIT APPLICATION. PERMIT EXPIRES ONE (1) YEAR FROM DATE ISSUED.

I hereby certify that I have prepared this application and that the work will be done in accordance with Butte County Ordinances, Rules, and Regulations and all applicable California State Laws.

Signed X Tim Godwin Title/Company Senior Hydrogeologist - Brown and Caldwell

Print Name Tim Godwin Date 8/5/10

DEPARTMENT USE ONLY

Application Approved By: [Signature] Date issued: 8/24/10

Grout Inspection By: _____ Date: _____ Well Final Approval: _____ Date: _____

Destruction Inspection: _____ Date: _____ DWR Well Log Receipt Date: _____

C-57 WC -Waiver C-57 Letter of Authorization Encroachment Document

Fees Received \$158 / 3/5 Receipt # 510102/510157 Date Paid 8/3/10/8/23/10 Received by MA / MA

Call Time/Call Date/Seal ID# _____ / _____ / _____ Date/Time Ready _____ / _____

C:\Documents and Settings\godwin\Local Settings\Temporary Internet Files\Content.Outlook\F849X2X2\Environmental Monitoring Well_Soil Boring

TEL- 530.538.7281 202 MIRA LOMA DRIVE
FAX- 530.538.5339 OROVILLE, CA 95965

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PHYLLIS L. MURDOCK, DIRECTOR
MARK A. LUNDBERG, M.D., M.P.H., HEALTH OFFICER

RECEIVED
AUG 26 2010

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ENVIRONMENTAL HEALTH DIVISION

APPLICATION FOR ENVIRONMENTAL INVESTIGATION WELL PERMIT or
AUTHORITY TO CONSTRUCT ENVIRONMENTAL INVESTIGATION SOIL BORING

New Well Soil Boring Destruction Well or Soil Boring ID # State ID to be determined
MW-CSU-1

Well Location: CSUCHICO FARMS 311 Nicholas Shoptens LN., CHICO, CA / HEGAN LN. APN: 039-220-017-000
Township: 21N Range: 1E Section: 13

Owner Name: Paul Gosselin - Butte County Dept. Water and Resource Conservation Telephone No. 530-538-4343
Owner Mailing Address: 308 Nelson Ave, Oroville CA Zip 95965

C-57 Contractor: WDC Explorations & Wells Telephone No. 530-662-2829

C-57 Mailing Address: 9580 County Rd. 93B, Zamora, CA Zip 95698 License #: C-57 283326

Consultant Name: Tim Godwin - Brown and Caldwell Telephone No. 916-853-5307 / 916-396-8358

Consultant Mailing Address: 10540 White Rock Rd. #180, Rancho Cordova, CA Zip 95670

TYPE OF WELL/BORING

- Monitoring Dual Phase Extraction Soil Boring
- GW Extraction Air/Ozone Sparge
- Vapor Extraction Other (CPT, Geoprobe, Hydropunch)

CONSTRUCTION SPECIFICATIONS

Boring Depth: ~650 ft bgs.
Diameter of Borehole: 12 inch
Well Casing Diameter: 2 inch
Multiple Casings (#): 3

Comments: _____

NOTE: PERMIT APPLICATION SHALL INCLUDE ALL REQUIRED SUBMITTALS AND PERMITTEE SHALL FOLLOW ALL REQUIRED PERMIT CONDITIONS LISTED ON THE BACK OF THE PERMIT APPLICATION. PERMIT EXPIRES ONE (1) YEAR FROM DATE ISSUED.

I hereby certify that I have prepared this application and that the work will be done in accordance with Butte County Ordinances, Rules, and Regulations and all applicable California State Laws.

Signed X Tim Godwin Title/Company Senior Hydrogeologist Brown and Caldwell
Print Name Tim Godwin Date 8/5/10

DEPARTMENT USE ONLY

Application Approved By: [Signature] Date issued: 8/11/10

Grout Inspection By: _____ Date: _____ Well Final Approval: _____ Date: _____

Destruction Inspection: _____ Date: _____ DWR Well Log Receipt Date: _____

C-57 WC -Waiver _____ C-57 Letter of Authorization Encroachment Document

Fees Received 473.00 Receipt # 510102 Date Paid 8/13/10 Received by ma

Call Time/Call Date/Seal ID# _____ / _____ / _____ Date/Time Ready _____ / _____

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PHYLLIS L. MURDOCK, DIRECTOR
MARK A. LUNDBERG, M.D., M.P.H., HEALTH OFFICER

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ENVIRONMENTAL HEALTH DIVISION

APPLICATION FOR ENVIRONMENTAL INVESTIGATION WELL PERMIT or
AUTHORITY TO CONSTRUCT ENVIRONMENTAL INVESTIGATION SOIL BORING

New Well Soil Boring Destruction Well or Soil Boring ID # State ID to be determined
MW - MET-1

Well Location: M&T Ranch Cross Street: 3964 Chico River Rd., Chico, CA APN: 039-530-018-000

Township: 21 N Range: 1 W Section:

Owner Name: Paul Gosselin - Butte County Dept. Water & Resource Conservation Telephone No. 530-538-4343

Owner Mailing Address: 308 Nelson Ave, Oroville, CA Zip 95965

C-57 Contractor: WDC Exploration & Wells Telephone No. 530-662-2829

C-57 Mailing Address: 9580 County Rd. 938, Zamora, CA Zip 95698 License #: C-57 283326

Consultant Name: Tim Godwin - Brown and Caldwell Telephone No. 916-853-5370 / 916-396-8858

Consultant Mailing Address: 10740 White Rock Rd., Rancho Cordova, CA Zip 95670

TYPE OF WELL/BORING

- Monitoring
- GW Extraction
- Vapor Extraction
- Dual Phase Extraction
- Air/Ozone Sparge
- Other (CPT, Geoprobe, Hydropunch)
- Soil Boring

CONSTRUCTION SPECIFICATIONS

- Boring Depth: ~850 ft bgs
- Diameter of Borehole: 12-inch
- Well Casing Diameter: 2-inch
- Multiple Casings (#): 3

Comments: _____

NOTE: PERMIT APPLICATION SHALL INCLUDE ALL REQUIRED SUBMITTALS AND PERMITTEE SHALL FOLLOW ALL REQUIRED PERMIT CONDITIONS LISTED ON THE BACK OF THE PERMIT APPLICATION. PERMIT EXPIRES ONE (1) YEAR FROM DATE ISSUED.

I hereby certify that I have prepared this application and that the work will be done in accordance with Butte County Ordinances, Rules, and Regulations and all applicable California State Laws.

Signed X Tim Godwin Title/Company Senior Hydrogeologist Brown and Caldwell
Print Name Tim Godwin Date 8/5/10

DEPARTMENT USE ONLY

Application Approved By: [Signature] Date issued: 8/11/10

Grout Inspection By: _____ Date: _____ Well Final Approval: _____ Date: _____

Destruction Inspection: _____ Date: _____ DWR Well Log Receipt Date: _____

C-57 WC -Waiver _____ C-57 Letter of Authorization _____ Encroachment Document

Fees Received 8/3/10 473.00 Receipt # 510102 Date Paid 8/3/10 Received by MA

Call Time/Call Date/Seal ID# _____ / _____ / _____ Date/Time Ready _____ / _____

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TEL- 530.538.7281 202 MIRA LOMA DRIVE
FAX- 530.538.5339 OROVILLE, CA 95965

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Appendix D: Drilling Method Profiles

The Air Rotary Casing Hammer System (ARCH) consists of a non-rotating flush-threaded casing driven in conjunction with a conventional air rotary drill string. Cuttings are cleared from the hole by the bit rotation and air circulation. The material is discharged through a hose into a cyclone, which separates the air from the formation cuttings to facilitate sampling and drill cuttings containment. The advanced drive casing is a heavy wall flush-threaded pipe. Six diameters are available to accommodate different well diameters and depth requirements. The casing is driven with a pneumatic or hydraulic drill-through casing hammer, which is rated up to 9700 foot-pounds of energy.

Upon completion of drilling, the drill rod and bit are extracted from the center of the drive casing to allow the installation of permanent well construction materials. A hydraulic casing puller rated up to 250 tons extracts the drive casing. After the well casing is placed, the sand, bentonite pellets, and cement are installed in the annulus as the drive casing is pulled.

Primary Benefits

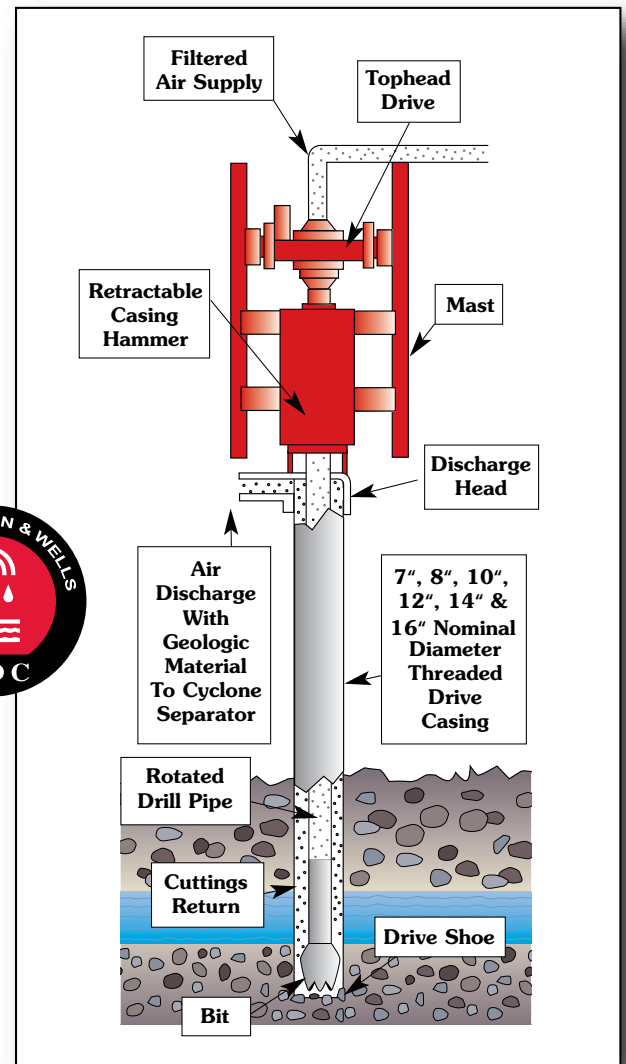
Eliminates the need to set cemented-in conductor casing in upper aquifers in order to drill into lower aquifers.

The flush-threaded drive casing seals off formations in the borehole as drilling progresses, eliminating the potential for cross contamination of the aquifers.

Eliminates the need for drilling fluids.

The casing can be driven to a specified depth allowing continued borehole advancement with direct air/mud rotary methods.

Depth discreet water, vapor, and soil samples can be taken at selected intervals.



CASING HAMMER air rotary

Drill cuttings discharged from the cyclone provide representative stratigraphy while drilling progresses.

Drills through most geologic formations and is superior over other methods in conglomerate.

Provides a clean borehole for well construction. This eliminates problems during well installation.

The completed well does not have any drilling mud to remove; thus the well develops quicker and is more efficient.

The method has been approved and utilized for over fifteen years on projects for the Environmental Protection Agency, California Department of Health Services, Arizona Department of Environmental Quality, Regional Water Quality Boards, Department of Energy, Department of Defense and private clients throughout the Western States.

Sample specifications and references are available upon request.

General Information

Nominal Casing Diameter	Well Diameter	Nominal Depth Capacity	Telescoped Casing Diameter	Telescoped Depth Capacity
7"	2"	600'	10" x 7"	1000'
8"	4"	500'	10" x 8"	900'
10"	5"	400'	12" x 10"	750'
12"	6"	350'	16" x 12"	550'
14"	8"	250'	16" x 14"	450'
16"	10"	200'		

The actual depth capacity will vary

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DRILLING FLUIDS FUNDAMENTALS



Drilling Fluid Properties and Effective Mud Cleaning



Mud rotary drilling is a method of drilling a borehole into the subsurface by rotating a string of drill pipe and bit against the formation. By circulating a water based drilling fluid, the drilled material (cuttings) is carried to the surface. This drilling method is used in the environmental or water well, mining, geotechnical and oil/gas drilling industries.

A complete drilling fluid system must be properly designed in order to efficiently construct a well. The two main parts of the fluid system consist of the actual drilling fluid, and the solids separation equipment designed to remove the cuttings from the mud at the surface.

WHAT DOES DRILLING MUD DO?

Removes material (cuttings) from the borehole

The drilling fluid carries the drilled material to the ground surface either by viscosity or velocity.

Cools and lubricates the bit

The drill bit becomes hot due to friction generated during the drilling process. As the drilling fluid passes through the bit and exits the jets/nozzles, the excess heat is removed and carried up the borehole.

Cleans the drill bit

When the drilling fluid exits the bit jets, the fluid's velocity removes material from the bit teeth and the cuttings from the bit formation interface. This prevents the cuttings from being re-cut or re-ground.

Controls fluid loss

As the fluid moves from the borehole into the formation, clay particles are deposited on the borehole wall. The clay particles form a barrier limiting the amount of drilling fluid

penetrating the formation. This barrier, called a filter cake, is important for the stability of the borehole. Additionally, well development time is reduced if fluid loss to the formation is limited.

Stabilizes the borehole

The drilling fluid's weight in the borehole must overcome the formation pressure to prevent the borehole from collapsing. Also, the fluid prevents formation swelling by "coating" the formation with an impermeable barrier.

Lubricates the drill pipe

The drilling fluid reduces friction between the drill pipe and the rising cuttings, and also between the drill pipe and the formation.

Suspends cuttings

When the mud pump stops, the drilling fluid velocity stops. The fluid must have enough gel strength to keep the drilled material (cuttings) in suspension until the mud pump activates.

DRILLING FLUID PROPERTIES

Viscosity

Resistance to flow. Molasses has a higher viscosity than water. Viscosity is measured by the use of a Marsh funnel. The device measures the time required for a unit volume of fluid (one quart) to drain through the funnel. Fresh water at a temperature of 70° has a flow time of 26 seconds through the Marsh funnel.

Density

Mass per unit volume. Drilling fluid densities are measured in pounds per gallon (ppg). The density of water is approximately 8.3 ppg.

Fluid Loss Control

Water loss and wall building (filter cake) tests are performed to API standards by measuring the amount of liquid forced from the mud, through a filter paper to a set pressure and time (normally 100 psi at 30 minutes). The filtrate or water passing through the filter paper and the thickness of the filter cake is measured. Please note that the filter cake does not structurally prevent the borehole wall from collapsing. The filter cake only minimizes the amount of drilling fluid that penetrates into the formation.

Sand Content

Sand content is measured as a percent of total fluid volume of particles retained on a 200-mesh sieve.

Gel Strength

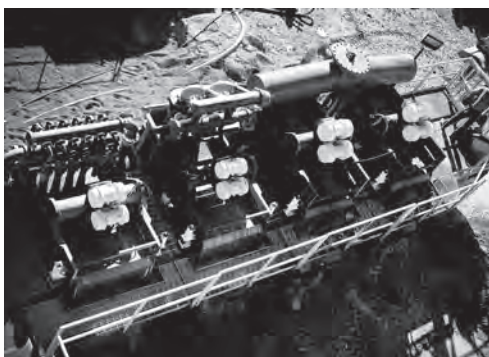
A measure of a fluid's ability to hold particles in suspension. Gel strength is measured on a concentric cylinder viscometer.

Field personnel on a periodic basis, normally measure density, sand content, and fluid loss, during drilling operations. The testing equipment is inexpensive and easy to use with minimal training. A typical range of fluid properties for drilling in unconsolidated formation are as shown below:

DENSITY	Less than 9 pounds Per gallon (ppg)
FILTER CAKE	Approximately 2/32"
SAND CONTENT	Less than 1%
VISCOSITY	32-48 seconds

The above parameters should be modified on a site-specific basis. However, the sand content should remain below 1% in order to maintain the proper mud weight and viscosity.

DRILLING FLUID CLEANING EQUIPMENT



9000 GALLON CAPACITY CHEMTRON PORTABLE MUD PIT



SPEEDSTAR 50K ROTARY RIG AND PORTABLE MUD CLEANER EQUIPPED WITH LINEAR MOTION SHAKER TABLES



DRILLING FLUID CLEANING PROCESS

The purpose of a drilling fluid cleaning system is to remove the suspending solids (drill cuttings) entrained in the mud. High solids or sand content increases the fluid density, which leads to the following problems:

- 1 High fluid density causes pressure in the formation of the borehole. This pressure drives the drilling fluid through the filter cake into the formation, leads to excessive drilling fluid loss to the formation, and extends well development time required to remove the mud from the formation.
- 2 As the fluid density increases, the pressure required to move the fluid up the borehole also increases, leading to high mud pump pressure requirements.
- 3 High solids or sand content also leads to significant abrasion in the drill tooling as the fine particles are recirculating through the mud pump and drill string. Washed out drill strings and mud pump valves/seats, along with leaking swivel packing, are caused by the recirculation of sand through the system.
- 4 If the gravel pack is emplaced in the annulus through drilling fluid with a high sand content, the fines will be entrained in the gravel pack leading to increased well development costs and reduced well yields.

Drilling fluid in a typical direct mud rotary drilling operation is directed through the following path:

- 1 Clean fluid is pumped from the mud pump into a flow line to the drill rig.
- 2 The drill mud travels down the inside of the drill pipe to the bit.
- 3 As the fluid exits the bit nozzles, heat and drill cuttings caused by friction, are carried away from the bit face.
- 4 The cutting's laden fluid travels up the annulus between the drill pipe and the borehole wall.

- 5 The fluid is typically contained at the ground's surface within an above ground pit at the drill rig.
- 6 A transfer pump moves the fluid to the cleaning unit.
- 7 The fluid enters the fluid cleaning system at the "possum belly" and flows across the first linear motion shaker called the scalping shaker. (Figure 1, back page) This "first cut" removes the large cuttings from the mud.
- 8 The fluid falls through the scalping shaker into a pit where some settling occurs.
- 9 Another pump drives the partially cleaned fluid through a set of hydro cyclones, which removes sand and silt particles. (Figure 2 & 3, back page)
- 10 The hydro cyclone discharge is directed onto a second linear motions shaker with small mesh size screens (140-200), where the sand size particles are removed from the drilling fluid. (Figure 2 & 3, back page)
- 11 The cleaned mud is then returned to the mud pump and the cycle is repeated.
- 12 The solids from the linear motion shale shakers are discharged into small transfer hoppers or roll off containers for disposal. Linear motion shale shakers employ the latest in technology by allowing a finer screen on the shaker. This results in more solids removed from the mud and a drier solids discharge from the unit.

Fluid cleaning systems are portable; they are skid or trailer mounted, and can range in tank capacity from less than 500 gallons to over 10,000 gallons. The cleaning rate of the unit should be designed at 150% of the mud pump's maximum flow rate.

The use of WDC modern linear motion solid separation equipment will increase well yields, reduce disposal costs, and provide the cleanest possible mud separated from cuttings from the drilling fluid in a virtually dry manner.



FIGURE 1

LINEAR MOTION SCALPER SHAKER TABLE



FIGURE 2

DESANDING CONE

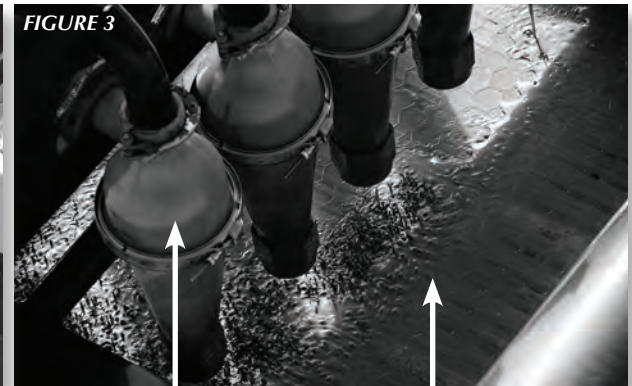


FIGURE 3

DESILTING CONES

LINEAR MOTION SHAKER TABLE

WDC offers multiple client education opportunities, including our multi-media Drilling Fluids Seminar. Each seminar is worth 0.1 CEU credits, and those completing a class will be presented with a framed Continuing Education Unit Certificate. At no expense to you, a WDC drilling professional will travel to your location and present one of our multi-media seminars during a WDC catered meal.

THE DRILLING FLUIDS SEMINAR FEATURES:

- Graphical illustrations of mud properties and functions.
- Photos and videos of the mud properties testing including viscosity, density, filter cake, and sand content.

- Videos of major mud rotary drilling components including drilling rigs and portable mud pits equipped with linear motion shaker tables.
- Estimates of drilling fluid containment and disposal costs.

TWO WAYS YOU CAN SIGN UP FOR THE SEMINAR:

- 1 Call the nearest WDC office listed on the back page of this publication.
- 2 Go to www.wdcexploration.com and check out the Client Education menu. Once at our website, you can sign up for all of the WDC Seminars using the online sign up form.

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Las Vegas 702.558.9800 • Los Angeles 800.974.2769

Phoenix 800.584.6471 • Sacramento 800.873.3073

San Francisco 510.236.6282

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SOURCES

- Handbook of Groundwater Development*, Roscoe Moss Company, Published by John Wiley & Sons, Inc. 1990.
Groundwater and Wells, Second Edition, Published by Johnson Filtration Systems, Inc. 1986.
Drilling Fluid Properties & Functions, John H. Berry, PG – Foundation Division Manager – CETCO Drilling Products.

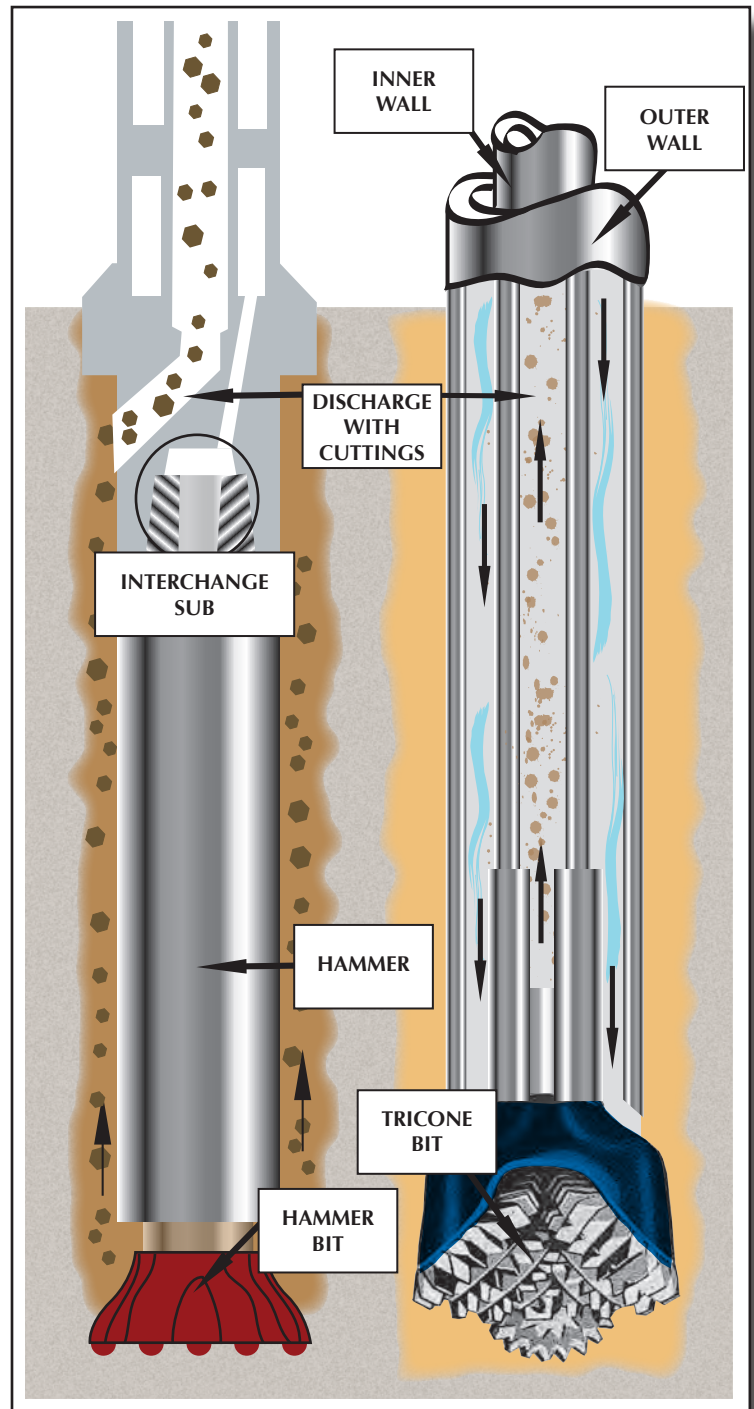
The dual-wall, reverse-circulation method uses flush-jointed double-wall pipe in which the compressed air moves by reverse circulation. Unlike conventional reverse circulation using drilling fluid which runs down the outside of the drill pipe down the annulus, the compressed air flow is contained between the two walls of the dual-wall pipe and only contacts the walls of the borehole near the bit. The most common drill pipe diameter for the dual-wall is 4 1/2-in. OD. Male and female tool joints are used to connect the outer pipes; a connector sleeve with an "O" ring seals the joint between the inner pipes.

If a dual-wall system is utilized by a top-head drive rig, several different types of bits can be used, but the bit size is normally one nominal size larger than the drill pipe. Thus, the space between the outer pipe and the borehole wall is small and the pipe partially (or totally) supports the wall like a conventional stabilizer. The bit is mounted into a permanent sub that has ports for passage of the circulation medium. If a tricone bit (either a chisel-tooth or button-lip type) is used, the circulation medium passes upward through the inner part of the bit. A bit-wear sleeve is attached as close as possible to the cutting face and serves as a wear ring.

The circulation medium passes from the annular space between the two pipes, through a predrilled bit sub, and is discharged toward the cutting surface along the periphery of the bit sleeve; after entraining the cuttings, the circulation medium passes upward through the inner pipe.

When a tricone bit is used, the formation sample passing upward through the inner casing originates from a small vertical section of the formation. In the use of a down-the-hole hammer, however, the bit extends 4 to 5 ft out from the bottom of the dual-wall pipe. Air is forced down inside the hammer, out the ports, and then passes up around the outside of the hammer shaft and into a special type of crossover channel (interchange) sub and then into the inner casing. Thus, the formation sample or water sample passing up the pipe can originate over a longer vertical section (3 to 4 ft) of the formation.

At the surface, circulation medium enters the annular space between the inner and outer pipes by a special side inlet swivel. Circulation



DUAL-WALL reverse circulation

medium can consist of dry air, air and water, air and water with surfactants or water with clay or polymers. When air is used, up-hole velocities in the dual-wall system average 4,500 to 6,000 ft/min. After passing down the annular space and up inside the inner pipe air passes with the formation sample into a cyclone that can be equipped with an automatic splitter.



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Sacramento 800.873.3073 • San Francisco 510.236.6282

Resource: "Groundwater and Wells" 2nd Edition, Driscoll

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Appendix E: Technical Memorandum No. 1

10540 White Rock Road, Suite 180
Rancho Cordova, California, 95670
Tel: 916-444-0123 phone
Fax: 916-635-8805 fax

Prepared for: Butte County Department of Water Resource Conservation (BCDWRC)

Project No: 138604

County of Butte Contract Number: 18050

Technical Memorandum No. 1

Subject: Criteria for Identifying Formational/Unit Boundaries in Drill Cuttings

Date: August 12, 2010

To: Field Personnel – Brown and Caldwell

Cc: Tim Godwin, BC Field Manager; Paul Gosselin, BCDWRC, Kelly Staton, DWR;
Debbie Spangler, DWR

From: Joe Turner

Prepared by:



Joseph Turner, P.G. #5125, H.G. 454

Chief Hydrogeologist

The purpose of this technical memorandum is to establish the criteria that will be used to distinguish the Tuscan Formation during drilling operations for the Lower Tuscan Aquifer Monitoring, Recharge, and Data Management Project. The nomenclature that will be followed is modified from Blair and Others (1991) with the primary objective of identifying the major water bearing units of the Tuscan Formation. However, where possible, the seven units of the Tuscan Formation defined by Helley and Hardwood (1985) will be distinguished based on the potential presence of distinct characteristics for each of the units. These seven units from youngest to oldest are as follows:

- Unit D
- Tuff of Hogback Road
- Unit C
- Ishi Tuff Member
- Unit B
- Unit A
- Nomlaki Tuff Member.

Hydrostratigraphically, the Tuscan Formation has been divided into two units: the Upper Tuscan Aquifer System consisting primarily of Unit C; and, the Lower Tuscan Aquifer Unit consisting of Units A and B.

Overlying the Tuscan Formation are numerous Quaternary Deposits. For this investigation, these units are defined to include all post-Tuscan sediments in the area and will be designated as Quaternary Deposits (Qd). This broader definition is employed because the numerous Quaternary formations others have proposed are based on geomorphic or buried-soil information rather than on criteria by which formal formations are distinguished. More importantly, the criteria used by others can not be easily distinguished in drill cuttings. In the Oroville area, Blair and Others (1991) used this same broader definition but designated all post-Nomlaki sediments as the Laguna Formation. Underlying the Nomlaki Formation in this area were sediments of the Tuscan Formation. Note, that Blair and Others (1991) designated the Tuscan Formation in this area as the Mehrten Formation following nomenclature used by Creely (1965). Busacca (1982) identified the Tuscan Formation in this area as an unnamed Dacitic Lahar underlying the Nomlaki Tuff.

Expected geologic units underlying the Tuscan Formation within the project area are the Miocene Lovejoy Basalt and Eocene Ione Formation. Some recent investigations have interpreted the presence of a unit referred to as the Upper Princeton Valley Formation. As defined by Redwine (1972), the Princeton Submarine Valley System is a morphological feature of the ancestral Sacramento River Basin and contains the geologic formations described above. For example, the Ione Formation is used by Redwine to separate the lower and upper Princeton Valley fills and the Lovejoy Basalt is interpreted to represent the rimrock of the upper Princeton Valley Fill. However, the Upper Princeton Valley Fill will be used to designate units that directly underlie the Tuscan Formation that do not correspond to the Ione Formation or Lovejoy Basalt as described below.

A key component for identification of formational boundaries will be the methods used for logging of lithologic samples collected during drilling. As required in the Contract for the

project based on the Request for Proposal (RFP) issued by Butte County (RFP number 06-10), lithologic samples collected during drilling will be described using the visual manual procedure for description of soils outlined in American Society for Testing and Materials (ASTM) Method D 2488-90. However, this method was developed for engineering purposes of naturally occurring soils and does not emphasize the petrographic analysis of samples that will be critical to identifying the formation boundaries. As such, each sample description will also include the approximate percentage of the following rock types:

- Dacite, andesite, and andesitic basalt.
- Pumice/tuff.
- Crystalline basement material including granitics and metamorphic rock.
- Rhyolite.
- Basalt.

It should also be noted that a large portion of the Tuscan Formation is lithified and falls outside the classification scheme of the ASTM method. For samples collected from these units, common rock nomenclature will be used such as siltstone and conglomerate.

A description of each of the units that may be encountered during drilling and the criteria that will be used to identify them during drilling is presented below.

Quaternary Deposits

As discussed above, for this investigation the Quaternary Deposits will include all post-Tuscan Formation sediments in the area including the recent deposits of the various stream channels in the area. If present, this formation will be the surficial unit at all proposed groundwater monitoring well drilling locations. This more broadly defined formation includes deposits varying from latest Pliocene through Quaternary in age.

In outcrop, the Quaternary Deposits consists of sandy gravel channel, sandy channel facies, and sandy clay to clay floodplain facies. The gravel deposits occur above sharp, scoured facies and are comprised of poorly to moderately sorted, sandy, clast-supported pebbles and cobbles. Well developed soils with red to red-brown argillic horizons are locally prevalent on the channel facies. The structures, fabric, and textures of the gravel facies are indicative of transportation by unidirectional water flow under upper-flow-regime conditions. The development of soils on the upper part of these channel fills denotes long periods during which the fill was subjected to pedogenesis, most likely resulting from channel abandonment of the area due to river avulsion or downcutting. Towards the east side of the Study area, sand facies make up only a small percentage relative to gravel-channel deposits that reflect flow conditions in high-gradient river systems that are commonly to vigorous for sand deposition. The sand units that are present were probably deposited in the main channels during waning flood stage or during lower river discharge or in secondary channels as is demonstrated by the present Feather River system near Oroville. The clay facies are tan or reddish brown and represent sediment accumulation in floodplains adjacent to the main channels. Manganese oxide root casts and reddened buried soils are common in these deposits indicating periods during which the floodplain was vegetated and well drained.

Gravel clasts consist of a mixture of plutonic (including clasts from Tuscan Formation) and metamorphic lithologies. Based on petrographic analysis from outcrop and borehole samples near the Oroville area (Blair and others, 1991), both the sand facies and sandy component of gravel facies should reveal a wide variety of framework grain lithologies including monocrystalline and polycrystalline quartz (5% to 25%), plagioclase and potassium feldspar (2% to 10%), metamorphic rock fragments (2% to 15%), granitic rock fragments (10% to 30%), porphyritic andesite-andesitic basalt-basalt-dacite rock fragments (10% to 50%), pumice fragments (5% to 30%), sandstone and shale fragments (0% to 5%), and mica and heavy mineral grains (3% to 20%). This framework grain assemblage indicates that the Quaternary Deposits have a mixed provenance consisting of Sierra Nevada crystalline rocks and Mount Lassen-derived intermediate volcanoclastic rocks (Tuscan Formation), and pumice from Hogback Road, Ishi, and Nomlaki tuff members of the Tuscan Formation.

The base of the Quaternary Deposits can easily be distinguished in drill cuttings where pumiceous materials of the tuff members are encountered. Where the base of the Modesto Formation is not underlain by a tuff member, it will be identified by the presence of gravel clasts and/or sand grains consisting of a composition greater than 50 percent andesite, andesitic basalt, and/or dacite.

Tuscan Formation

The Tuscan Formation includes a sequence of variably cemented, interbedded clay, sand, and gravel. This formation consists predominantly of purple volcanic debris flow deposits and interbedded waterlain fluvial deposits rich in volcanic detritus, but in many areas containing crystalline basement-derived clasts and rare tuff beds. The reported occurrence of both channel-lain, clast supported, pebble- and cobble-gravel facies and interbedded volcanic-rich debris-flow facies in this formation suggests that debris flows related to volcanic events episodically choked the ancestral stream/river systems of the area. Blair and others (1991) described the gravel and sand fractions, as well as many intervals of the Tuscan Formation in the Oroville area encountered in the subsurface consisting of porphyritic-dacite rock fragments and disaggregated quartz and plagioclase phenocrysts. The sand fraction of this area comprised a mixture of porphyritic-dacite rock fragments (36% to 37%), granitic rock fragments (32% to 49%), metamorphic rock fragments (4% to 7%), Quartz (10% to 19%) and feldspar (0% to 3%). This composition indicates that in the Oroville area that the Tuscan Formation originated from the erosion of both Sierra Nevada crystalline rocks and a Mount Lassen-derived volcanic sequence.

As indicated above for Quaternary Deposits, the top of the Tuscan Formation will be identified either by the presence of greater than 50 percent pumiceous material or the presence of gravel clasts and/or sand grains consisting of a composition greater than 50 percent andesite, andesitic basalt, and/or dacite. Where possible, specific units of the Tuscan Formation as defined by Helly and Hardwood (1985) will be identified based on the characteristics discussed below. However, many of the criteria used to distinguish the units in outcrop may not be observable in drill cuttings.

Unit D: Unit D predominantly consists of fragmental deposits characterized by large monolithic masses of gray hornblende andesite, augite-olivine basaltic andesite, black pumice, and smaller fragments of black obsidian and white and gray hornblende bearing pumice in a grayish-tan pumiceous mudstone matrix. If present, the tuff of

Hogback road separates Unit D from Unit C. If the tuff of Hogback road is absent, Unit D will be distinguished from Unit C in drill cuttings by the presence of black obsidian fragments and white and dove-gray dacite pumice fragments.

Tuff of Hogback Road: This unit is commonly thin bedded, locally cross bedded water-worked dacitic ash deposit that rests unconformably on Unit C. The unit consists of thin lapilli tuff, pumiceous sandstone, and conglomerate composed of rounded white hornblende-bearing dacitic pumice fragments and gray and black pumice fragments with varying amounts of andesitic detritus.

Unit C: Unit C is a lahar with some interbedded volcanic conglomerate and sandstone and is distinguished from Unit D as stated above. Where present the Ishi Tuff Member separates Unit C from the underlying Unit B. Where the Ishi Tuff Member is not present, Unit C cannot be distinguished from Unit B in drill cuttings.

Ishi Tuff Member: The Ishi Tuff Member is a white to light-gray, fine-grained, pumiceous air-fall tuff commonly reworked to include variable amounts of volcanic sandstone and silt. This unit will be identified in drill cuttings by the presence of abundant black and bronze biotite flakes.

Unit B: Unit B consists of interbedded lahars, volcanic conglomerate, volcanic sandstone, and siltstone similar to Unit C. As stated above, where present Unit B will be identified as the unit directly below the Ishi Tuff Member (unless unit is Unit A as defined below) and where the Ishi Tuff Member is not present, Unit B cannot be distinguished from Unit C in drill cuttings. Unit B will be distinguished from the underlying Unit A as described below.

Unit A: Unit A consists of interbedded lahars, volcanic conglomerate, volcanic sandstone, and siltstone all containing scattered fragments of metamorphic rocks. Metamorphic rock fragments include white vein quartz, green, gray, and black chert, greenstone, greenish-gray slate, and serpentinite. The presence of metamorphic rock fragments in drill cuttings will distinguish Unit A from the overlying Units B, C, and D.

Nomlaki Tuff Member: The Nomlaki Tuff Member is a white, light-gray, locally reddish-tan to salmon dacitic pumice tuff and lapilli tuff. In most areas, Helley and Harwood (1985) place this unit at the base of the Tuscan Formation. However, in some areas such as at the west end of the exposures of the Lovejoy Basalt in Bidwell Park, they observed the Nomlaki Tuff above Unit A of the Tuscan Formation. Blair and others (1991) used the Nomlaki Tuff to separate the Laguna Formation from the underlying Tuscan Formation in the Oroville area.

Lovejoy Basalt

The Lovejoy Basalt is a black, dense, hard, microcrystalline to extremely fine grained, equigranular to sparsely porphyritic basalt. This unit should be easily distinguished from the overlying Tuscan Formation during drilling from the presence of abundant basalt fragments and change to hard drilling conditions consistent with hard rock material.

Ione Formation

The Ione Formation consists of variably cemented, fine to coarse sandstone, siltstone, lignite, and claystone with variegated colors including red, yellow, white, blue, gray, orange, and black. Interbedded lenticular pebble-and-cobble “auriferous” or “greenstone” gravels are locally present and become more abundant eastwardly (Blair and others, 1991). In drill cuttings, the Ione Formation is easily identified from the overlying Tuscan Formation by its multicolored nature and volcanic-free composition.

Upper Princeton Valley Fill

As stated above, Redwine (1972) defined the Princeton Submarine Valley System as a morphological feature of the ancestral Sacramento River Basin that contains several of the geologic formations described for the area (Tuscan Formation is not part of this system). However, for this project, this designation will be given to material directly underlying the Tuscan Formation that does not correspond to the Lovejoy Basalt and Ione Formation and will be identified in drill cuttings by the complete absence of andesitic and dacitic material. In the Sacramento area, the Valley Springs Formation directly underlies the Mehrten Formation (stratigraphic correlative unit of Tuscan Formation) and consists of varying amounts of rhyolite ash, vitreous tuff, quartz sand containing abundant glass shards, pale beds of ashy clay, and fragments of pumice. This formation has not been recognized in the project area.