DEPARTMENT OF THE ARMY
CAMP STANLEY STORAGE ACTIVITY, MCAPP
25800 RALPH FAIR ROAD, BOERNE, TX 78015-4800

December 9, 2010

U-031-10

Mr. Bryan Smith
Texas Commission on Environmental Quality
Industrial and Hazardous Waste Permits Section
P.O. Box 13087 (MC-130)
Austin, TX 78711-3087

SUBJECT: Biannual Status Report (Month 37 – Month 42, May - October, 2010) of the Pilot Study Class V Aquifer Remediation Injection Wells at Camp Stanley Storage Activity, Boerne, Texas, TCEQ Authorization No. 5X2600431; WWC12002216; CN602728206/RN104431655

Dear Mr. Smith:

The Camp Stanley Storage Activity (CSSA), McAlester Army Ammunition Plant, Joint Munitions Command, Army Materiel Command, U.S. Army, is submitting this biannual report summarizing the injection activities performed at the on-post Solid Waste Management Unit (SWMU) B-3 site. The activities performed are part of the planned SWMU B-3 Pilot Study being performed to evaluate the effectiveness of enhanced anaerobic biodegradation (EAB) for treatment of chlorinated compounds in groundwater. The pilot study activities include the injection of recovered groundwater into mulch/gravel filled bioreactor trenches.

This biannual report contains data as specified by the Texas Commission on Environmental Quality (TCEQ) Underground Injection Control (UIC) permit for the months of May, 2010 through October, 2010 (Months 37-42). The biannual reporting data includes monthly samples of the injected groundwater for volatile organic concentrations (VOCs) and total dissolved solids (TDS) and field collected parameters including injection volumes, injection pressures and the pH of recovered groundwater. Data indicates that concentrations of contaminants did not exceed limits specified in 40 CFR §261.24 Table 1 as referenced in CSSA's UIC permit authorization.

Between May 1, 2010 and October 31, 2010 approximately 7,907,755 gallons of groundwater from wells CS-MW16-CC (~3,633,600 gallons), CS-MW16-LGR (~2,266,300 gallons), B3-EXW-01 (~1,961,500 gallons), and B3-EXW-02 (~46,300) were injected into SWMU B-3 bioreactor trenches 1, 2, and 6. A total of 31,158,859 gallons of recovered groundwater from CS-MW16-LGR, CS-MW16-CC, B3-EXW-01, and B3-EXW-02 have been injected into bioreactor trenches 1, 2, and 6 since normal bioreactor operations began. Samples of the injected groundwater, for this reporting period, were collected on May 19, June 22, July 20, August 17, September 21, and October 19, 2010. Results of analysis are summarized in the attached Table 1. Field forms which contain operating pressures and pH readings for the reporting period are also attached and the laboratory data packages are included in the accompanying CD.

If you have any questions regarding the information contained in this letter, please contact Gabriel Moreno-Fergusson, CSSA Environmental Program Manager, at (210) 698-5208 or Ken Rice, Parsons, at (512) 719-6050.

Sincerely,

Jason D. Shirley
Installation Manager

Enclosures

cc: Gabriel Moreno-Fergusson, CSSA Environmental Program Manager
Wayne Elliott, USAE (ltr only)
Julie Burdey, Parsons (ltr only)
Ken Rice, Parsons
File: 747144.07000

Analytical Summary Data

Table 14.5.2

B3 - UIC Analytical Results
August - October 2010

			Sample ID	B3-UIC			B3-UIC			B3-UIC			B3-UIC			B3-UIC			B3-UIC		
			Sample Date	05/19/10			06/22/10			07/20/10			08/17/10			09/21/10			10/29/10		
			Sample Type	N1			N1			N1			N1			N1			N1		
			Sampling Method	Grab			Grab			Grab			Grab			Grab			Grab		
			Lab ID	AY15780			AY17148			AY18286			AY19940			AY22083			AY24744		
	Lab MDL	Lab PQL	B-3 UIC Criteria (RCRA Haz.)	Results	Flags	Dilution	Results	Flags	Dilution	Results	Flags	Dilution	Results	Flags	Dilution	Results	Flags	Dilution	Results	Flags	Dilution
SW8260B (µg/L)																					
Cis-DCE	0.16	1.2	--	75		1	110		1	100		1	100		1	92		1	83		1
Trans-DCE	0.19	0.6	--	4.6		1	5.0		1	5.6		1	15		1	1.5		1	6.27		1
TCE	0.16	1.0	500.	86		1	110		1	100		1	100		1	84		1	81.31		1
PCE	0.15	1.4	700.	57		1	79		1	72		1	76		1	52		1	64.85		1
Toluene	0.17	1.1	--	0.17	U	1	0.17	U	1	0.17	U	1	0.17	U	1	0.06	U	1	0.06	U	1
Vinyl Chloride	0.23	1.1	200.	0.23	U	1	0.23	U	1	0.23	U	1	0.23	U	1	0.08	U	1	0.08	U	1
EPA 160.1 (mg/L)																					
TDS	4.4	10.	--	308		1	363		1	364		1	392		1	377		1	364		1
Field measured																					
pH				7.22			7.21			7.35			7.44			7.26			6.89		

Tables present all laboratory results for analytes.
Data packages for laboratory results are presented in Attachment 1.
All samples were analyzed by APPL Laboratory Services.
pH results reported were field measured.
UIC criteria specified in 40 CFR 261.24 Table 1

Data Quantifiers:
J - The analyte was positively identified, the quantitation is an estimate
U - The analyte was analyzed for, but not detected. The associated numerical value is the MDL.

Abbreviations:
PQL Practical Quantitation Limit
MDL Method Detection Limit
N1 Environmental Sample
SQL Sample Quantitation Limit
UIC Underground Injection Control

Field Forms

SWMU B-3 Tree Mulch Bioreactor

Bioreactor Monitoring

Personnel: Tennyson, Bouch

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp (deg. C)	SpCond (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (Y)	Notes
Date: 5.6.10		Time: 1000			1.342	171.2	(20%)		
B3-T1-1	12.9	5.47	6.64	23.59	~~0.954~~	~~-176.1~~	~~0.47~~ 0.36		MW 27 LGR
B3-T1-2	12.4	5.19	6.61	23.93	0.940	-132.8	0.33		pH = 6.60
B3-T1-3	12.85	4.82	7.17	23.77	0.638	-104.0	0.52	✓	Temp = 19.14
B3-T2-1	9.67	6.95	6.67	24.11	0.877	-128.3	0.41		ms = 0.823
B3-T2-2	10.01	7.24	6.50	23.29	1.196	-149.4	0.39	✓	ORP = -94.7
B3-T3-1	9.96	9.22							DO = 0.47
B3-T3-2	7.4	DRY							DTW = 7.85
B3-T4-1	6.32	DRY							
B3-T5-1	9.33	9.29							
B3-T5-2	7.98	DRY							
B3-T6-1	11.45	11.19							
B3-T6-2	12.34	12.28							
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	5-3-10	1020	5.4.10	0945	5.5.10	0920	5.6.10	0858	5.7.10	1100
Rate (gpm) / Cumulative Total (gal)										
T-1	21.5	1899732	20.8	1927969	20.7	1958062	22.9	1988247	19.5	2021738
T-2	8.6	3332472	8.82	3343190	9.16	3356533	10.5	3369075	7.54	3382916
T-3										
T-4										
T-5										
T-6										
B-3 (Total)										
CS-MW16-LGR	∅	825502	9.44	835411	9.27	845017	9.32	855340	12.51	866156
CS-MW16-CC	∅	74351	19.48	93940	18.99	113650	19.10	134667	19.48	156827
B3-EXW01	∅	2399452	12.44	2412429	12.69	2424982	12.41	2439810	12.41	2453081
Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change filter.										
PB-1 - PB-2 =	46-38=8		PB-1 - PB-2 = 46-38=8		PB-1 - PB-2 = 41-40=1		PB-1 - PB-2 = 41-41=0		PB-1 - PB-2 = 50-30=20	

Notes: Tank = 3/4 (45.5")

16LGR=103.33, EX01=103.10, CC=171.96

Tank 3/4 full changed BF

MW16 LGR = 123.42
MW16 CC = 226.39
B3 EXW01 = 143.50
Tank is 1/2 full
Week 158

Tank is 1/2 full

Tank is 7/16 full
changed BF
MW16-CC = 237.6
MW16-LGR = 137.5
EX01 = 153.1

supplemental gallons 1,260 dclevel H2O to tank

1,710 dclevel H2O to tank

Personnel	S. Elliott; J. Bowen

Weekly Water Level Monitoring

Well Interval	Sampling Point Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	5-6-10	0916	14.03	14.07 14.08	21.74
CS-WB05-LGR-02	182		0915		14.11 14.11	45.99
CS-WB05-LGR-03A	216		0914		14.14 14.14	60.32
CS-WB05-LGR-03B	262		0913		16.17 24.03	80.30
CS-WB05-LGR-04A	277		0912		22.70 30.56	86.51
CS-WB05-LGR-04B	329		0911		45.33 53.17	108.92
CS-WB05-BS-01	362		0910		59.67 67.51	124.38
CS-WB05-CC-01	432		0907		90.08 97.90	125.84
CS-WB05-CC-02	460	5-6-10	0908		102.24 110.04	138.29
CS-WB06-UGR-01	20		0944	14.03	14.04 14.06	17.31
CS-WB06-LGR-01	93		0943		14.07 14.09	17.81
CS-WB06-LGR-02	174		0942		14.11 14.14	51.73
CS-WB06-LGR-03A	207		0941		14.14 14.16	64.93
CS-WB06-LGR-03B	260		0940		21.60 24.96	87.83
CS-WB06-LGR-04	320		0939		47.66 51.01	108.52
CS-WB07-UGR-01	14		0958	14.03	14.05 14.06	17.15
CS-WB07-LGR-01	90		0957		14.10 14.08	18.74
CS-WB07-LGR-02	175		0956		14.14 14.11	53.90
CS-WB07-LGR-03A	208		0955		14.17 14.17	63.58
CS-WB07-LGR-03B	257		0954		15.58 15.17	84.78
CS-WB07-LGR-04	318		0953		42.13 41.68	106.89
CS-WB08-UGR-01	38		0930	14.04	14.03 14.05	19.05
CS-WB08-LGR-01	115		0929		14.08 14.08	21.65
CS-WB08-LGR-02	193		0928		14.12 14.12	49.62
CS-WB08-LGR-03A	228		0928		14.14 14.14	60.39
CS-WB08-LGR-03B	273		0927		18.87 26.19	79.83
CS-WB08-LGR-04	341	↓	0925		48.45 55.73	108.39

SWMU B-3 Tree Mulch Bioreactor

Bioreactor Monitoring

Personnel: J. bouch ; S. Elliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (√)	Notes
Date: 5·13·10		Time: 1034							
B3-T1-1	12.9	6.42	6.71	24.29	0.818	-133.9	0.46		
B3-T1-2	12.4	6.10	6.60	23.59	1.023	-120.1	0.39		
B3-T1-3	12.85	5.68	7.13	24.43	0.1664	-95.7	0.37	✓	
B3-T2-1	9.67	7.80	6.70	24.58	0.831	-125.9	0.37		
B3-T2-2	10.01	8.16	6.40	24.16	1.370	-116.5	0.36	✓	
B3-T3-1	9.96	9.20							
B3-T3-2	7.4	DRY							
B3-T4-1	6.32	DRY							
B3-T5-1	9.33	9.30							
B3-T5-2	7.98								
B3-T6-1	11.45	11.16							
B3-T6-2	12.34	12.27							
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	5·10·10	1443	5·11·10	1335	5·12·10	0945	5·13·10	0900	5·14·10	1153
Rate (gpm) / Cumulative Total (gal)										
T-1	21.6	2,119,152	21.3	2,136,999	22.0	2,153,451	21.9	2182739	21.1	2216332
T-2	8.23	3422353	8.50	3427945	7.65	3433912	8.69	3444903	8.41	3458203
T-3										
T-4										
T-5										
T-6										
B-3 (Total)										
CS-MW16-LGR	220501	19.055	Ø	905275	12.29	906157	Ø	917816	11.95	931664
CS-MW16-CC	905275	Ø	19.05	246575	19.30	269743	Ø	288401	19.32	310654
B3-EXW01	Ø	2491386	Ø	2491386	12.215	2497573	12.23	2501497	12.13	2518078

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change fliter.

PB-1 - PB-2 = 42 - 40 = 0	PB-1 - PB-2 = 40 - 39 = 1	PB-1 - PB-2 = 40 - 39 = 1	PB-1 - PB-2 = 42 - 34 = 8	PB-1 - PB-2 = 40 - 40 = 0

Notes:
- LGR well turned off @1133 Tank 9/16 full → B3-EXW01 is off also
- LGR well is off until after wells are developed. Tank is 7/16 full
- B3 EXW01 will remain off aswell
- Tank is 9/16 full
- 0835 - LGR wells back on.
- LGR - 126.35
- CC = 185.06
- EXW01 = 121.40
- Tank is 3/4 full
- LGR 16 - 141
- CC 16 - 227.5
- EW01 - 144.2

developing newly installed wells turned off LGR well so tank wouldn't overflow. Putting dev. water in B-3 tank

Week 159 Tank 2/14 full

420 gal IDW H_2O into Tank

Personnel	S. Elliott & J. Bouch

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	5.13.10	0920	14.06	14.00 14.12	21.66
CS-WB05-LGR-02	182		0919		14.05 14.16	41.02
CS-WB05-LGR-03A	216		0918		14.07 14.20	55.04
CS-WB05-LGR-03B	262		0917		16.97 24.02	74.98
CS-WB05-LGR-04A	277		0916		23.50 30.55	81.22
CS-WB05-LGR-04B	329		0915		46.1.3 53.16	103.94
CS-WB05-BS-01	362		0914		60.47 67.52	119.68
CS-WB05-CC-01	432		0913		90.88 97.90	122.72
CS-WB05-CC-02	460		0912		103.04 110.05	134.54
CS-WB06-UGR-01	20		0955	14.07	14.00 14.09	14.08
CS-WB06-LGR-01	93		0953		14.03 14.11	14.12
CS-WB06-LGR-02	174		0952		14.07 14.15	14.15
CS-WB06-LGR-03A	207		0952		14.08 14.19	61.86
CS-WB06-LGR-03B	260		0951		21.74 24.99	84.75
CS-WB06-LGR-04	320		0950		47.81 51.03	104.73
CS-WB07-UGR-01	14		1017	14.08	13.98 14.08	16.77
CS-WB07-LGR-01	90		1016		14.02 14.11	18.22
CS-WB07-LGR-02	175		1015		14.05 14.15	50.74
CS-WB07-LGR-03A	208		1014		14.09 14.19	58.77
CS-WB07-LGR-03B	257		1006		15.72 15.17	79.97
CS-WB07-LGR-04	318		1004		42.28 41.70	~~41.72~~ replaced shoe 102.24
CS-WB08-UGR-01	38		0941	14.05	13.99 14.08	18.62
CS-WB08-LGR-01	115		0940		14.02 14.11	21.87
CS-WB08-LGR-02	193		0939		14.04 14.16	45.55
CS-WB08-LGR-03A	228		0938		14.08 14.20	56.11
CS-WB08-LGR-03B	273		0937		19.01 26.22	75.56
CS-WB08-LGR-04	341		0936		48.58 55.76	105.77

Bioreactor Monitoring

Personnel: J. Bouch; S. Elliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (✓)	Notes
Date: 5/19/10		Time: 0900							
B3-T1-1	12.9	4.29	6.76	24.40	0.825	-159.5	0.30		samp. time = 0935
B3-T1-2	12.4	3.99	6.74	25.25	0.888	-110.2	0.21	✓	= 1030
B3-T1-3	12.85	3.62	7.53	27.38	0.606	-97.5	0.54		= 1115
B3-T2-1	9.67	5.74	6.87	24.05	0.918	-92.0	0.62		= 1000
B3-T2-2	10.01	6.04	6.42	24.64	1.504	-116.7	0.32	✓	= 1050
B3-T3-1	9.96	7.85	6.65	20.26	0.732	-140.3	0.64		MW27-WL=6.28
B3-T3-2	7.4	dry							pH = 6.57
B3-T4-1	6.32	6.18							Temp = 19.68
B3-T5-1	9.33	9.20							Sp.Cond = 0.799
B3-T5-2	7.98	7.52							ORP = -82.7
B3-T6-1	11.45	11.09							DO = 0.53
B3-T6-2	12.34	11.94	~~7.~~	~~20.0~~	~~0.661~~		~~6.24~~		sample time = 1330
B3-UIC			7.22	20.0	0.661	-69.4	6.24		samp. time 0855

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	5-17-10	0845	5-18-10		5-19-10	0840	5-20-10	0840	5-21-10	0930
Rate (gpm) / Cumulative Total (gal)										
T-1	22.4	2304753	Ø	2304178	Ø	2,309,178	21.8	2,338,907	~~22.1~~	2371,030
T-2	7.72	3,492,919	Ø	3,494,199	Ø	3,444,199	9.02	3,505,188	9.61	3,518,218
T-3										
T-4										
T-5										
T-6										
B-3 (Total)										
CS-MW16-LGR	13.68	969287	Ø	969,443	Ø	969,443	13.35	983,613	13.24	997039
CS-MW16-CC	19.70	364538	Ø	366,196	Ø	366,196	19.38	386,768	19.92	486876
B3-EXW01	12.92	2554595	Ø	2554673	Ø	2554673	13.05	2565389	13.15	2578952
Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change fliter.										
PB-1 - PB-2 = 42-41 = 1			PB-1 - PB-2 =		PB-1 - PB-2 =		PB-1 - PB-2 = 44-42 = 2		PB-1 - PB-2 = 44-41 = 3	
Notes: walls shut down at 10:15 am to allow trench to drain for sampling			system off, rained last night		system turned back on at 0843		tank = 1/2 full		tank = 7/16 T-1 still submerged	

Week 160

month 36

Personnel: Elliott

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls		Monthly Field Parameters					
			Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
CS-MW27-UGR	17.0	5/20/10	0933	6.34	6.52	19.85	0.750	-81.0	0.51	
CS-MW28	~~TBD~~ 18.31		0937	dry						
CS-MW29	TBD		0948	15.70	6.68	19.81	0.703	-23.3	3.25	
CS-MW30	TBD		0956	18.55	6.63	19.97	0.670	-17.9	4.43	
CS-MW31	TBD		0851	29.26	6.74	21.54	0.653	-12.5	4.06	water silty
CS-MW32	TBD		0904	35.79	6.80	21.45	0.666	-9.6	4.41	
CS-MW33	TBD		0915	17.94	6.72	20.31	0.526	-3.1	5.21	
CS-MW34	TBD		0923	13.70	6.48	19.92	0.739	-24.5	2.88	
~~MW26~~ CS-~~MW35~~	TBD		0926	9.21	6.50	19.57	0.714	-58.1	1.27	

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01									
CS-D									
CS-MW16-LGR									
CS-MW16-CC									
CS-B3-EXW01									
CS-B3-EXW02									
CS-MW1-LGR									

Week 160

Bioreactor Monitoring

Personnel: J. Bouch ; S. Elliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (√)	Notes
Date: 5·13·10		Time: 1034							
B3-T1-1	12.9	6.42	6.71	24.29	0.818	-133.9	0.46	✓	
B3-T1-2	12.4	6.10	6.60	23.59	1.023	-120.1	0.39		
B3-T1-3	12.85	5.68	7.13	24.43	0.664	-95.7	0.37		
B3-T2-1	9.67	7.80	6.70	24.58	0.831	-125.9	0.37	✓	
B3-T2-2	10.01	8.16	6.40	24.16	1.370	-116.5	0.36		
B3-T3-1	9.96	9.20							
B3-T3-2	7.4	DRY							
B3-T4-1	6.32	DRY							
B3-T5-1	9.33	9.30							
B3-T5-2	7.98	DRY							
B3-T6-1	11.45	11.16							
B3-T6-2	12.34	12.27							
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	5.10.10	1443	5.11.10	1335	5.12.10	0945	5.13.10	0900	5.14.10	1153
Rate (gpm) / Cumulative Total (gal)										
T-1	21.6	2,119,152	21.3	2,136,999	22.0	2,153,451	21.9	2182739	21.1	2,216,332
T-2	8.23	3,422,353	8.50	3,427,945	7.65	3,433,912	8.69	3,444,903	8.41	3,458,203
T-3										
T-4										
T-5										
T-6										
B-3 (Total)										
CS-MW16-LGR	220501	19.05	Ø	905275	12.29	906157	Ø	917816	11.95	931664
CS-MW16-CC	905275	Ø	19.05	246575	19.30	269743	Ø	288401	19.32	310654
B3-EXW01	Ø	2491386	Ø	2491386	12.215	2492573	12.23	2501497	12.13	2,510,078
Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change fliter.										
	PB-1 - PB-2 = 42-40=0		PB-1 - PB-2 = 40-39=1		PB-1 - PB-2 = 40-39=1		PB-1 - PB-2 = 42-34=8		PB-1 - PB-2 = 40-40=0	
Notes:	LGR well turned off @1133 · Tank 7/16 full → B3-EXW01 is off also		· LGR well is off until after wells are developed · Tank is 7/16 full · B3 EXW01 will remain off as well		Tank is 9/16 full; 0835 - LGR wells back on.		LGR - 124.35; CC = 185.06; EXW01 = 121.40; Tank 9/14 full		Tank is 3/4 full; LGR 16 - 141; CC 16 - 227.5; EW01 - 144.2	

Week ~~160~~ (JB) 159

developing newly installed wells turned off LGR well so tank wouldn't overflow. Putting dev. water in B-3 tank

420 gal IDW H_2O into Tank

Personnel	S. Elliott & J. Bouch

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	5.13.10	0920	14.06	14.00 14.12	21.66
CS-WB05-LGR-02	182		0919		14.05 14.16	41.02
CS-WB05-LGR-03A	216		0918		14.07 14.20	55.04
CS-WB05-LGR-03B	262		0917		16.97 24.02	74.98
CS-WB05-LGR-04A	277		0916		23.50 30.55	81.22
CS-WB05-LGR-04B	329		0915		46.1.3 53.14	103.94
CS-WB05-BS-01	362		0914		60.47 67.52	119.68
CS-WB05-CC-01	432		0913		90.88 97.90	122.72
CS-WB05-CC-02	460		0912		103.04 110.05	134.54
CS-WB06-UGR-01	20		0955	14.07	14.00 14.09	14.08
CS-WB06-LGR-01	93		0953		14.03 14.11	14.12
CS-WB06-LGR-02	174		0952		14.07 14.15	14.15
CS-WB06-LGR-03A	207		0952		14.08 14.19	61.86
CS-WB06-LGR-03B	260		0951		21.74 24.99	84.75
CS-WB06-LGR-04	320		0950		47.81 51.03	104.73
CS-WB07-UGR-01	14		1017	14.08	13.98 14.08	16.77
CS-WB07-LGR-01	90		1016		14.02 14.11	18.22
CS-WB07-LGR-02	175		1015		14.05 14.15	50.74
CS-WB07-LGR-03A	208		1014		14.09 14.19	58.77
CS-WB07-LGR-03B	257		1006		15.72 15.17	79.97
CS-WB07-LGR-04	318		1004		42.28 41.70	~~41.12~~ 102.24
CS-WB08-UGR-01	38		0941	14.05	13.99 14.08	18.62
CS-WB08-LGR-01	115		0940		14.02 14.11	21.87
CS-WB08-LGR-02	193		0939		14.04 14.16	45.55
CS-WB08-LGR-03A	228		0938		14.08 14.20	56.11
CS-WB08-LGR-03B	273		0937		19.01 26.22	75.56
CS-WB08-LGR-04	341		0936		48.58 55.76	105.77

replaced shoe

Week ~~HC~~ 159
(JW?)

Personnel ~Bouch; S Elliott

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	5/18/10	1050	14.01	14.07 14.14	22.13
CS-WB05-LGR-02	182	↓	1048		14.11 14.16	55.43
CS-WB05-LGR-03A	216	↓	1048		14.14 14.18	72.12
CS-WB05-LGR-03B	262	5/17/10/5/18/10	0930/1047		16.17 25.97/23.44	88.29/92.06
CS-WB05-LGR-04A	277	5/18/10	1046		22.70 30.51	100.47
CS-WB05-LGR-04B	329	↓	1045		45.33 53.14	123.29
CS-WB05-BS-01	362	↓	1044		59.67 67.48	132.66
CS-WB05-CC-01	432	↓	1043		90.08 97.87	135.84
CS-WB05-CC-02	460	↓	1042		102.24 110.02	147.77
CS-WB06-UGR-01	20	↓	1125	14.05	14.04 14.07	19.40
CS-WB06-LGR-01	93	↓	1124		14.07 14.11	26.45
CS-WB06-LGR-02	174	↓	1123		14.11 14.17	63.35
CS-WB06-LGR-03A	207	↓	1122		14.14 14.19	70.33
CS-WB06-LGR-03B	260	5/17/10/5/18/10	1300/1121		21.60 26.94/24.95	91.76/93.22
CS-WB06-LGR-04	320	5/18/10	1121		47.66 51.00	123.59
CS-WB07-UGR-01	14	↓	1208	13.99	14.05 14.00	18.00
CS-WB07-LGR-01	90	↓	1206		14.10 14.04	19.30
CS-WB07-LGR-02	175	↓	1205		14.14 14.07	56.76
CS-WB07-LGR-03A	208	↓	1205		14.17 14.12	69.16
CS-WB07-LGR-03B	257	5/17/10/5/18/10	1345/1204		15.58 17.19/15.10	87.70/90.39
CS-WB07-LGR-04	318	5/18/10	1203		42.13 41.65	123.57
CS-WB08-UGR-01	38	↓	1105	14.05	14.03 14.07	21.15
CS-WB08-LGR-01	115	↓	1104		14.08 14.11	22.55
CS-WB08-LGR-02	193	↓	1102		14.12 14.16	50.70
CS-WB08-LGR-03A	228	↓	1102		14.14 14.17	72.52
CS-WB08-LGR-03B	273	5/17/10/5/18/10	1015/1101		18.87 28.20/26.19	88.67/91.45
CS-WB08-LGR-04	341	5/18/10	1100		48.45 55.73	122.81

Week 160 Month 36

SWMU B-3 Tree Mulch Bioreactor

Bioreactor Monitoring

Personnel: J. Bouch ; E. Tennyson

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (√)	Notes
Date: 5.27.10		Time: 1430							
B3-T1-1	12.9	4.45	7.30	24.46	0.443	-102.9	0.43		standing water - ponded.
B3-T1-2	12.4	4.18	6.96	25.01	0.555	-175.0	0.22	✓	
B3-T1-3	12.85	3.80	7.64	27.28	0.441	-99.3	0.34		
B3-T2-1	9.67	5.89	7.09	24.18	0.547	-224.0	0.38		
B3-T2-2	10.01	6.22	6.69	24.89	1.053	-165.3	0.33	✓	
B3-T3-1	9.96	8.95	7.14	21.81	0.475	-144.8	0.22		~~insufficient water~~
B3-T3-2	7.4	dry							dry
B3-T4-1	8.32	6.24							insufficient water
B3-T5-1	9.33	9.22							insufficient water
B3-T5-2	7.98	7.89							insufficient water
B3-T6-1	11.45	11.09							"
B3-T6-2	12.34	11.98							"
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	5.24.10	1048	5.25.10	1053	5.26.10	1100	5.27.10	1000	5.28.10	1330
	Rate (gpm) / Cumulative Total (gal)									
T-1	22.2	2463336	21.6	2493995	21.1	2524627	21.3	2554481	21.5	2588590
T-2	8.34	3553615	9.62	3561648	10.5	3579659	9.38	3592564	9.79	3601989
T-3										
T-4										
T-5										
T-6										
B-3 (Total)										
CS-MW16-LGR	12.79	2.83	13.04	26302	0	25693	12.51	37407	12.40	52142
CS-MW16-CC	19.32	464605	19.76	480350	0	503994	20.41	522546	20.74	545845
B3-EXW01	12.9	2611728	12.68	12552	13.45	2643686	12.95	2656335	12.85	2671134
Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change filter.										
	PB-1 - PB-2 = 46-38 = 8		PB-1 - PB-2 = 42-42 = 0		PB-1 - PB-2 = 42-42=0		PB-1 - PB-2 = 47-42=5		PB-1 - PB-2 = 42-42 = 0	
Notes:	LGR = 106.38 CC = 231.42 B3 EXW01 = 127.20		Tank is 1/2 full		LGR = 86.68 CC = 169.37 B3EXW01 = 88.80		16LGR = 105.88 16 CC = 223.11 B3EXW01 = 121.00		16LGR = 109.72 16CC = 238.24 B3EXW01 = 129.70	
	Tank 3/4 full Changed BF (0-0=0)				Tank is 3/4 full		Tank 1/2 full		Tank is 3/4 full	

Week 14

1-1 24.44 C° , 0442 mS/cm , 0.19 DO mg/L 7.42, -92.2

Personnel: E. Tennyson
5/27/10

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls: Sample Time	Water Level (ft BTOC)	Weekly Field Parameters: pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
CS-MW-27	26 ~~17.0~~	5/27		10.42	7.06	20.31	0.535	-90.3	1.70	
CS-MW-28	27 TBD			6.83	6.97	21.93	0.526	-97.3	1.11	
CS-MW-29	28 TBD			dry	—	—	—	—	—	no water
CS-MW-30	29 TBD			12.38	7.27	20.60	0.389	-90.0	4.52	
CS-MW-31	30 TBD			21.34	~~7.27~~	~~20.60~~	—	—	—	Insufficient water
CS-MW-32	31 TBD			31.88	7.05	22.51	0.459	-80.9	4.20	
CS-MW-33	32 TBD			38.00	7.26	22.39	0.485	-76.5	4.92	
CS-MW-34	33 TBD			20.15	7.23	21.93	0.409	-74.5	5.22	
CS-MW-35	34 TBD			15.36	7.18	23.90	0.557	-87.2	2.98	

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01									
CS-D									
CS-MW16-LGR									
CS-MW16-CC									
CS-B3-EXW01									
CS-B3-EXW02									
CS-MW01-LGR									

Personnel	J. Bouch, E. Tennyson

Weekly Water Level Monitoring

Well Interval	Sampling Pnt Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	5-27-10	1027	14.10	14.07 14.15	23.00
CS-WB05-LGR-02	182		1026		14.11 14.22	55.89
CS-WB05-LGR-03A	216		1025		14.14 14.21	70.71
CS-WB05-LGR-03B	262		1024		16.17 24.02	90.64
CS-WB05-LGR-04A	277		1023		22.70 30.55	97.43
CS-WB05-LGR-04B	329		1022		45.33 53.16	120.06
CS-WB05-BS-01	362		1022		59.67 67.51	133.01
CS-WB05-CC-01	432		1021		90.08 97.92	131.02
CS-WB05-CC-02	460	↓	1020		102.24 110.05	143.43
CS-WB06-UGR-01	20	5-27-10	1107	14.12	14.04 14.13	17.94
CS-WB06-LGR-01	93		1105		14.07 14.17	28.33
CS-WB06-LGR-02	174		1104		14.11 14.21	62.82
CS-WB06-LGR-03A	207		1103		14.14 14.23	72.51
CS-WB06-LGR-03B	260		1102		21.60 25.01	95.41
CS-WB06-LGR-04	320	↓	1100		47.66 51.05	119.25
CS-WB07-UGR-01	14	5-27-10	1124	14.12	14.05 14.14	17.78
CS-WB07-LGR-01	90		1122		14.10 14.18	24.09
CS-WB07-LGR-02	175		1121		14.14 14.21	61.29
CS-WB07-LGR-03A	208		1120		14.17 14.24	72.51
CS-WB07-LGR-03B	257		1119		15.58 15.21	93.72
CS-WB07-LGR-04	318	↓	1117		42.13 41.73	118.43
CS-WB08-UGR-01	38	5-27-10	1051	14.12	14.03 14.13	19.53
CS-WB08-LGR-01	115		1049		14.08 14.16	23.95
CS-WB08-LGR-02	193		1047		14.12 14.21	56.73
CS-WB08-LGR-03A	228		1046		14.14 14.22	70.30
CS-WB08-LGR-03B	273		1045		18.87 26.23	89.75
CS-WB08-LGR-04	341	↓	1043		48.45 55.78	118.64

Bioreactor Monitoring

Personnel: A. Lindley, Tennyson

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (√)	Notes
Date: 6-4-10		Time: 1500							
B3-T1-1	12.9	5.37	6.97	23.90	0.636	-86.1	0.24		
B3-T1-2	12.4	5.09	6.70	24.56	0.784	-119.3	0.49	√	
B3-T1-3	12.85	4.85	7.25	23.48	0.628	-73.5	0.39		
B3-T2-1	9.67	6.83	6.75	24.69	0.771	-106.6	0.28		
B3-T2-2	10.01	7.14	6.36	25.60	1.637	-89.1	0.48	√	
B3-T3-1	9.96	9.20							
B3-T3-2	7.4	dry							
B3-T4-1	6.32	6.29							
B3-T5-1	9.33	9.28							
B3-T5-2	7.98	7.79							
B3-T6-1	11.45	11.08							
B3-T6-2	12.34	11.98							
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	~~Monday~~ Tues		~~Tuesday~~ Wed		~~Wednesday~~ Thurs		~~Thursday~~ Fri		~~Friday~~ Monday Holiday	
Date/Time:	6/1/10	1000	6/2/10	0745	6/3/10	0800	6.4.10	0830		
Rate (gpm) / Cumulative Total (gal)										
T-1	22.5	2705714	21.7	2,732,750	7.85	2753929	21.9	27 82596		
T-2	9.72	3,655,769	9.03	3,667,325	1.41	3,675,150	8.96	3686703		
T-3										
T-4										
T-5										
T-6										
B-3 (Total)							12.18			
CS-MW16-LGR	12.57	97,205	0.0	107,869	0.0	116,393	~~21.86~~	127,106		
CS-MW16-CC	21.83	624,400	0.0	643,105	0.0	658,155	21.86	677,241		
B3-EXW01	13.071	2717,777	0.0	2,728,854	0.0	2737110	13.895	2749281		
Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change filter.										
	PB-1 - PB-2 = 44 - 40 = 4		PB-1 - PB-2 = 45 - 40 = 5		PB-1 - PB-2 =		PB-1 - PB-2 = 46 - 40 = 6		PB-1 - PB-2 =	
Notes:	Tank 1/2 full		Tank 1/2 full		Tank = 5/8		Tank 3/4 full			

Personnel: Tennyson, Bosch

6-4-10

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls		Monthly Field Parameters					
			Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
CS-MW-[illegible] 26	17.0		1530	11.11	6.73	20.78	0.764	-70.7	1.70	
CS-MW-[illegible] 27	TBD		1542	7.28	6.60	22.33	0.816	-71.8	1.28	
CS-MW-[illegible] 28	TBD	6-4-10	1555	dry	–	–	–	–	–	dry
CS-MW-[illegible] 29	TBD		1604	14.32	6.96	20.81	0.601	-69.1	3.99	
CS-MW-[illegible] 30	TBD		1621	21.51	6.81	22.08	0.696	-68.4	4.83	slight turbidity
CS-MW-[illegible] 31	TBD		1634	32.70	6.76	22.70	0.640	-69.9	5.01	
CS-MW-[illegible] 32	TBD		1647	38.51	6.86	22.07	0.631	-68.9	6.51	
CS-MW-[illegible] 33	TBD		1700	20.66	6.76	21.04	0.578	-70.8	6.23	
CS-MW-[illegible] 34	TBD		1515	16.05	6.78	22.84	0.789	-74.4	3.86	

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01									
CS-D									
CS-MW16-LGR									
CS-MW16-CC									
CS-B3-EXW01									
CS-B3-EXW02									
CS-MW01-LGR									

Personnel: Tennyson, Bouch

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	6/4/10	1139	14.05	14.07 14.07	22.75
CS-WB05-LGR-02	182	"	1137		14.11 14.10	53.89
CS-WB05-LGR-03A	216		1135		14.14 14.16	68.35
CS-WB05-LGR-03B	262		1133		16.17 23.82	88.29
CS-WB05-LGR-04A	277		1131		22.70 30.43	94.68
CS-WB05-LGR-04B	329		1130		45.33 53.05	117.08
CS-WB05-BS-01	362		1128		59.67 67.39	131.36
CS-WB05-CC-01	432		1126		90.08 97.79	128.81
CS-WB05-CC-02	460		1124		102.24 109.93	141.37
CS-WB06-UGR-01	20		1224	14.01	14.04 14.03	17.54
CS-WB06-LGR-01	93		1222		14.07 14.05	25.44
CS-WB06-LGR-02	174		1220		14.11 14.10	59.80
CS-WB06-LGR-03A	207		1218		14.14 14.11	71.37
CS-WB06-LGR-03B	260		1216		21.60 24.88	94.26
CS-WB06-LGR-04	320		1214		47.66 50.99	116.50
CS-WB07-UGR-01	14			14.01	14.05 14.04	17.38
CS-WB07-LGR-01	90		1250		14.10 14.07	24.01
CS-WB07-LGR-02	175		1248		14.14 14.10	59.97
CS-WB07-LGR-03A	208		1246		14.17 14.14	70.76
CS-WB07-LGR-03B	257		1244		15.58 15.10	91.95
CS-WB07-LGR-04	318		1242		42.13 41.63	116.17
CS-WB08-UGR-01	38		1200	14.00	14.03 14.01	19.17
CS-WB08-LGR-01	115		1158		14.08 14.06	23.87
CS-WB08-LGR-02	193		1156		14.12 14.09	55.57
CS-WB08-LGR-03A	228		1154		14.14 14.13	68.00
CS-WB08-LGR-03B	273		1152		18.87 26.13	87.44
CS-WB08-LGR-04	341		1150		48.45 55.67	116.04

Week 162

Bioreactor Monitoring

Personnel: J Bouch, S Elliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (√)	Notes
Date: 6.11.10		Time: 1130							
B3-T1-1	12.9	5.35	6.91	24.52	0.661	-109.2	0.40		
B3-T1-2	12.4	5.08	6.87	24.90	0.716	-115.1	0.29		
B3-T1-3	12.85	4.85	7.38	26.10	0.614	-80.3	0.37	✓	
B3-T2-1	9.67	6.78	6.78	25.27	0.775	-103.7	0.61		
B3-T2-2	10.01	7.12	6.48	26.24	1.658	-96.9	0.57	✓	
B3-T3-1	9.96	9.04							
B3-T3-2	7.40	DRY							
B3-T4-1	6.32	DRY							
B3-T5-1	9.33	~~7.71~~ (void)	9.30						
B3-T5-2	7.98	7.76							
B3-T6-1	11.45	11.03							
B3-T6-2	12.34	11.96							
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	6.7.10	0845	6.8.10	1100	6.9.10	0900	6.10.10	851	6.11.10	0911
Rate (gpm) / Cumulative Total (gal)										
T-1	22.6	2869997	22.3	2903779	21.8	2932010	21.1	2962489	23.6	2993757
T-2	8.77	3,720,660	9.65	3734216	10.0	3746793	9.27	3760315	9.60	3774054
T-3										
T-4										
T-5										
T-6										
B-3 (Total)										
CS-MW16-LGR	12.01	159226	0	171364	11.56	181918	11.39	197434	0	202584
CS-MW16-CC	22.36	734754	0	756763	21.96	776216	21.44	805303	21.23	835074
B3-EXW01	13.813	2785679	0	2799575	0	2810775	0	2810775	0	2810775

2,824,471

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change filter.

PB-1 - PB-2 = 49 - 39 = 10	PB-1 - PB-2 = 42 - 42 = 0	PB-1 - PB-2 = 42 - 42 = 0	PB-1 - PB-2 = 42 - 42 = 0	PB-1 - PB-2 = 42 - 42 = 0

Notes: MW16LGR - 97.44
MW16CC - 182.03
B3-EXW01 - 139.00

Tank is 3/4 full

Tank is 3/4 full

Tank is 1/2 full
B3EXW01 well is off due to reconstruction
EXW02 filtered DW
Week 6/3 water into Trench 1
2,275 gal

Tank is 1/2 full
Turned on extraction well
B3EXW02 - DW water
2010 gal

Tank is 3/4 full

Tank is 3/4 full changed BF

Personnel: J. Bouchy; S. Elliott

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls		Monthly Field Parameters					Notes
			Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	
CS-MW26	20.32 TBD	6/10/10	1236	11.54	6.80	19.59	0.743	-68.5	0.56	
CS-MW27-UGR	17.0		1244	7.31	6.78	21.35	0.820	-69.60	0.46	
CS-MW28	~~TBD~~ 18.33		1250	dry						
CS-MW29	~~TBD~~ 20.40		1252	15.34	7.17	21.89	0.599	-67.5	4.21	
CS-MW30	~~TBD~~ 23.9		1300	22.55	7.01	22.76	0.695	-67.0	5.09	
CS-MW31	39.06 TBD		1200	33.13	7.09	22.71	0.637	-87.2	3.85	
CS-MW32	58.45 TBD		1212	38.87	7.05	22.63	0.611	-76.6	6.10	
CS-MW33	29.55 TBD		1223	21.05	7.00	21.60	0.574	-71.3	~~5.59~~ (DUP) 5.49	
CS-MW34	25.40 TBD		1231	16.70	6.83	21.85	0.706	-71.2	1.50	

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01									
CS-D									
CS-MW16-LGR									
CS-MW16-CC									
CS-B3-EXW01									
CS-B3-EXW02									
CS-MW1-LGR									

Week 163

Personnel	J. Bouch & S. Elliott

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	6-11-10	0933	14.05	14.07 14.09	22.29
CS-WB05-LGR-02	182		0932		14.11 14.13	51.14
CS-WB05-LGR-03A	216		0931		14.14 14.17	65.58
CS-WB05-LGR-03B	262		0930		16.17 23.90	85.53
CS-WB05-LGR-04A	277		0929		22.70 30.43	91.61
CS-WB05-LGR-04B	329		0929		45.33 53.06	113.96
CS-WB05-BS-01	362		0928		59.67 67.40	128.81
CS-WB05-CC-01	432		0927		90.08 97.81	120.37
CS-WB05-CC-02	460		0926		102.24 109.95	132.77
CS-WB06-UGR-01	20		0959	14.06	14.04 14.05	17.44
CS-WB06-LGR-01	93		0958		14.07 14.11	21.79
CS-WB06-LGR-02	174		0957		14.11 14.13	55.51
CS-WB06-LGR-03A	207		0956		14.14 14.17	68.66
CS-WB06-LGR-03B	260		0955		21.60 24.88	91.48
CS-WB06-LGR-04	320		0954		47.66 50.95	113.40
CS-WB07-UGR-01	14		1012	14.05	14.05 14.07	17.33
CS-WB07-LGR-01	90		1010		14.10 14.10	22.75
CS-WB07-LGR-02	175		1009		14.14 14.13	57.57
CS-WB07-LGR-03A	208		1006		14.17 14.17	67.51
CS-WB07-LGR-03B	257		1008		15.58 15.14	88.71
CS-WB07-LGR-04	318		1007		42.13 41.65	112.67
CS-WB08-UGR-01	38		0944	14.04	14.03 14.07	19.07
CS-WB08-LGR-01	115		0944		14.08 14.09	23.27
CS-WB08-LGR-02	193		0943		14.12 14.13	53.21
CS-WB08-LGR-03A	228		0942		14.14 14.17	65.04
CS-WB08-LGR-03B	273		0941		18.87 26.15	84.48
CS-WB08-LGR-04	341	V	0941		48.45 55.69	113.65

SWMU B-3 Tree Mulch Bioreactor

Bioreactor Monitoring

Personnel: J. Bauch; S. Elliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp (deg. C)	SpCond (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (✓)	Notes
Date: 6.16.10		Time: 1315							
B3-T1-1	12.9	7.70	6.84	24.47	0.664	-155.9	0.14		
B3-T1-2	12.4	7.37	6.62	24.57	0.840	-140.5	0.23	✓	
B3-T1-3	12.85	6.99	6.94	25.12	0.667	-170.7	0.22		
B3-T2-1	9.67	8.67	6.61	25.44	0.728	-118.1	0.17		
B3-T2-2	10.01	8.58	6.28	26.68	1.686	-108.4	0.34	✓	
B3-T3-1	9.96	9.16							
B3-T3-2	7.4	DRY							
B3-T4-1	6.32	DRY							
B3-T5-1	9.33	DRY							
B3-T5-2	7.98	7.85							
B3-T6-1	11.45	11.07							
B3-T6-2	12.34	11.94							
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	6.14.10	1200	6.15.10	0900	6.16.10	1050	6.17.10	1430	6-18-10	1230
Rate (gpm) / Cumulative Total (gal)										
T-1	22.1	3089,024	22.3	3,115609	0	3,829435	22.4	3153254	21.8	3,180,200
T-2	9.34	3,814,492	9.17	3,828,109	0	3,124,872	10.8	3,840,613	8.8	3,851,520
T-3										
T-4										
T-5										
T-6										
B-3 (Total)										
CS-MW16-LGR	0	233,728	0	242,554	0	244,832	10.64	254,470	not pumping	264450
CS-MW16-CC	0	901,621	0	919,128	0	923,711	22.16	945,000		964,210
B3-EXW01	0	2,865,128	14.02	2876116	0	2878954	13.29	289,821		2903,656

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change filter.

PB-1 - PB-2 = 44-41=3	PB-1 - PB-2 = 44-40=4	PB-1 - PB-2 = 0-0=0	PB-1 - PB-2 = 32-28=4	PB-1 - PB-2 = 50-35=15

Notes: MW16-LGR = ~~112.30~~ 127.1'
MW16-CC = ~~118.54~~ 143.5'
B3EXW01 = ~~111.70~~ 109.7'
B3EXW02 = 106.34' btoc
103.34' bgs
Tank 3/4 full

MW16-LGR = 112.60
MW16-CC = 169.50
B3EXW01 = 108.40
Tank is 1/2 full

Tank is empty
Controls were off at screen - turned on
Week 164
MW16LGR - 134.3
MW16CC - 223.4
B3EXW01 - 152.0

tank 1/2 full

tank 5/8 full, T/P running, changed BFU filter.
16LGR - 121.19'
ICC - 174.25'
Ex02 - 116.80

Personnel	SE & AL

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	6.15.10	1407	14.12	14.09 14.15	22.11
CS-WB05-LGR-02	182		1406		14.13 14.21	45.88
CS-WB05-LGR-03A	216		1405		14.17 14.23	60.15
CS-WB05-LGR-03B	262		1404		23.90 23.91	80.07
CS-WB05-LGR-04A	277		1403		30.43 30.44	86.24
CS-WB05-LGR-04B	329		1402		53.06 53.07	108.62
CS-WB05-BS-01	362		1401		67.40 67.42	124.88
CS-WB05-CC-01	432		1400		97.81 97.82	125.58
CS-WB05-CC-02	460		1359		109.95 109.97	138.08
CS-WB06-UGR-01	20		1435	14.11	14.05 14.11	17.39
CS-WB06-LGR-01	93		1434		14.11 14.15	19.36
CS-WB06-LGR-02	174		1433		14.13 14.16	52.32
CS-WB06-LGR-03A	207		1432		14.17 14.21	66.08
CS-WB06-LGR-03B	260		1430		24.88 24.93	88.98
CS-WB06-LGR-04	320		1429		50.95 50.97	109.15
CS-WB07-UGR-01	14		1449	14.10	14.07 14.09	17.16
CS-WB07-LGR-01	90		1448		14.10 14.13	21.58
CS-WB07-LGR-02	175		1447		14.13 14.17	55.39
CS-WB07-LGR-03A	208		1446		14.17 14.20	63.64
CS-WB07-LGR-03B	257		1445		15.14 15.16	84.84
CS-WB07-LGR-04	318		1444		41.65 41.68	107.50
CS-WB08-UGR-01	38		1421	14.11	14.07 14.12	18.91
CS-WB08-LGR-01	115		1420		14.09 14.14	23.08
CS-WB08-LGR-02	193		1419		14.13 14.18	30.33
CS-WB08-LGR-03A	228		1418		14.17 14.22	60.68
CS-WB08-LGR-03B	273		1417		26.15 26.18	80.11
CS-WB08-LGR-04	341	↓	1416		55.69 55.73	109.51

Personnel: J. Bouch; S. Elliott

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls		Monthly Field Parameters					Notes
			Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	
CS-MW26	20.32	6.16.10	1430	[illegible] 12.23	6.50	21.58	0.753	-56.9	1.06	
CS-MW27-UGR	17.00		1430	7.89	6.42	21.54	0.822	-58.3	0.32	
CS-MW28	18.33			dry						
CS-MW29	20.40			15.96	6.80	21.50	0.602	-57.8	2.70	
CS-MW30	23.90		1441	21.68	6.64	21.10	0.696	-56.4	3.74	
CS-MW31	39.06	6.16.10	1355	33.47	6.84	24.25	0.644	-63.2	1.92	
CS-MW32	58.45		1403	39.66	6.77	22.56	0.615	-58.6	5.0	
CS-MW33	29.55		1410	22.55	6.67	21.06	0.604	-56.5	5.52	
CS-MW34	25.40	JNE	1420	17.54	6.50	21.39	0.691	-56.3	1.03	

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01									
CS-D									
CS-MW16-LGR									
CS-MW16-CC									
CS-B3-EXW01									
CS-B3-EXW02									
CS-MW1-LGR									

SWMU B-3 Tree Mulch Bioreactor

Bioreactor Monitoring

Personnel: J. Bouch

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (√)	Notes
Date: 6.22.10		Time: 0845							
B3-T1-1	12.9	6.54	6.76	24.66	0.704	-157.6	0.39		@ 0910
B3-T1-2	12.4	6.34	6.91	24.69	0.829	-142.7	0.20		@ ~~1025~~ 1010
B3-T1-3	12.85	6.29	7.05	24.95	0.658	-62.16	0.29	✓	@ 1040
B3-T2-1	9.67	7.97	6.85	25.54	0.779	-137.8	0.36		@ 0925
B3-T2-2	10.01	8.28	6.54	27.49	1.749	-108.0	0.54	✓	@ 0947
B3-T3-1	9.96	9.17							
B3-T3-2	7.4	dry							
B3-T4-1	6.32	dry							
B3-T5-1	9.33	dry							
B3-T5-2	7.98	7.81							
B3-T6-1	11.45	11.06							
B3-T6-2	12.34	11.94							
B3-UIC			7.21	23.52	0.631	-20.8	4.03		@ 0900

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	6.21.10	1000	6.22.10	0840	6.23.10	0830	6.24.10	0835	6.25.10	1000
Rate (gpm) / Cumulative Total (gal)										
T-1	22.3	3270427	22.8	3290089	0	3302776	0	3311010	22.4	3342942
T-2	9.64	3897776	10.1	3903662	0	3904803	0	3907737	9.90	3920863
T-3										
T-4										
T-5										
T-6										
B-3 (Total)										
CS-MW16-LGR	11.0	296464	10.78	306957	0	307303	11.29	311273	0	323770
CS-MW16-CC	21.12	3.02	21.2	20581	0	21261	(MW) ~~23.0~~	29085	0	33830
B3-EXW01	0	2944226	0	2956006	0	2956006	14 ~~0~~	2956589	0	2971508

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change fliter.

	Monday	Tuesday	Wednesday	Thursday	Friday
PB-1 - PB-2 =	42-42=0	42-42=0	42-42=0	0-0=0	42-42=0
Notes:	MW16 LGR = 146.75 MW16 CC = 253.27 B3EXW01 = 162.00	MW16 LGR = 148.30 MW16 CC = 258.01 B3EXW01 = 163.90	System off Turned the wells on in hand.	Turned wells on by hand (the wells and B3EXW01)	Tank is 3/4 full MW16 LGR = 132.92 MW16 CC = 186.40 B3EXW01 = 127.50

Tank is 9/16 full

Tank is 3/4 full
All wells and TP shut off @ 0915am

Turned off wells and TP @ 1445
Week

*Turned on all wells in auto @ 0900 for the wells
0945 for B3EXW01

Personnel: J. Bouch; J. Kirk

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)	
CS-WB05-LGR-01	99	6/24/10	0927	14.12	14.09 14.18	21.90	
CS-WB05-LGR-02	182		0926		14.13 14.24	40.96	
CS-WB05-LGR-03A	216		0925		14.17 14.26	55.12	14.01 / sample time 1045
CS-WB05-LGR-03B	262	6.21.10	0924		23.90 23.92	75.09	25.84 / 75.00
CS-WB05-LGR-04A	277		0923		30.43 30.44	81.11	
CS-WB05-LGR-04B	329		0922		53.06 53.06	103.37	
CS-WB05-BS-01	362		0921		67.40 67.41	119.50	
CS-WB05-CC-01	432		0920		97.81 97.80	131.87	
CS-WB05-CC-02	460		0920		109.95 109.94	144.54	
CS-WB06-UGR-01	20		0857	14.07	14.05 14.12	16.88	
CS-WB06-LGR-01	93		0856		14.11 14.17	16.68	
CS-WB06-LGR-02	174		0855		14.13 14.23	48.76	
CS-WB06-LGR-03A	207		0854		14.17 14.27	62.18	14.01 / 1406 Sample time
CS-WB06-LGR-03B	260	6.21.10	0853		24.88 ~~24.37~~	25.54 / 85.08	27.37 / 85.15
CS-WB06-LGR-04	320		0852		50.95 51.59	104.71	
CS-WB07-UGR-01	14		0910	14.14	14.07 14.13	16.40	
CS-WB07-LGR-01	90		0909		14.10 14.17	18.72	
CS-WB07-LGR-02	175		0908		14.13 14.21	51.71	13.99 / sample time
CS-WB07-LGR-03A	208		0907		14.17 14.26	58.62	~~13.99~~ 1500
CS-WB07-LGR-03B	257	6.21.10	0906		15.14 15.19	79.22	17.03 / 80.08
CS-WB07-LGR-04	318		0905		41.65 41.71	101.85	
CS-WB08-UGR-01	38		0939	14.14	14.07 14.16	18.39	
CS-WB08-LGR-01	115		0938		14.09 14.19	22.99	
CS-WB08-LGR-02	193		0937		14.13 14.23	44.92	
CS-WB08-LGR-03A	228		0937		14.17 14.25	55.46	sample time 14.0 / 1200
CS-WB08-LGR-03B	273	6.21.10	0936		26.15 26.21	74.92	27.61 / 75.08
CS-WB08-LGR-04	341	↓	0935		55.69 55.76	103.86	

Personnel: J. Bouch; S. Elliott

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls		Monthly Field Parameters					
			Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW26-UGR	20.32	6.23.10	1120	12.91	6.53	20.72	0.776	-76.0	1.95	wells sampled
B3-MW27-UGR	17.00	6.23.10	1140	8.55	6.61	22.40	0.823	-57.5	1.39	w/ bailer
B3-MW28-UGR	18.33	6.23.10	~~1155~~	DRY						
B3-MW29-UGR	20.40	6.23.10	1155	16.54	7.05	21.08	0.603	-52.2	2.49	
B3-MW30-UGR	23.90	6.23.10	1220	22.02	6.96	21.31	0.711	-47.4	4.30	
B3-MW31-UGR	39.06	6.23.10	0850	33.61	6.81	21.76	0.668	-30.6	1.63	
B3-MW32-UGR	58.45	6.23.10	0915	40.34	7.10	22.22	0.496	3.4	6.10	
B3-MW33-UGR	29.55	6.23.10	1040	23.37	6.87	22.63	0.610	-13.7	4.10	
B3-MW34-UGR	25.40	6.23.10	1100	18.32	6.75	21.50	0.710	-47.7	1.21	

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01									
CS-D									
CS-MW16-LGR									
CS-MW16-CC									
CS-B3-EXW01									
CS-B3-EXW02									
CS-MW1-LGR									

Week 165

SWMU B-3 Tree Mulch Bioreactor

Bioreactor Monitoring

Personnel: J. Bouch ; S. Elliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (√)	Notes
Date: 6.29.10		Time: 1015							
B3-T1-1	12.9	8.05	6.65	25.36	0.764	-182.4	0.51	√	
B3-T1-2	12.4	7.55	6.74	24.92	0.736	-177.3	0.41		
B3-T1-3	12.85	5.84	6.87	28.63	0.695	-98.7	0.42		
B3-T2-1	9.67	9.09	6.52	26.21	0.848	-147.2	0.60		
B3-T2-2	10.01	9.00	6.26	28.63	1.544	-28.2	0.60		
B3-T3-1	9.96	9.19							
B3-T3-2	7.4	DRY							
B3-T4-1	6.32	DRY							
B3-T5-1	9.33	~~7.79~~	DRY						
B3-T5-2	7.98	7.79							
B3-T6-1	11.45	11.08							
B3-T6-2	12.34	11.39	6.61	26.19	1.230	-169.0	0.68	√	
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	6.28.10	0935	6.29.10	0855	6.30.10	0945	7.1.10	1400	7.2.10	0812
Rate (gpm) / Cumulative Total (gal)										
T-1	23.1	3435054	19.2	3473313	47.1	3520161	50	3566337	19.2	3596891
T-2	8.87	3960263	~~4.12~~ (JPR)	~~24413~~	~~46.8~~ (JPR)	~~46~~				
T-3										
T-4										
T-5										
T-6	49	122.5	4.12	24413	46.8	64437	46.0	88689	393	108,227
B-3 (Total)										
CS-MW16-LGR	0	357311	10.78	372062	26.69	410,193	27.30	423252	27.47	444916
CS-MW16-CC	0	118480	21.14	147580	29.30	189980	24.30	231290	25.10	250171
B3-EXW01	0	3010934	12.37	3028624	12.16	3,046853	12.0	3,052457	12.4	3061964

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change fliter.

Monday	Tuesday	Wednesday	Thursday	Friday
PB-1 - PB-2 = 45-42=3	PB-1 - PB-2 = 0-0=0	PB-1 - PB-2 = 42-20=12	PB-1 - PB-2 = 38-38=0	PB-1 - PB-2 = 0-0=0
Notes: B3EXW01 - 136.50 MW16CC - 201.84 MW16LGR - 139.44	MW16CC - 279.21 MW16LGR = 160.32 B3EXW01 = 173.40	MW16CC - 334.12 MW16LGR - 210.40 B3EXW01 - 175.10	16LGR = 209.21 16CC = 304.39 B3EXW01 = 172.80 Tank is 3/4 full *System working in Auto	MW16 LGR - 208.21 MW16CC - 295.10 B3EXW01 - 173.70 Tank is 1/4 full

Tank is 3/4 full
* back *

Tank is 7/16
CC→ adjusted to 30.2
LGR→ = 27.64

Week 166
Tank is 3/4 full
changed BF
— dropped pressure in 16CC to 23 0 — wells off
System off, running in hand
Run 16CC only overnite – 22 gpm in hand.

@ 0950

* per Ken Rice — Closed Trench 2 opened Trench 6 Opened valve at the end of Trench 1. Recirculation Valve is at about 1/2 — open. Pressure at bag filter is 42-40 = 2.

T1 GPM @ 50

T6 GPM @ 50

MW16CC

8, to check system 125270/21.45

MW16GR

360768/10.95

T1 19.4 / 3445112

T6 3.66 / 7196

Tank is 1/4 full

T1-1 7.50

T1-2 7.13

T1-3 6.10

T6-1 11.09

T6 2 11.70

B3EXW01 12.92/3015472

6/28 water samp @ 0920

Personnel	S. Elliott & T. Beuch

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	6.29.10	0951	14.05	14.07 14.11	21.79
CS-WB05-LGR-02	182		0950		14.11 14.15	36.71
CS-WB05-LGR-03A	216		0949		14.14 14.18	49.41
CS-WB05-LGR-03B	262		0948		16.17 23.80	69.37
CS-WB05-LGR-04A	277		0948		22.70 30.32	75.35
CS-WB05-LGR-04B	329		0946		45.33 52.95	97.87
CS-WB05-BS-01	362		0945		59.67 67.24	114.81
CS-WB05-CC-01	432		0944		90.08 97.68	110.88
CS-WB05-CC-02	460		0943		102.24 109.83	123.33
CS-WB06-UGR-01	20		0921	14.07	14.04 14.08	16.79
CS-WB06-LGR-01	93		0920		14.07 14.11	16.58
CS-WB06-LGR-02	174		0919		14.11 14.15	46.67
CS-WB06-LGR-03A	207		0918		14.14 14.19	59.49
CS-WB06-LGR-03B	260		0917		21.60 25.43	82.38
CS-WB06-LGR-04	320		0916		47.66 51.49	98.55
CS-WB07-UGR-01	14		0934	14.06	14.05 14.06	16.47
CS-WB07-LGR-01	90		0933		14.10 14.12	18.30
CS-WB07-LGR-02	175		0932		14.14 14.16	49.44
CS-WB07-LGR-03A	208		0931		14.17 14.18	54.14
CS-WB07-LGR-03B	257		0931		15.58 15.10	75.33
CS-WB07-LGR-04	318		0930		42.13 41.62	95.68
CS-WB08-UGR-01	38		1004	14.05	14.03 14.07	18.37
CS-WB08-LGR-01	115		1003		14.08 14.10	22.78
CS-WB08-LGR-02	193		1002		14.12 14.15	42.04
CS-WB08-LGR-03A	228		1002		14.14 14.19	50.67
CS-WB08-LGR-03B	273		1001		18.87 26.13	70.13
CS-WB08-LGR-04	341	√	1000		48.45 55.67	99.16

Personnel: J. Bouch ; S. Elliott

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls		Monthly Field Parameters					
			Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW26-UGR	20.32	6.29.10	1121	13.30	6.62	20.70	0.780	-98.4	1.72	
B3-MW27-UGR	17.00		1126	9.11	6.54	21.64	0.820	-110.9	1.43	
B3-MW28-UGR	18.33		1129	dry						
B3-MW29-UGR	20.40		1133	17.75	6.85	20.81	0.606	-57.4	2.17	
B3-MW30-UGR	23.90		1139	22.72	6.67	20.67	0.715	-54.4	5.14	
B3-MW31-UGR	39.06		1103	34.20	6.93	22.77	0.689	-63.9	1.12	
B3-MW32-UGR	58.45		1109	40.62	7.03	22.27	0.543	-57.1	5.54	
B3-MW33-UGR	29.55		1113	23.67	6.78	21.29	0.619	-57.0	3.70	
B3-MW34-UGR	25.40	↓	1117	18.62	6.61	21.27	0.716	-79.9	1.27	

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01									
CS-D									
CS-MW16-LGR									
CS-MW16-CC									
CS-B3-EXW01									
CS-B3-EXW02									
CS-MW1-LGR									

Week 164

SWMU B-3 Tree Mulch Bioreactor

Bioreactor Monitoring

Personnel: J. Bouch; K. Rice; E. Tennyson, Elliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (√)	Notes
Date: 7.7.10		Time: 1105							
B3-T1-1	12.9	7.30	6.74	25.14	0.861	-171.1	0.70		
B3-T1-2	12.4	6.92	6.65	24.98	0.851	-122.8	0.62		
B3-T1-3	12.85	6.45	6.94	23.73	0.602	-54.9	0.54	✓	
B3-T2-1	9.67	8.78	6.53	27.42	1.040	-127.2	0.63		
B3-T2-2	10.01	9.05	6.38	29.59	1.216	-112.5	0.69		
B3-T3-1	9.96	9.20							
B3-T3-2	7.4	DRY							
B3-T4-1	6.32	DRY							
B3-T5-1	9.33	DRY							
B3-T5-2	7.98	7.80							
B3-T6-1	11.45	10.95							
B3-T6-2	12.34	11.07	7.08	27.34	0.678	-165.0	0.54	✓	
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	7.5.10	0745	7.6.10	0915	7.7.10	0951	7.8.10	0820	7.9.10	0750
	Rate (gpm) / Cumulative Total (gal)									
T-1	22.5	3,698,756	21.9	3,720,37	21.6	3,759,854	20.5	3,798,510	21.2	3818403
T-2										
T-3										
T-4										
T-5										
T-6	26.1	222,176	26.3	261,489	31.2	297,330	30.2	335,404	32.8	359,839
B-3 (Total)										
CS-MW16-LGR	0	535421	27.64	565,324	27.08	595,480	26.97	629,585	16.42	646,106
CS-MW16-CC	could not read		on - could not read		on - could not read		can't read meter		meter out	
B3-EXW01	0	3101674	12.73	3,115281	0	3,129507	12.35	3,144,207	0	3154200

← 25 gpm last Friday

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change fliter.

PB-1 - PB-2 = 46 - 38 = 8	PB-1 - PB-2 = 46 - 36 = 10	PB-1 - PB-2 = 42 - 42 = 0	PB-1 - PB-2 = 40 - 38 = 2	PB-1 - PB-2 = 42 - 42

Notes:
- Tank is 3/4 full
- MW16 LGR = 147.57
- MW16 CC = 223.07
- B3EXW01 = 135.90

- MW16LGR = 203.04
- MW16 CC = 297.49
- B3EXW01 = 171.00
- Tank is 9/16 full changed bF
- pumped 310 gal T1-3 to T6-2.

- Tank is 3/4 full
- MW16 LGR - 204.91
- MW16 CC - 331.29
- B3EXW01 - 173.30
- Week 167
- Pumped 240 gal T1-3 to T6-1. (84 gal into T6-1, 290 gal into T6-2)

- tank overflowing TP on, wells running SCADA is awesome!
- -16 wells turned off @ 0830 until SCI can look at it
- -LGR turned back on @1043
- -SC turned back on @1415

- ~54 gpm going on B-3
- ~45 gpm being pumped
- -in an attempt to balance system, pinched 16-LGR back 10 gpm
- bag filter changed

Personnel: J. Bouch; E. Tennyson

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	7.7.10	1012		14.09 14.11	21.64
CS-WB05-LGR-02	182		1011		14.13 14.14	34.16
CS-WB05-LGR-03A	216		1010		14.17 14.17	42.77
CS-WB05-LGR-03B	262		1009		23.90 23.77	67.16
CS-WB05-LGR-04A	277		1008	14.01	30.43 30.28	73.86
CS-WB05-LGR-04B	329		1006		53.06 52.91	96.50
CS-WB05-BS-01	362		1005		67.40 67.26	112.73
CS-WB05-CC-01	432		1003		97.81 97.65	103.24
CS-WB05-CC-02	460	↓	1002		109.95 109.81	115.91
CS-WB06-UGR-01	20		1042		14.05 14.07	17.47
CS-WB06-LGR-01	93		1041		14.11 14.09	16.45
CS-WB06-LGR-02	174		1040	14.06	14.13 14.14	45.01
CS-WB06-LGR-03A	207		1039		14.17 14.17	57.79
CS-WB06-LGR-03B	260		1038		24.88 25.42	80.69
CS-WB06-LGR-04	320	↓	1035		50.95 51.48	98.48
CS-WB07-UGR-01	14		1059		14.07 14.05	16.56
CS-WB07-LGR-01	90		1057		14.10 14.09	18.01
CS-WB07-LGR-02	175		1056	14.05	14.13 14.13	46.26
CS-WB07-LGR-03A	208		1054		14.17 14.16	51.96
CS-WB07-LGR-03B	257		1053		15.14 15.11	73.15
CS-WB07-LGR-04	318	↓	1050		41.65 41.62	95.84
CS-WB08-UGR-01	38		1029		14.07 14.05	18.57
CS-WB08-LGR-01	115		1027		14.09 14.12	22.79
CS-WB08-LGR-02	193		1025		14.13 14.14	39.27
CS-WB08-LGR-03A	228		1024	14.06	14.17 14.16	49.93
CS-WB08-LGR-03B	273		1023		26.15 26.10	69.39
CS-WB08-LGR-04	341	↓	1021		55.69 55.66	98.64

Personnel: Bouch, Tennyson

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls		Weekly ~~Monthly~~ Field Parameters					
			Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW26-UGR	20.32	7-7-10	1425	13.20	6.76	21.81	0.783	-76.2	2.25	clear.
B3-MW27-UGR	~~17.00~~ 19.92		1450	8.80	6.65	26.44	0.833	-53.5	1.83	water very cloudy.
B3-MW28-UGR	18.33		1500	dry						-
B3-MW29-UGR	20.40		1510	18.05	6.96	22.91	0.628	-47.4	2.21	cloudy.
B3-MW30-UGR	23.90		1525	22.70	6.84	23.15	0.744	-45.9	4.03	lightly muddy.
B3-MW31-UGR	39.06		1540	33.11	6.74	24.38	0.712	-47.6	2.18	very cloudy.
B3-MW32-UGR	58.45		1555	41.45	6.94	24.17	0.591	-46.7	5.14	clear.
B3-MW33-UGR	29.55		1605	23.38	6.74	23.75	0.631	-45.8	3.57	slightly cloudy.
B3-MW34-UGR	25.40	↓	1620	18.41	6.60	23.76	0.775	-49.5	1.98	clear.

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01									
CS-D									
CS-MW16-LGR									
CS-MW16-CC									
CS-B3-EXW01									
CS-B3-EXW02									
CS-MW1-LGR									

Week 167

SWMU B-3 Tree Mulch Bioreactor

Bioreactor Monitoring

Personnel: Elliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp (deg. C)	SpCond (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (√)	Notes
Date: 7-14-10		Time: 0830							
B3-T1-1	12.9	8.89	6.55	25.74	0.913	-311.6	0.37		* Using new longer probe end w/ all new sensors
B3-T1-2	12.4	8.47	6.53	24.68	0.844	-299.1	0.77	✓	
B3-T1-3	12.85	8.07	6.64	24.69	0.720	-307.6	0.31		
B3-T2-1	9.67	9.26							
B3-T2-2	10.01	9.62							
B3-T3-1	9.96	9.18							
B3-T3-2	7.4	dry							
B3-T4-1	6.32	dry							
B3-T5-1	9.33	dry							
B3-T5-2	7.98	7.87							
B3-T6-1	11.45	11.20							
B3-T6-2	12.34	11.14	6.53	25.85	0.887	-307.2	0.47	✓	
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	7.12.10		7.13.10	0815	7.14.10	0825	7.15.10	0800	7.16.10	1050
	Rate (gpm) / Cumulative Total (gal)									
T-1	7.67/20.5	3,877,216	7.68/20.7	3,897,083	20.5	3,916,469	19.5	3,934,790	20.1	3954926
T-2										
T-3										
T-4										
T-5										
T-6	5.84/32.4	434,737	4.72/30.6	459,430	32.2	484,520	30.6	508,188	32.8	533620
B-3 (Total)										
CS-MW16-LGR	14.43	681,373	14.86	692,936	15.25	704,706	14.74	715,849	not pumping	728832
CS-MW16-CC	meter out →				31.48/27.22	0	25.26	18,991	"	41561
B3-EXW01	12.58	3,184,000	12.9	3,193,952	0	3,204,029	0	3,213,838	"	3225548
	Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change filter.									
	PB-1 - PB-2 = 42-40		PB-1 - PB-2 = 42-40		PB-1 - PB-2 = 42-40		PB-1 - PB-2 = 43-39		PB-1 - PB-2 = 43-39 = 4	
Notes:	MW16-LGR = 146.7 MW16-CC = 208.9 tank = 1/2 full		Quick trends not working		- tank 1/2 full - MW16 wells turned off @ 1038 for meter replacement - wells turned back on @ 1131		tank 1/2 full - MW16 wells off temp. for leak repair		tank 11/16 full; syst. cycling normally.	

Week 168

* adjusted to balance system

Personnel	Elliott

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	7.15.10	0820	14.11	14.09 14.16	21.57
CS-WB05-LGR-02	182		0819		14.13 14.21	31.27
CS-WB05-LGR-03A	216		0818		14.17 14.24	43.87
CS-WB05-LGR-03B	262		0817		23.90 23.81	63.81
CS-WB05-LGR-04A	277		0816		30.43 30.34	70.15
CS-WB05-LGR-04B	329		0816		53.06 52.95	92.88
CS-WB05-BS-01	362		0815		67.40 67.30	108.90
CS-WB05-CC-01	432		0814		97.81 97.70	111.20
CS-WB05-CC-02	460		0813		109.95 109.84	123.00
CS-WB06-UGR-01	20		0851	14.15	14.05 14.16	17.32
CS-WB06-LGR-01	93		0850		14.11 14.18	16.49
CS-WB06-LGR-02	174		0850		14.13 14.23	43.30
CS-WB06-LGR-03A	207		0849		14.17 14.26	55.35
CS-WB06-LGR-03B	260		0848		24.88 25.47	78.24
CS-WB06-LGR-04	320		0847		50.95 51.54	93.22
CS-WB07-UGR-01	14		0906	14.14	14.07 14.14	16.16
CS-WB07-LGR-01	90		0905		14.10 14.18	17.93
CS-WB07-LGR-02	175		0904		14.13 14.23	43.39
CS-WB07-LGR-03A	208		0903		14.17 14.26	48.34
CS-WB07-LGR-03B	257		0903		15.14 15.19	69.54
CS-WB07-LGR-04	318		0902		41.65 41.70	90.47
CS-WB08-UGR-01	38		0836	14.14	14.07 14.15	18.39
CS-WB08-LGR-01	115		0835		14.09 14.20	22.90
CS-WB08-LGR-02	193		0834		14.13 14.23	37.08
CS-WB08-LGR-03A	228		0833		14.17 14.26	45.53
CS-WB08-LGR-03B	273		0832		26.15 26.17	64.99
CS-WB08-LGR-04	341		0831		55.69 55.72	94.95

Week 168

Personnel: Elliott

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls		Monthly Field Parameters					
			Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW26-UGR	20.32	7.14.10	0950	13.53	6.55	19.48	0.816	-259.2	0.56	* using new longer
B3-MW27-UGR	17.00		0957	9.27	6.59	22.73	0.842	-151.9	0.22	probe end w/ all
B3-MW28-UGR	18.33			dry						new sensors
B3-MW29-UGR	20.40		1005	18.32	7.00	19.69	0.642	78.1	0.68	
B3-MW30-UGR	23.90		1012	22.91	6.88	20.40	0.772	90.5	3.69	
B3-MW31-UGR	39.06		0919	33.59	6.77	21.17	0.722	89.9	0.50	
B3-MW32-UGR	58.45		0927	44.28	5.71	21.07	0.579	-50.7	2.43	
B3-MW33-UGR	29.55		0935	23.85	6.89	20.26	0.641	95.5	3.03	
B3-MW34-UGR	25.40		0941	18.84	6.48	20.60	0.766	-137.9	0.27	

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01									
CS-D									
CS-MW16-LGR									
CS-MW16-CC									
CS-B3-EXW01									
CS-B3-EXW02									
CS-MW1-LGR									

Week 168

SWMU B-3 Tree Mulch Bioreactor

Bioreactor Monitoring

Personnel: J Bouch; W. Butler

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (Y)	Notes
Date: 7.20.10		Time: 1043							
B3-T1-1	12.9	9.41	6.50	25.64	0.664	-279.3	0.13	✓	@ 1050
B3-T1-2	12.4	9.03	6.56	24.66	0.620	-259.6	0.17		@ 1210
B3-T1-3	12.85	8.66	6.58	25.43	0.605	-245.9	0.11	✓	@ ~~1235~~ 0840 (7.21.10)
B3-T2-1	9.67	DRY							
B3-T2-2	10.01	9.93							
B3-T3-1	9.96	9.20	6.44	30.16	0.605	-270.9	0.37		
B3-T3-2	7.4	DRY							
B3-T4-1	6.32	DRY							
B3-T5-1	9.33	DRY							
B3-T5-2	7.98	7.51							
B3-T6-1	11.45	11.29	~~7.35~~	~~27.08~~	~~0.464~~	~~105.0~~	~~5.06~~	✓	water @ 12.95 - wells off last night
B3-T6-2	12.34	11.21	6.42	26.40	0.646	-270.7	0.24		@ 1245
B3-UIC			7.35	27.06	0.464	105.0	5.06		

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	7.19.10	0945	7.20.10	0839	7.21.10	0820	7.22.10	0835	7.23.10	0930
Rate (gpm) / Cumulative Total (gal)										
T-1	7.83	4,009,473	8.62	4,026,925	0	4,026,926	19.6	4,053,490	21.7	4,073,424
T-2										
T-3										
T-4										
T-5										
T-6	6.01	602,815	7.02	624,283	0	624,283	30.5	665,746	32.7	682,779
B-3 (Total)										
CS-MW16-LGR	14.08	763,272	14.02	774,684	0	779,502	0	791,373	0	803,420
CS-MW16-CC	24.72	101,263	24.51	121,250	0	129,667	0	150,555	0	171,604
B3-EXW01	12.23	325,577	0.0	329,216	0	327,052	0	329,533	12.0	329,647

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change fliter.

PB-1 - PB-2 = 0-0=0	PB-1 - PB-2 = 0-0=0	PB-1 - PB-2 = 0-0=0	PB-1 - PB-2 = 44-38=6	PB-1 - PB-2 = 40-40=0
Notes: MW16LGR=186.06 MW16CC = 297.62 B3 EXW01 = 187.80 Tank is 1/2 full	MW16 LGR = 190.14 MW16 CC = 307.46 B3 EXW01 = 192.90 Tank is 3/4 full	Wells off - Richard fixed issue w/Trench 1 floats - wells on Tank empty Week 169	MW16 LGR = 191.2 MW16 CC = 300.6 B3 EXW01 = 158.2 Tank is 3/4 full changed bag filter	MW16 LGR = 167.9 MW16 CC = 225.4 B3 EXW01 = 163.7 Tank is 1/2 full

11.70 @ 1500 * 7.22.10 DTW in 6-2 is 11.30 sample @ 0905

Personnel	J. Bouch; B. Butler

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	7-23-10	0955	14.08	14.09 14.18	15.21
CS-WB05-LGR-02	182		0954		14.13 14.19	24.26
CS-WB05-LGR-03A	216		0953		14.17 14.28	38.44
CS-WB05-LGR-03B	262		0952		23.90 23.18	58.40
CS-WB05-LGR-04A	277		0950		30.43 29.70	64.62
CS-WB05-LGR-04B	329		0948		53.06 52.32 (WB5) 87.36	
CS-WB05-BS-01	362		0947		67.40 66.67	103.48
CS-WB05-CC-01	432		0945		97.81 97.06	108.43
CS-WB05-CC-02	460		0944		109.95 109.20	120.28
CS-WB06-UGR-01	20		1044	14.13	14.05 14.11	16.77
CS-WB06-LGR-01	93		1043		14.11 14.15	16.46
CS-WB06-LGR-02	174		1042		14.13 14.19	41.27
CS-WB06-LGR-03A	207		1040		14.17 14.21	51.92
CS-WB06-LGR-03B	260		1038		24.88 25.40	74.82
CS-WB06-LGR-04	320		1037		50.95 51.45	87.50
CS-WB07-UGR-01	14		1103	14.12	14.07 14.12	15.81
CS-WB07-LGR-01	90		1101		14.10 14.15	17.96
CS-WB07-LGR-02	175		1059		14.13 14.19	40.91
CS-WB07-LGR-03A	208		1058		14.17 14.22	43.71
CS-WB07-LGR-03B	257		1057		15.14 15.07	64.89
CS-WB07-LGR-04	318		1055		41.65 42.16	84.54
CS-WB08-UGR-01	38		1021	14.10	14.07 14.12	18.24
CS-WB08-LGR-01	115		1017		14.09 14.16	22.83
CS-WB08-LGR-02	193		1015		14.13 14.20	33.54
CS-WB08-LGR-03A	228		1013		14.17 14.23	39.71
CS-WB08-LGR-03B	273		1012		26.15 26.58	59.17
CS-WB08-LGR-04	341		1010		55.69 56.13	~~86~~ 88.61

WB6

7.23.10 J. Bouch; B. Butler

Well I.D	Time	pH	Temp	SpCond	ORP	DO	DTW
MW-34 UGR	1100	6.63	20.64	0.746	-192.8	0.58	19.29
MW-33 UGR	1118	6.90	20.30	0.648	20.9	2.04	24.49
MW-32 UGR	1125	6.76	21.02	0.543	47.1	3.85	46.60
MW-31 UGR	1140	6.79	21.03	0.723	32.9	0.65	33.84
MW-30 UGR	1151	6.91	20.47	0.760	46.9	4.14	23.0
MW-26 UGR	1215	6.69	20.13	0.798	-218.4	0.38	14.0
MW-27 UGR	1207	6.63	22.75	0.821	-121.5	0.36	10.70
MW-28 UGR	DRY						
MW-29 UGR	1200	7.02	19.91	0.633	36.0	1.22	19.28

Personnel: J. Bouch ; B. Butler ; S. Elliot

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls		Monthly Field Parameters					
			Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW26-UGR	20.32	7.23.10	1215	14.0	6.69	20.13	0.798	-218.4	0.30	
B3-MW27-UGR	17.00		1207	10.70	6.63	22.75	0.821	+121.5	0.36	
B3-MW28-UGR	18.33		DRY							
B3-MW29-UGR	20.40		1200	19.29	7.02	19.91	0.633	1.22	34.0	
B3-MW30-UGR	23.90		1151	23.0	6.91	20.47	0.760	4.14	46.9	
B3-MW31-UGR	39.06		1140	33.84	6.79	21.03	0.723	0.65	32.9	
B3-MW32-UGR	58.45		1125	46.60	6.76	21.02	0.543	3.85	47.1	
B3-MW33-UGR	29.55		1118	24.49	6.90	20.30	0.648	209	2.04	
B3-MW34-UGR	25.40		1100	19.29	6.63	20.64	0.766	0.52	-192.8	

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01									
CS-D									
CS-MW16-LGR									
CS-MW16-CC									
CS-B3-EXW01	7.23.10	1400		7.09	28.34	0.591	100.0	1.58	
CS-B3-EXW02									
CS-MW1-LGR									

Week 169

Bioreactor Monitoring

Personnel: Bench, B. Butler

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (√)	Notes
Date: 7.30.10		Time: 1000							
B3-T1-1	12.9	9.60	6.39	25.36	0.555	-282.1	0.39		
B3-T1-2	12.4	9.20	6.47	26.60	0.529	170.7	0.44		
B3-T1-3	12.85	8.80	6.43	25.47	0.488	-249.9	0.28	✓	
B3-T2-1	9.67	DRY							
B3-T2-2	10.01	10.08							
B3-T3-1	9.96	9.19							
B3-T3-2	7.4	DRY							
B3-T4-1	6.32	DRY							
B3-T5-1	9.33	DRY							
B3-T5-2	7.98	7.53							
B3-T6-1	11.45	11.30	6.42	26.46	0.529	-190.0	0.25 (DUP)	✓	
B3-T6-2	12.34	11.00	↓	↓	↓	↓	↓		
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	7.26.10	0705	7.27.10	0800	7.28.10	0805	7.29.10	0810	7.30.10	0854
Rate (gpm) / Cumulative Total (gal)										
T-1	8.31 (DUP)	4129218	20.5	4147040	20.8	4165218	8.11	4183166	7.43	4202573
T-2										
T-3										
T-4										
T-5										
T-6	7.02	751943	31.3	774395	31.6	797461	7.84	821317	7.33	845066
B-3 (Total)										
CS-MW16-LGR	14.24	839377	✓	850879	14.35	863055	14.35	875315	14.35	887511
CS-MW16-CC	24.32	233629	✓	253300	24.24	274090	24.24	294863	24.24	315455
B3-EXW01	11.91	3320504	✓	3330138	11.06	3340266	11.80	3350561	✓	3360707

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change fliter.

PB-1 - PB-2 = 0-0=0	PB-1 - PB-2 = 42-40=2	PB-1 - PB-2 = 41-40=0	PB-1 - PB-2 = 0-0=0	PB-1 - PB-2 = 0-0=0

Notes:
- MW16 LGR = 197.27
- MW16 CC = 311.29
- B3EXW01 = 198.50
- Tank is 10/10 full

- Tank is 10/10 full
- MW16 LGR = 173.4
- MW16 CC = 234.5
- B3EXW01 = 169.3

- MW16 LGR = 199.4
- MW16 CC = 136.8
- B3EXW01 = 202.4
- Tank is 3/4 full

- MW16 LGR = 200.10
- MW16 CC = 317.55
- B3EXW01 = 201.20
- Tank is 3/4 full

- MW16 LGR = 200.2
- MW16 CC = 315.9
- B3EXW01 = 203.2

Week 170

Personnel J Bench ; W Butler

Quarterly Monitoring

MPMWs	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Inside Pressure	Zone Pressure	
CS-WB05-LGR-01	99	7-26-10	1310	14.06	21.48	
CS-WB05-LGR-02	182	7-26-10	1035	14.12	24.56	
CS-WB05-LGR03A	216	7-26-10	0933	14.17	36.91	14.04
CS-WB05-LGR03B	262	7-19-10	1619	25.66	66.67	14.08
CS-WB05-LGR04A	277	7-22-10	1400	31.64	64.89	
CS-WB05-LGR04B	329	7-22-10	1250	54.34	97.27	
CS-WB05-BS-01	362	7-22-10	1040	68.83	104.11	14.02
CS-WB05-CC-01	432	7-27-10	1350	99.56	113.28	14.14
CS-WB05-CC-02	460	7-27-10	1215	111.90	123.14	
CS-WB06-UGR-01	20	7-28-10	1425	14.09	16.84	
CS-WB06-LGR-01	93	7-28-10	1330	14.12	16.44	
CS-WB06-LGR-02	174	7-28-10	1240	14.16	40.34	
CS-WB06-LGR03A	207	7-28-10	1140	14.17	50.17	
CS-WB06-LGR03B	260	7-19-10	1455	27.36	76.36	14.02
CS-WB06-LGR-04	320	7-28-10	1000	53.37	85.70	
CS-WB07-UGR-01	14	7-29-10	1310	14.12	15.80	
CS-WB07-LGR-01	90	7-29-10	1200	14.17	17.90	
CS-WB07-LGR-02	175	7-29-10	1105	14.22	~~15.07~~	39.72
CS-WB07-LGR03A	208	7-29-10	1000	14.25	41.16	
CS-WB07-LGR03B	257	7-20-10	0907	17.05	66.44	14.03
CS-WB07-LGR-04	318	7-29-10	0900	43.62	82.72	14.13
CS-WB08-UGR-01	38	7-27-10	1415	14.05	18.16	
CS-WB08-LGR-01	115	7-27-10	1320	14.07	22.91	
CS-WB08-LGR-02	193	7-27-10	1035	14.15	32.03	
CS-WB08-LGR03A	228	7-27-10	0940	14.21	37.72	
CS-WB08-LGR03B	273	7-19-10	1315	28.03	61.13	14.01
CS-WB08-LGR-04	341	7-27-10	0830	58.04	87.99	14.03

Monitroing Wells	Sample Date	Sample Time	pH	Temp	SpCond	ORP	DO
B3-MW01							
CS-D							
CS-MW16-LGR							
CS-MW16-CC							
CS-MW1-LGR							

Quarter 13
week 170

Personnel: J. Bouch; B. Butler

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls		Monthly Field Parameters					Notes
			Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	
B3-MW26-UGR	20.32	7.29.10	1122	14.10	6.61	20.26	0.472	-239.8	0.35	
B3-MW27-UGR	17.00	7.29.10	1135	11.20	~~7.08~~	~~24.14~~	~~0.400~~	-169.5	0.28	
B3-MW28-UGR	18.33	DRY			6.58	22.94	0.484			
B3-MW29-UGR	20.40	7.29.10	1140	19.80	6.92	20.01	0.378	-21.4	1.04	
B3-MW30-UGR	23.90	7.29.10	1148	23.00	6.83	20.40	0.453	31.2	3.73	
B3-MW31-UGR	39.06	7.29.10	1045	34.20	6.16	21.33	0.435	61.2	0.58	
B3-MW32-UGR	58.45	7.29.10	1053	47.31	6.43	21.14	0.321	-8.4	~~5.28~~	
B3-MW33-UGR	7.27.10 29.55	~~DRY~~ ~~24.50~~	1102	24.50	6.72	20.28	0.393	113.4	1.29	
B3-MW34-UGR	25.40	7.29.10	1111	19.40	6.48	20.64	0.459	~~129~~ 141.8	~~0.43~~ 0.33	

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01	7.29.10	1000		6.67	21.53	1.056	~~46~~ 73	1.95	
CS-D	7.29.10	1400		7.09	22.07	0.548	21.6	1.90	
CS-MW16-LGR	7.27.10	1340		7.17	22.89	0.670	-94.9	0.83	
CS-MW16-CC	7.27.10	1450		7.06	22.39	0.571	131.8	2.03	
CS-B3-EXW01	7.23.10	1400		7.09	28.34	0.591	100.0	1.58	Sampled H+ 1120 on 7/27/10
CS-B3-EXW02									
CS-MW1-LGR	7.29.10	1245		7.09	22.32	0.532	64.5	2.97	

Personnel	J Bouch, B. Butler

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	7/30	0909		14.09 14.18	21.38
CS-WB05-LGR-02	182		0409		14.13 14.23	27.94
CS-WB05-LGR-03A	216		0908		14.17 14.29	35.65
CS-WB05-LGR-03B	262		0908		23.90 23.19	5558
CS-WB05-LGR-04A	277		0907		30.43 29.70	61.56
CS-WB05-LGR-04B	329		0906		53.06 52.31	84.00
CS-WB05-BS-01	362		0904		67.40 6666	100.39
CS-WB05-CC-01	432		0902		97.81 97.06	99 58
CS-WB05-CC-02	460		0900	14.14	109.95 109.20	112.22
CS-WB06-UGR-01	20		0943		14.05 14.15	14.34
CS-WB06-LGR-01	93		0942		14.11 14.19	16.49
CS-WB06-LGR-02	174		0940		14.13 14.23	39.85
CS-WB06-LGR-03A	207		0938	14.14	14.17 14.24	49.55
CS-WB06-LGR-03B	260		0937		24.88 25.36	72.45
CS-WB06-LGR-04	320		0935		50.95 51.40	85.50
CS-WB07-UGR-01	14		0957		14.07 14.14	15.78
CS-WB07-LGR-01	90		0956		14.10 14.17	17.75
CS-WB07-LGR-02	175		0954		14.13 14.23	39.82
CS-WB07-LGR-03A	208		0952	14.14	14.17 14.25	40.85
CS-WB07-LGR-03B	257		0951		15.14 15.03	62.04
CS-WB07-LGR-04	318		0950		41.65 41.56	82.97
CS-WB08-UGR-01	38		0925		14.07 14.14	18.21
CS-WB08-LGR-01	115		0924		14.09 14.18	23.31
CS-WB08-LGR-02	193		0923	14.12	14.13 14.22	31.05
CS-WB08-LGR-03A	228		0922		14.17 14.24	36.97
CS-WB08-LGR-03B	273		0920		26.15 26.54	56.40
CS-WB08-LGR-04	341		0919		55.69 56.08	86.50

SWMU B-3 Tree Mulch Bioreactor

Bioreactor Monitoring

Personnel: J. Bauch; B. Butler

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp (deg. C)	SpCond (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (√)	Notes
Date: 8-5-10		Time: 0915							
B3-T1-1	12.9	9.86	6.42	25.47	1.008	-216.2	0.66	✓	took readings @ T1-1 again pH 6.44, Temp 26.10, Spcond. 0.985, DO-0.33, ORP-288.1
B3-T1-2	12.4	9.38	6.48	26.48	1.011	-250.9	0.43		
B3-T1-3	12.85	9.03	~~6.50~~ or 6.43	~~25.26~~ 26.11	~~0.973~~ 0.985	-273.0	0.35		
B3-T2-1	9.67	DRY							
B3-T2-2	10.01	DRY	6.50	25.26	0.972				
B3-T3-1	9.96	9.19							
B3-T3-2	7.4	DRY							
B3-T4-1	6.32	DRY							
B3-T5-1	9.33	DRY							
B3-T5-2	7.98	7.96							
B3-T6-1	11.45	10.30							
B3-T6-2	12.34	10.95	6.45	26.62	0.927	-273.4	0.94	✓	
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	8.2.10	0858	8.3.10	0852	8.4.10	0919	8.5.10	0909	8.6.10	0855
Rate (gpm) / Cumulative Total (gal)										
T-1	7.716	4,254,580	7.01	4272683	20.0	4290,207	19.9	4,301,735	8.28	4327,614
T-2										
T-3										
T-4										
T-5										
T-6	16.25	909,667	5.47	933714	38.5	955,036	29.3	978872	7.12	1,001,139
B-3 (Total)										
CS-MW16-LGR	14.24	920,986	14.35	938627	Ø	944545	Ø	956601	14.07	968291
CS-MW16-CC	24.56	372009	24.45	391775	Ø	412084	Ø	437755	23.97	452742
B3-EXW01	11.84	3388386	11.91	3399039	Ø	3407928	Ø	3418060	Ø	3428,162

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change fliter.

	Monday	Tuesday	Wednesday	Thursday	Friday
	PB-1 - PB-2 = 0-0=0	PB-1 - PB-2 = 0-0=0	PB-1 - PB-2 = 47-39=3	PB-1 - PB-2 = 47-39=3	PB-1 - PB-2 = 0-0=0
Notes:	MW16 LGR = 200.09 MW16 CC = 305.31 B3EXW01 = 200.70	MW16 LGR = 198.13 MW16 CC = 305.51 B3EXW01 = 196.40	MW16 LGR = 181.19 MW16 CC = 242.52 B3EXW01 = 175.50	MW16 LGR = 178.55 MW16 CC = 237.64 B3EXW01 = 170.90	MW16 LGR = 205.3 MW16 CC = 319.5 B3EXW01 = 206.8
	Tank 1/2 off	Tank is 7/16 full	Tank 3/4 full	Tank is 7/16 full	Tank is 3/4 full changed bag filter

Week 17

Personnel	J. Bouch; B. Butler

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	8.3.10	1315		14.09 14.19	15.75
CS-WB05-LGR-02	182		1314		14.13 14.20	21.76
CS-WB05-LGR-03A	216		1313		14.17 14.23	34.37
CS-WB05-LGR-03B	262		1312		23.90 23.13	54.29
CS-WB05-LGR-04A	277		1311	14.11	30.43 29.66	60.37
CS-WB05-LGR-04B	329		1310		53.06 52.28	83.07
CS-WB05-BS-01	362		1309		67.40 66.63	98.92
CS-WB05-CC-01	432		1308		97.81 97.01	101.88
CS-WB05-CC-02	460		1306		109.95 109.16	113.70
CS-WB06-UGR-01	20		1349		14.05 14.12	16.69
CS-WB06-LGR-01	93		1347		14.11 14.16	16.07
CS-WB06-LGR-02	174		1346	14.13	14.13 14.21	38.90
CS-WB06-LGR-03A	207		1345	~~14.10~~	14.17 14.21	48.23
CS-WB06-LGR-03B	260		1343	(14.10)	24.88 25.32	71.13
CS-WB06-LGR-04	320		1342		50.95 51.38	94.56
CS-WB07-UGR-01	14		1406		14.07 14.11	15.66
CS-WB07-LGR-01	90		1405		14.10 14.14	17.89
CS-WB07-LGR-02	175		1404		14.13 14.19	39.24
CS-WB07-LGR-03A	208		1403		14.17 14.20	39.61
CS-WB07-LGR-03B	257		1401		15.14 14.99	60.80
CS-WB07-LGR-04	318		1400		41.65 41.53	81.37
CS-WB08-UGR-01	38		1332		14.07 14.14	18.09
CS-WB08-LGR-01	115		1331		14.09 14.18	23.22
CS-WB08-LGR-02	193		1330		14.13 14.21	30.25
CS-WB08-LGR-03A	228		1329	14.10	14.17 14.22	35.84
CS-WB08-LGR-03B	273		1328		26.15 26.49	55.29
CS-WB08-LGR-04	341		1326		55.69 56.03	85.95

Personnel: J. Bonchi; B. Butler

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls		Monthly Field Parameters					
			Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW26-UGR	20.32	~~8-7-10~~ 8-10-10	0920	14.16	6.57	20.25	0.698	-24.8	0.79	
B3-MW27-UGR	17.00	8.2.10	1015	11.34	6.64	23.66	0.739	-140.8	1.50	collected Noblis sample
B3-MW28-UGR	18.33	DRY								→
B3-MW29-UGR	20.40	8.2.10	1115	18.95	6.73	20.02	0.559	103.2	2.08	collected Noblis sample
B3-MW30-UGR	23.90	8.2.10	1320	23.09	6.72	20.49	0.670	111.4	3.59	could not get ferris iron sample - not enough water
B3-MW31-UGR	39.06	8.3.10	0910	24.20	6.60	21.48	0.649	85.6	0.70	collected Noblis sample
B3-MW32-UGR	58.45	8.3.10	1000	48.05	7.0	21.18	0.492	8.7	5.50	collected Noblis sample
B3-MW33-UGR	29.55	8.3.10	1030	24.48	6.64	20.27	0.587	77.0	1.28	collected Noblis sample
B3-MW34-UGR	25.40	8.3.10	1100	19.30	6.57	20.80	0.680	-219.1	0.40	

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01									
CS-D									
CS-MW16-LGR									
CS-MW16-CC									
CS-B3-EXW01									
CS-B3-EXW02									
CS-MW1-LGR									

SWMU B-3 Tree Mulch Bioreactor

Bioreactor Monitoring

Personnel: J. Bonch; S Elliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (√)	Notes
Date: 8.9.10		Time: 0840							2nd set of readings @ T1-1
B3-T1-1	12.9	9.87	6.40	25.80	0.999	-294.5	0.62		pH 6.43 Temp: 26.36
B3-T1-2	12.4	9.45	6.45	25.95	1.012	-260.3	0.49		Cond: 0.966 ORP: -262.9
B3-T1-3	12.85	9.10	6.42	25.43	0.858	-274.3	0.34	✓	DO: 0.43
B3-T2-1	9.67	DRY							
B3-T2-2	10.01	DRY							
B3-T3-1	9.96	9.19							
B3-T3-2	7.4	DRY							
B3-T4-1	6.32	DRY							
B3-T5-1	9.33	DRY							
B3-T5-2	7.98	7.96							
B3-T6-1	11.45	11.04							
B3-T6-2	12.34	10.78	6.41	26.75	0.912	-267.7	0.38	✓	
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	8.9.10	0830	8.10.10	0930	8.11.10	0815	8.12.10	0820	8.13.10	
Rate (gpm) / Cumulative Total (gal)										
T-1	8.91	4,382,32	21.2	4402,201	20.6	4419,820	8.18 /21.9	4,438,695	7.77/21.4	4,458,840
T-2										
T-3										
T-4										
T-5										
T-6	7.01	1070,114	32.1	1,094,230	31.0	1115884	6.88/31.7	1138839	5.47/30.1	1163,865
B-3 (Total)						276617				
CS-MW16-LGR	13.91	3890	0	160971	0	276133	13.85	34521	13.85	50889
CS-MW16-CC	23.87	514,167	0	537321	0	555138	23.92	575,500	24.03	595,121
B3-EXW01	0	345,056	0	3416,838	0	3476,866	* 11.63	3486902	* 18.47/11.9	3506,821

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change fliter.

PB-1 - PB-2 = 0-0=0	PB-1 - PB-2 = 41-41=0	PB-1 - PB-2 = 41-40=1	PB-1 - PB-2 = 42-41=1	PB-1 - PB-2 = 42-40=2

Notes:
- MW16 LGR = 208.8
- MW16 CC = 326.7
- B3EXW01 = 209.7

Tank is 3/4 full

- MW16 LGR = 187.99
- MW16 CC = 253.12
- B3EXW01 = 183.10

Tank is 3/4 full
- EXW01 shut off @ [illegible] for plumbing
-- turned back on 1530

- MW16 LGR = 187.22
- MW16 CC = 252.91
- B3EXW01 = 181.10

Tank is 3/4 full

Week 172

tank = 5/8 full

tank 1/2 full

*looking at quick trends, it looks like the valve at EXW01 was bumped 8/12 ~ 1330
USA has been working on plumbing between EXW01 & EXW02

↓ OVER

Personnel: J. Bouchy, S. Elliott

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls		Monthly Field Parameters					
			Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW26-UGR	20.32	8.9.10	1008	14.21	6.58	20.40	0.816	-296.4	0.41	
B3-MW27-UGR	17.00		1017	11.84	6.82	22.90	0.817	39.9	4.92	
B3-MW28-UGR	18.33		DRY							
B3-MW29-UGR	20.40		20.02 1015		not enough water					
B3-MW30-UGR	23.90		1031	23.47	not enough water					
B3-MW31-UGR	39.06		0925	34.75	6.25	21.29	0.774	9.6	0.82	
B3-MW32-UGR	58.45		0935	48.95	6.79	21.20	0.583	22.8	4.50	
B3-MW33-UGR	29.55		0946	24.88	6.75	20.78	0.704	97.3	1.29	
B3-MW34-UGR	25.40		0957	19.47	6.47	20.77	0.800	~~-5~~ -234.7 (JMS)	0.55	

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01									
CS-D									
CS-MW16-LGR									
CS-MW16-CC									
CS-B3-EXW01									
CS-B3-EXW02									
CS-MW1-LGR									

Week 172

Personnel: J. Bausch; S. Elliott

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	8/9/10	1050	14.07	14.09 14.14	21.34
CS-WB05-LGR-02	182		1049		14.13 14.17	20.11
CS-WB05-LGR-03A	216		1049		14.17 14.20	32.39
CS-WB05-LGR-03B	262		1047		23.90 23.05	52.31
CS-WB05-LGR-04A	277		1046		30.43 29.57	58.26
CS-WB05-LGR-04B	329		1045		53.06 52.19	80.73
CS-WB05-BS-01	362		1045		67.40 66.54	96.82
CS-WB05-CC-01	432		1044		97.81 96.93	95.50
CS-WB05-CC-02	460		1043		109.95 109.09	108.15
CS-WB06-UGR-01	20		1117	14.08	14.05 14.10	16.69
CS-WB06-LGR-01	93		1116		14.11 14.14	16.44
CS-WB06-LGR-02	174		1116		14.13 14.17	37.41
CS-WB06-LGR-03A	207		1115		14.17 14.20	46.62
CS-WB06-LGR-03B	260		1114		24.88 25.30	69.52
CS-WB06-LGR-04	320		1112		50.95 51.36	81.92
CS-WB07-UGR-01	14		1130	14.11	14.07 14.08	15.58
CS-WB07-LGR-01	90		1129		14.10 14.14	17.89
CS-WB07-LGR-02	175		1128		14.13 14.17	38.47
CS-WB07-LGR-03A	208		1127		14.17 14.20	37.92
CS-WB07-LGR-03B	257		1127		15.14 14.94	59.11
CS-WB07-LGR-04	318		1126		41.65 41.50	79.04
CS-WB08-UGR-01	38		1104	14.08	14.07 14.09	18.08
CS-WB08-LGR-01	115		1103		14.09 14.13	23.10
CS-WB08-LGR-02	193		1102		14.13 14.16	29.14
CS-WB08-LGR-03A	228		1102		14.17 14.20	33.49
CS-WB08-LGR-03B	273		1101		26.15 26.45	52.94
CS-WB08-LGR-04	341	↓	1100		55.69 56.00	82.36

SWMU B-3 Tree Mulch Bioreactor

Bioreactor Monitoring

Personnel: J. Bouch; A. Lindley

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (√)	Notes
Date: 8.17.10		Time: 0848							
B3-T1-1 *	12.9	9.93	6.37	26.11	1.020	-277.1	0.46	✓	① 0855
B3-T1-2 *	12.4	9.50	6.44	26.55	0.958	-265.8	0.28		② 0925
B3-T1-3 *	12.85	9.16	6.43	25.30	0.853	-298.9	0.23		③ 1010
B3-T2-1	9.67	dry							
B3-T2-2	10.01	dry							
B3-T3-1 *	9.96	9.20	6.46	32.46	0.864	-229.0	0.29		
B3-T3-2	7.[illegible]	dry							
B3-T4-1	6.3[illegible]	dry							
B3-T5-1	9.33	dry							
B3-T5-2	7.98	dry							
B3-T6-1	11.45	10.98						✓	④ ↳ 1030
B3-T6-2 *	12.34	10.76	6.44	26.70	0.906	-187.3	0.45		
B3-UIC			7.44	24.66	0.636	-3.3	6.22		⑤ 0954

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	8.16.10	0925	8.17.10	0837	8.18.10	1025	8.17.10	0930	8.18.10	1030
Rate (gpm) / Cumulative Total (gal)										
T-1	20.2	4515694	7.49	4533757	19.3	4553490	4.24	4570682	6.85	4589198
T-2										
T-3										
T-4										
T-5										
T-6	29.4	1232636	6.32	1254021	30.0	1278371	5.56	1299899	5.37	1322880
B-3 (Total)										
CS-MW16-LGR	⊘	85430	13.68	96650	⊘	108695	13.52	119532	13.07	131200
CS-MW16-CC	⊘	655564	23.71	675119	⊘	691335	23.71	715037	23.60	735579
B3-EXW01	⊘	3533744	12.59	3543715	12.55	3553617	12.60	3564914	12.63	3575654

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change filter.

PB-1 - PB-2 = 38 - 43 = 5	PB-1 - PB-2 = 0 - 0 = 0	PB-1 - PB-2 = 43 - 38 = 5	PB-1 - PB-2 = 42 - 38 = 4	PB-1 - PB-2 = 44 - 36 = 8

Notes:

Tank ½ full

Tank is 9/16 full
MW16LGR = 214.40
MW16CC = 332.49
B3EXW01 = 215.70

LGR16 = 215.7
CC16 = 335.5
EXW01 = 219.1
Tank is 1/2 full

LGR16 = 209.9
CC16 = 325.7
B3EXW01 = 210.2
Tank is 1/2 full

Tank is 1/2 full
changed BF
LGR16 = 217.18
CC16 = 334.94
B3EXW01 = 217.90

Week 173

Personnel: J. Bouch ; A. Lindley

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls		Monthly Field Parameters					
			Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW26-UGR	20.32	8/18/10	1226	14.29	6.63	21.55	0.477	-161.8	0.73	
B3-MW27-UGR	17.00	8/18/10	1213	11.74	6.69	24.27	0.498	109.4	4.67	
B3-MW28-UGR	18.33	8/18/10	DRY							
B3-MW29-UGR	20.40	8/18/10	~~20.01~~	20.01	not enough water					
B3-MW30-UGR	23.90	8/18/10	1140	23.44	not enough water					
B3-MW31-UGR	39.06	8/18/10	1122	~~34.93~~	6.73	21.01	0.471	104.7	1.10	
B3-MW32-UGR	58.45	~~49.90~~	1047	8/18/10	6.85	21.12	0.342	34.8	4.92	
B3-MW33-UGR	29.55	8/18/10	1056	24.64	6.72	20.32	0.432	103.9	1.73	
B3-MW34-UGR	25.40	8/18/10	1030	19.53	6.27	20.81	0.482	-185.5	0.38	

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01									
CS-D									
CS-MW16-LGR									
CS-MW16-CC									
CS-B3-EXW01									
CS-B3-EXW02									
CS-MW1-LGR									

Personnel: A. Lindley, J Bowden

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	8/18/10	1043	14.07	14.09 14.15	21.29
CS-WB05-LGR-02	182		1042		14.13 14.21	15.19
CS-WB05-LGR-03A	216		1041		14.17 14.22	29.70
CS-WB05-LGR-03B	262		1041		23.90 23.00	49.43
CS-WB05-LGR-04A	277		1040		30.43 29.50	85.80
CS-WB05-LGR-04B	329		1037		53.06 52.11	78.67
CS-WB05-BS-01	362		1037		67.40 66.46	94.04
CS-WB05-CC-01	432		1036		97.81 96.85	94.71
CS-WB05-CC-02	460		1034		109.95 109.01	106.54
CS-WB06-UGR-01	20	8-18-10	1154	14.08	14.05 14.09	16.61
CS-WB06-LGR-01	93		1153		14.11 14.12	16.42
CS-WB06-LGR-02	174		1152		14.13 14.15	37.12
CS-WB06-LGR-03A	207		1151		14.17 14.19	45.06
CS-WB06-LGR-03B	260		1150		24.88 25.22	67.96
CS-WB06-LGR-04	320		1149		50.95 51.29	79.77
CS-WB07-UGR-01	14	8-18-10	1228	14.09	14.07 14.06	15.52
CS-WB07-LGR-01	90		1226		14.10 14.14	17.84
CS-WB07-LGR-02	175		1224		14.13 14.16	37.49
CS-WB07-LGR-03A	208		1222		14.17 14.18	35.81
CS-WB07-LGR-03B	257		1221		15.14 14.89	57.00
CS-WB07-LGR-04	318		1220		41.65 41.44	76.10
CS-WB08-UGR-01	38	8-18-10	1120	14.10	14.07 14.11	18.04
CS-WB08-LGR-01	115		1119		14.09 14.14	23.03
CS-WB08-LGR-02	193		1118		14.13 14.18	27.65
CS-WB08-LGR-03A	228		1116		14.17 14.19	31.22
CS-WB08-LGR-03B	273		1115		26.15 26.39	50.69
CS-WB08-LGR-04	341		1114		55.69 55.92	80.56

8/16/10 1410
Atm inside 24.92
zone 50.17

8-16-10 1040
Atm (14.09)
inside: 27.22
zone 68.36

8-16-10 (14.07)
Atm: 1320
Inside: 16.87
Zone: 57.40

8/16/10 0950
Atm 14.07
Inside 29.39
zone 51.45

Bioreactor Monitoring

Personnel: J. Bouch, S. Elliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp (deg. C)	SpCond (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (√)	Notes
Date: 8-26-10		Time: 0935							2nd reading
B3-T1-1	12.9	10.16	6.44	25.75	0.562	-203.0	0.61		Sump T1-1 ph 6.43
B3-T1-2	12.4	9.70	6.46	26.56	0.558	-175.0	0.40	✓	T 25.83
B3-T1-3	12.85	9.30	6.55	25.09	0.468	-275.0	0.20		mS 0.561
B3-T2-1	9.67	dry							DO 0.21
B3-T2-2	10.01	dry							ORP -263.0
B3-T3-1	9.96	9.20							
B3-T3-2	7.4	dry							
B3-T4-1	6.32	dry							
B3-T5-1	9.33	dry							
B3-T5-2	7.98	dry							
B3-T6-1	11.45	10.83	6.47	24.30	0.433	-210.6	0.23	✓	
B3-T6-2	12.34	10.48	6.47	27.14	0.520	~~-20~~ (UM) -177.3	~~0.27~~ (PB) 0.28		
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings — Rate (gpm) / Cumulative Total (gal)

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	8-23-10	1013	8-24-10	1000	8-25-10		8-26-10	0923	8-27-10	0930
T-1	6.97	4,642,599	19.3	4,660,034	7.33	4677570	19.6	4693690	20	4710156
T-2										
T-3										
T-4										
T-5										
T-6	5.85	1,392,436	30.6	1415457	6.16	1438365	47.4	1468299	46.6	1498191
B-3 (Total)										
CS-MW16-LGR	13.01	164,154	Ø	175279	12.74	185,908	Ø	197738	12.79	210091
CS-MW16-CC	23.55	795,341	Ø	815554	23.55	835,046	Ø	857393	25.20	880232
B3-EXW01	12.68	3609,571	Ø	3618423	12.58	3629770	~~[illegible]~~	~~[illegible]~~	Ø	3653023
B3-EXW02	—	—	—	—	—	—	—	—	—	—

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change filter.

	Monday	Tuesday	Wednesday	Thursday	Friday
PB-1 - PB-2 =	0-0=0	42-41=1	0-0=0	38-36=2	38-34=1
Notes: MW16LGR / MW16CC / B3EXW01 / B3EXW02 / SCADA	191.3 / 257.3 / 183.7 / Quicktrends looks OK	196.77 / 267.50 / 192.40 / Quicktrends looks OK	192.1 / 258.0 / 184.5 / Quicktrends looks ok	193.96 / 266.17 / 184.90 / Quicktrends looks OK	202.6 / 276.1 / 206.1 / Quicktrend OK
	Tank is 1/2 full	Tank is 7/9 full	Tank is 1/2 full	Tank 7/8 full; did not write it down	Tank is 1/4 full

Week 1/2

5N1HS 9JMB12H

twallace@carbonair.com
pbeck@carbonair.com

11.45
10.83
.62

Personnel: J. Bowen

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls		Monthly Field Parameters					
			Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW26-UGR	20.32	8.26.10	1146	14.31	6.71	21.10	0.469	-185.1	0.33	
B3-MW27-UGR	17.00	8.26.10	1130	11.70	6.65	22.88	0.487	31.0	1.44	
B3-MW28-UGR	18.33	8.26.10	1127		DRY					
B3-MW29-UGR	20.40	8.26.10	1124	20.03	not enough water					
B3-MW30-UGR	23.90	8.26.10	1116	23.42	not enough water					
B3-MW31-UGR	39.06	8.26.10	1108	35.05	6.74	21.04	0.459	25.4	0.94	
B3-MW32-LGR	58.45	8.26.10	1058	50.56	6.80	20.98	0.339	25.4	6.17	
B3-MW33-UGR	29.55	8.26.10	1043	24.62	6.70	20.42	0.421	-4.6	1.41	
B3-MW34-UGR	25.40	8.26.10	1030	8.26.10	6.12	20.74	0.486	-206.3	0.29	

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01									
CS-D									
CS-MW16-LGR									
CS-MW16-CC									
CS-B3-EXW01									
CS-B3-EXW02									
CS-MW1-LGR									

Week 174

Personnel	S. Elliott & J. Bouch

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	8-25-10	1015	14.12	14.09 14.17	21.27
CS-WB05-LGR-02	182		1014		14.13 14.21	15.90
CS-WB05-LGR-03A	216		1013		14.17 14.24	27.59
CS-WB05-LGR-03B	262		1012		23.90 22.99	47.52
CS-WB05-LGR-04A	277		1011		30.43 29.51	53.64
CS-WB05-LGR-04B	329		1010		53.06 52.11	76.17
CS-WB05-BS-01	362		1009		67.40 66.46	91.94
CS-WB05-CC-01	432		1008		97.81 96.85	88.12
CS-WB05-CC-02	460		1008		109.95 109.01	100.75
CS-WB06-UGR-01	20		1041	14.14	14.05 14.13	16.64
CS-WB06-LGR-01	93		1040		14.11 14.18	16.44
CS-WB06-LGR-02	174		1040		14.13 14.21	36.41
CS-WB06-LGR-03A	207		1039		14.17 14.24	43.86
CS-WB06-LGR-03B	260		1038		24.88 25.26	66.75
CS-WB06-LGR-04	320		1037		50.95 51.32	77.72
CS-WB07-UGR-01	14		1055	14.15	14.07 14.14	15.53
CS-WB07-LGR-01	90		1054		14.10 14.18	17.92
CS-WB07-LGR-02	175		1053		14.13 14.23	36.84
CS-WB07-LGR-03A	208		1052		14.17 14.24	34.24
CS-WB07-LGR-03B	257		1051		15.14 14.96	55.43
CS-WB07-LGR-04	318		1050		41.65 41.49	74.03
CS-WB08-UGR-01	38		1028	14.11	14.07 14.14	18.06
CS-WB08-LGR-01	115		1027		14.09 14.17	23.02
CS-WB08-LGR-02	193		1026		14.13 14.21	26.73
CS-WB08-LGR-03A	228		1026		14.17 14.23	28.82
CS-WB08-LGR-03B	273		1025		26.15 26.41	48.28
CS-WB08-LGR-04	341		1024		55.69 55.96	77.94

Bioreactor Monitoring

Personnel: Tennyson

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (√)	Notes
Date: 9-2-10		Time: 1500							
B3-T1-1	12.9	10.14	6.34	25.63	0.549	-268.9	0.16		outside temp = 95°
B3-T1-2	12.4	9.68	6.34	26.80	0.548	-153.4	0.34	✓	
B3-T1-3	12.85	9.32	6.04	24.94	0.462	-267.9	0.27		
B3-T2-1	9.67	dry	-	-	-	-	-	no	
B3-T2-2	10.01	dry	-	-	-	-	-		
B3-T3-1	9.96	9.23	6.53	33.85	0.513	-201.9	0.11	no	
B3-T3-2	7.4	dry	-	-	-	-	-		
B3-T4-1	6.32	dry	-	-	-	-	-	no	
B3-T5-1	9.33	dry	-	-	-	-	-	no	
B3-T5-2	7.98	dry	-	-	-	-	-		
B3-T6-1	11.45	10.75	6.48	24.31	0.412	-201.7	0.18		
B3-T6-2	12.34	10.60	6.49	26.92	0.529	-223.5	0.25	✓	
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	8-30-10	1330	8-31-10		9-1-10	1225	9-2-10	1230	9-5-10	1130
Rate (gpm) / Cumulative Total (gal)										
T-1	7.75	4760840			18.9	4792200	18.8	4807956	7.05	4823195
T-2										
T-3										
T-4										
T-5										
T-6	10.2	1592201	Not monitored		45.2	1649549	44.2	1677790	8.01	1705448
B-3 (Total)										
CS-MW16-LGR	12.43					270656		281911	11.48	292111
CS-MW16-CC	23.10				not pumping	996272	not pumping	18860	23.53	39611
B3-EXW01	12.34					3714732		3726758	12.49	3737807
B3-EXW02	not on line				not on line		off-line		off-line	

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change fliter.

	PB-1 - PB-2 = 40-34=6	PB-1 - PB-2 =	PB-1 - PB-2 = 41-32 = 9	PB-1 - PB-2 = 42-32=10	PB-1 - PB-2 = changed filter, Ø
Notes:	MW16LGR 224.75'	ran normally - no problems	200.45	206.04	222.58
	MW16CC 350.55'		274.49	281.13	341.38
	B3EXW01 226.9'		192.9	206.8	222.0
	B3EXW02 —		—	—	—
	SCADA OK		SCADA - OK	SCADA - OK	SCADA - OK
	Tank = 1/16 & filling		Tank = 9/16 T/P running	Tank = 3/4, T/P running	Tank = 7/16, filling

Week 175

Personnel: Tennyson

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls		weekly ~~Monthly~~ Field Parameters					
			Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW26-UGR	20.32	9-2-10	1745	14.32	6.72	20.75	0.470	-277.9	0.21	
B3-MW27-UGR	17.00		1721	11.90	6.66	22.12	0.489	-301.0	0.23	
B3-MW28-UGR	18.33		1712	dry	-	-	-	-	-	dry
B3-MW29-UGR	20.40		1703	20.02	-	-	-	-	-	insufficient water (<6")
B3-MW30-UGR	23.90		1648	23.41	6.84	21.28	0.463	103.1	4.23	
B3-MW31-UGR	39.06		1635	35.19	6.74	21.90	0.464	96.1	0.72	
B3-MW32-UGR	58.45		1620	50.95	7.05	21.27	0.346	25.4	4.40	
B3-MW33-UGR	29.55		1605	24.71	6.76	21.36	0.422	71.4	1.14	
B3-MW34-UGR	25.40		1550	19.53	6.45	20.75	0.466	-223.5	0.17	

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01									
CS-D									
CS-MW16-LGR									
CS-MW16-CC									
CS-B3-EXW01									
CS-B3-EXW02									
CS-MW1-LGR									

Week 175

Personnel	Tennyson

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	9-2-10	1230	14.07	14.09 14.11	21.24
CS-WB05-LGR-02	182		1228		14.13 14.15	14.16
CS-WB05-LGR-03A	216		1226		14.17 14.16	25.02
CS-WB05-LGR-03B	262		1224		23.90 22.89	44.94
CS-WB05-LGR-04A	277		1222		30.43 29.39	50.48
CS-WB05-LGR-04B	329		1220		53.06 52.01	72.96
CS-WB05-BS-01	362		1218		67.40 66.35	89.02
CS-WB05-CC-01	432		1216		97.81 96.74	81.09
CS-WB05-CC-02	460		1214		109.95 108.91	93.72
CS-WB06-UGR-01	20		1326	14.04	14.05 14.06	16.77
CS-WB06-LGR-01	93		1324		14.11 14.10	16.40
CS-WB06-LGR-02	174		1322		14.13 14.13	36.69
CS-WB06-LGR-03A	207		1320		14.17 14.17	42.77
CS-WB06-LGR-03B	260		1318		24.88 25.17	65.66
CS-WB06-LGR-04	320		1316		50.95 51.23	75.77
CS-WB07-UGR-01	14		1255	14.05	14.07 14.06	15.44
CS-WB07-LGR-01	90		1253		14.10 14.11	18.02
CS-WB07-LGR-02	175		1251		14.13 14.12	36.11
CS-WB07-LGR-03A	208		1249		14.17 14.14	32.32
CS-WB07-LGR-03B	257		1247		15.14 14.87	53.51
CS-WB07-LGR-04	318		1245		41.65 41.40	71.64
CS-WB08-UGR-01	38		1348	14.03	14.07 14.08	18.06
CS-WB08-LGR-01	115		1346		14.09 14.10	22.76
CS-WB08-LGR-02	193		1344		14.13 14.14	25.89
CS-WB08-LGR-03A	228		1342		14.17 14.19	26.13
CS-WB08-LGR-03B	273		1340		26.15 26.33	45.61
CS-WB08-LGR-04	341		1338		55.69 55.88	75.72

Bioreactor Monitoring

Personnel: Tennyson

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (√)	Notes
Date: 9-10-10		Time: 1500							
B3-T1-1	12.9	7.49	6.57	25.20	0.751	-55.4*	0.35		*checked twice.
B3-T1-2	12.4	7.15	6.52	27.39	0.775	-281.2	0.23	√	
B3-T1-3	12.85	6.79	7.08	24.43	0.376	-141.1	0.19		
B3-T2-1	9.67	8.90	6.60	31.39	1.448	-173.4	0.84	no	
B3-T2-2	10.01	8.84	6.74	33.74	0.805	-206.4	0.18		
B3-T3-1	9.96	8.56	6.84	29.71	0.376	-29.6*	0.20	no	
B3-T3-2	7.4	7.27	–	–	–	–	–		insufficient water.
B3-T4-1	6.32	6.25	–	–	–	–	–	no	
B3-T5-1	9.33	9.22	–	–	–	–	–	no	
B3-T5-2	7.98	7.78	–	–	–	–	–		
B3-T6-1	11.45	10.54	6.69	24.20	0.510	-94.5	0.22	√	No standing water in trenches despite 5-6" rain Tue-Wed.
B3-T6-2	12.34	10.35	6.61	26.08	0.554	-236.7	0.24		
B3-UIC									

B-3 Transfer System Monitoring

← Heavy rains →

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	9-6-10	-	9-7-10	1426	9-8-10	1350	9-9-10	0945	9-10-10	1105
Rate (gpm) / Cumulative Total (gal)										
T-1			7.56	4889619	7.21	4905776	7.90	4919208	19.2	4936436
T-2										
T-3										
T-4	C.S. closed no monitoring									
T-5										
T-6			9.77	1829730	7.95	1860149	9.98	1884618	45.1	1916997
B-3 (Total)										
CS-MW16-LGR			11.34	339541	13.74	351176	13.96	362538	n/r	376577
CS-MW16-CC			23.09	135950	24.51	157777	23.07	176884	n/r	199960
B3-EXW01			12.25	3789002	13.28	3801028	13.60	3812152	n/r	3825846
B3-EXW02			off line		off line		off line		n/r	

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change fliter.

	PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 = 38-35=3	PB-1 - PB-2 = 40-35=5	PB-1 - PB-2 = 40-34=6
Notes:	MW16LGR	226.2	181.0	164.41	155.26
	MW16CC	356.4	326.9	353.28	350.24
	B3EXW01	230.2	175.8	183.50	177.2
	B3EXW02				
	SCADA	syst: SCADA - OK	SCADA - ?	SCADA - ?	SCADA - OK
	no SCADA problems	Tank = 5/8, filling	Tank 5/16, filling	Tank 3/4, filling	13/16, filling, T/P just on

Week 176

n/r = not running

Personnel: Tennyson

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls		~~Monthly~~ Field Parameters					
			Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW26-UGR	20.32	9-10-10	1500	13.69	6.65	20.90	0.469	-281.3	0.34	
B3-MW27-UGR	17.00		1450	9.07	6.27	21.98	0.486	-272.2	0.41	
B3-MW28-UGR	18.33		1443	dry	–	–	–	–	–	dry
B3-MW29-UGR	20.40		1200	20.03	–	–	–	–	–	insufficient H_2O
B3-MW30-UGR	23.90		1145	23.41	6.77	21.14	0.463	174.1	4.46	
B3-MW31-UGR	39.06		1130	32.98	6.51	21.42	0.492	168.9	1.02	
B3-MW32-UGR	58.45		1428	38.88	6.39	20.95	0.339	73.9	4.74	
B3-MW33-UGR	29.55		1415	21.17	6.49	20.54	0.427	9.3	1.28	
B3-MW34-UGR	25.40	✓	1400	18.55	6.42	20.87	0.488	-255.8	0.61	

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01									
CS-D									
CS-MW15-LGR									
CS-MW16-CC									
CS-B3-EXW01									
CS-B3-EXW02									
CS-MW1-LGR									

Week 176

Personnel	Tennyson

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	9-10-10	0945	14.04	14.09 14.10	21.31
CS-WB05-LGR-02	182		0943		14.13 14.15	16.86
CS-WB05-LGR-03A	216		0940		14.17 14.16	44.77
CS-WB05-LGR-03B	262		0937		23.90 22.90	64.70
CS-WB05-LGR-04A	277		0935		30.43 29.42	76.81
CS-WB05-LGR-04B	329		0933		53.06 52.03	100.19
CS-WB05-BS-01	362		0931		67.40 66.37	106.44
CS-WB05-CC-01	432		0929		97.81 96.77	86.18
CS-WB05-CC-02	460		0927		109.95 108.92	97.93
CS-WB06-UGR-01	20	9-10-10	1035	14.07	14.05 14.07	17.42
CS-WB06-LGR-01	93		1032		14.11 14.11	19.41
CS-WB06-LGR-02	174		1029		14.13 14.15	50.99
CS-WB06-LGR-03A	207		1026		14.17 14.16	49.11
CS-WB06-LGR-03B	260		1024		24.88 25.20	72.00
CS-WB06-LGR-04	320		1022		50.95 51.26	102.28
CS-WB07-UGR-01	14	9-10-10	1059	14.05	14.07 14.07	16.20
CS-WB07-LGR-01	90		1057		14.10 14.11	18.46
CS-WB07-LGR-02	175		1055		14.13 14.14	~~14.31~~ 41.31
CS-WB07-LGR-03A	208		1053		14.17 14.16	39.94
CS-WB07-LGR-03B	257		1049		15.14 14.90	61.11
CS-WB07-LGR-04	318		1048		41.65 41.41	100.74
CS-WB08-UGR-01	38	9/10/10	1010	14.04	14.07 14.08	19.19
CS-WB08-LGR-01	115		1008		14.09 14.10	22.57
CS-WB08-LGR-02	193		1005		14.13 14.15	25.75
CS-WB08-LGR-03A	228		1004		14.17 14.18	48.15
CS-WB08-LGR-03B	273		1002		26.15 26.35	67.61
CS-WB08-LGR-04	341		1000		55.69 55.91	99.26

Bioreactor Monitoring

Personnel: Tennyson

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (√)	Notes
Date: 9-17-10		Time: 1015							
B3-T1-1	12.9	8.27	6.56	25.70	0.730	-97.3	0.28		
B3-T1-2	12.4	7.88	6.52	27.26	0.763	-278.4	0.25	✓	
B3-T1-3	12.85	7.54	6.49	29.43	0.389	-264.0	0.26		
B3-T2-1	9.67	9.11	6.65	32.07	1.266	-141.0	0.69		
B3-T2-2	10.01	9.15	6.81	32.68	0.844	-186.2	0.39	no	
B3-T3-1	9.96	9.18	6.40	30.85	0.388	-52.8	0.33		(ORP = -52.8)
B3-T3-2	7.4	dry	—	—	—	—	—	no	insufficient water
B3-T4-1	6.32	dry	—	—	—	—	—	no	
B3-T5-1	9.33	9.27	—	—	—	—	—		
B3-T5-2	7.98	7.84	—	—	—	—	—	no	
B3-T6-1	11.45	10.66	6.60	23.82	0.469	-276.9	0.29		
B3-T6-2	12.34	10.52	6.60	25.69	0.528	-219.0	0.31	✓	
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	9-13-10	1120	9-14	1030	9-15	1004	9-16	1345	9-17-10	0925
	Rate (gpm) / Cumulative Total (gal)									
T-1	18.6	4985345	18.6	5000977	7.25	5016509	19.8	5035685	7.82	5049529
T-2										
T-3										
T-4										
T-5										
T-6	44.8	200608	43.5	2039850	8.65	2069045	49.8	2106764	10.5	2132748
B-3 (Total)										
CS-MW16-LGR	n/r	415170	n/r	427029	13.80	439822	n/r	455168	13.74	465956
CS-MW16-CC	n/r	265270	n/r	285482	23.82	307340	n/r	333759	24.00	352488
B3-EXW01	n/r	3865250	n/r	3877436	14.23	3890511	n/r	3906171	14.01	3917165
B3-EXW02	n/r		n/r		n/r		n/r		n/r	

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change fliter.

	PB-1 - PB-2 = 42-32=10	PB-1 - PB-2 = 42-30=12	PB-1 - PB-2 = Ø dx'd filter	PB-1 - PB-2 = 37-37=0	PB-1 - PB-2 = n/r
Notes: MW16LGR	127.15	121.53	147.64	131.26	157.13
MW16CC	266.53	246.89	326.46	242.49	321.14
B3EXW01	135.8	122.0	168.0	135.7	175.4
B3EXW02	—	—	—	OK	EXO2 - n/r
SCADA	OK	OK	OK		SCADA - OK
	tank - 3/4, TP running	tank - 5/16, TP on	tank @ 11/16, filling	tank @ 3/4, TP running	tank 5/8, filling

n/r = not running.

Personnel: Tennyson

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls		Monthly Field Parameters					
			Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW26-UGR	20.32	9/7/10	1310	13.32	6.63	21.00	0.476	-268.6	0.35	
B3-MW27-UGR	17.00	↓	1254	9.35	6.56	22.41	0.484	-240.6	0.38	
B3-MW28-UGR	18.33	↓	1246	dry	—	—	—	—	—	dry
B3-MW29-UGR	20.40		1240	20.03	—	—	—	—	—	insufficient water
B3-MW30-UGR	23.90		1225	23.40	6.87	21.15	0.470	18.6	5.26	only 6" water column
B3-MW31-UGR	39.06		1207	33.02	6.77	21.13	0.480	-39.4	0.72	
B3-MW32-UGR	58.45		1147	39.46	6.37	20.98	0.338	35.6	4.84	
B3-MW33-UGR	29.55		1130	23.38	6.74	20.58	0.428	-112.7	0.57	
B3-MW34-UGR	25.40	↓	1115	18.43	6.26	20.82	0.485	257.0	0.37	

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01									
CS-D									
CS-MW16-LGR									
CS-MW16-CC									
CS-B3-EXW01									
CS-B3-EXW02									
CS-MW1-LGR									

Personnel	Tennyson

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	9/16	1548	14.06	14.09 14.11	21.25
CS-WB05-LGR-02	182		1545		14.13 14.15	37.60
CS-WB05-LGR-03A	216		1543		14.17 14.17	52.26
CS-WB05-LGR-03B	262		1541		23.90 22.91	72.18
CS-WB05-LGR-04A	277		1539		30.43 29.42	79.45
CS-WB05-LGR-04B	329		1537		53.06 52.03	101.94
CS-WB05-BS-01	362		1535		67.40 66.37	113.37
CS-WB05-CC-01	432		1532		97.81 96.77	95.13
CS-WB05-CC-02	460		1530		109.95 108.93	107.66
CS-WB06-UGR-01	20	↓	1502	14.06	14.05 14.07	17.45
CS-WB06-LGR-01	93		1500		14.11 14.12	16.15
CS-WB06-LGR-02	174		1450		14.13 14.15	48.33
CS-WB06-LGR-03A	207		1448		14.17 14.18	53.49
CS-WB06-LGR-03B	260		1446		24.88 25.20	76.39
CS-WB06-LGR-04	320		1443		50.95 51.25	103.28
CS-WB07-UGR-01	14	↓	1605	14.06	14.07 14.07	16.06
CS-WB07-LGR-01	90		1603		14.10 14.11	18.07
CS-WB07-LGR-02	175		1601		14.13 14.14	46.97
CS-WB07-LGR-03A	208		1559		14.17 14.16	51.79
CS-WB07-LGR-03B	257		1557		15.14 14.88	72.97
CS-WB07-LGR-04	318		1555		41.65 41.41	100.63
CS-WB08-UGR-01	38		1518	14.06	14.07 14.07	19.03
CS-WB08-LGR-01	115		1516		14.09 14.10	22.82
CS-WB08-LGR-02	193		1515		14.13 14.14	31.31
CS-WB08-LGR-03A	228		1510		14.17 14.16	53.18
CS-WB08-LGR-03B	273		1508		26.15 26.35	72.63
CS-WB08-LGR-04	341	↓	1506		55.69 55.89	101.95

Bioreactor Monitoring

Personnel: J. Bouch; A. Lindley; Tennyson

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp (deg. C)	SpCond (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (√)	Notes
Date: 9.21.10		Time: 0910							
B3-T1-1	12.9	8.18	6.66	30.56	1.275	-246.0	0.29		@0915
B3-T1-2	12.4	7.82	6.47	27.76	1.226	-205.1	0.26		@0950
B3-T1-3	12.85	7.32	6.59	23.71	0.680	-206.7	0.20	✓	@1030
B3-T2-1	9.67	9.05	6.65	31.92	1.871	-161.5	1.10		
B3-T2-2	10.01	9.02	6.73	32.34	1.445	-149.9	(low) ~~0.25~~ 0.40	0.17	
B3-T3-1	9.96	9.15	6.38	30.93	0.671	-64.0			
B3-T3-2	7.4	dry							Approx. 1.25" precip. this week sporadically SAT – FRI (9/18–9/24)
B3-T4-1	6.32	dry							
B3-T5-1	9.33	9.24							
B3-T5-2	7.98	7.73							
B3-T6-1	11.45	10.63	6.51	23.47	0.754	-220.5	0.18		* not enough water for a sample
B3-T6-2	12.34	10.45	6.47	25.77	0.688	-230.9	0.26	✓	@1100
B3-UIC			7.26	23.74	0.674	-6.6	5.55		@1045

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	9.20.10	0855	9.21.10	0911	9.22.10	0936	9.23.10	1143	9-24-10	1105
Rate (gpm) / Cumulative Total (gal)										
T-1	20.4	5,099,819	7.37	~~5,116,193~~ 5,116,512	8.01	5,133,681	6.97	5,152,147	7.76	5168382
T-2										
T-3										
T-4										
T-5										
T-6									9.61	2357700
	48.9 ↑	2,227,874	9.68 ↑	2259275	9.04 ↑	2291818	7.87 ↑	2321549	XXX	
CS-MW16-LGR	0	505021	13.85	516287	13.63	531495	0	545533	13.68	558151
CS-MW16-CC	0	421174	24.24	444341	24.35	461720	0	492381	24.45	515179
B3-EXW01	0	3956457	13.92	3970000	13.94	3983422	0	3997666	14.03	4010829
B3-EXW02										

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change fliter.

	Monday	Tuesday	Wednesday	Thursday	Friday
	PB-1 - PB-2 = 36-38 = -2	PB-1 - PB-2 = 0-0=0	PB-1 - PB-2 = 0-0=0	PB-1 - PB-2 = 40-34=6	PB-1 - PB-2 = 0-0=0
Notes: MW16LGR	134.85 (low)	155.4	132.8	145.2	152.88
MW16CC	235.76	311.5	234.8	285.1	305.68
B3EXW01	133.80	174.8	135.4	153.3	172.3
B3EXW02 – offline →					
SCADA		SCADA looks funny Tank is 3/4 full	SCADA looks OK Tank is 7/16 full	SCADA looks OK changed bag filter Tank is 1/4 full	SCADA-OK tank @ 1/2, filling, T/P off

Quicktrends is flatlined

Week 178

Personnel: J. Bouch

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls		Monthly Field Parameters					
			Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW26-UGR	20.32	9.23.10	1312	20.02	—	—	not enough water			—
B3-MW27-UGR	17.00	9.23.10	~~1257~~	8.93	6.65	25.10	0.783	29.7	1.06	
B3-MW28-UGR	18.33	9.23.10	—	—	—	—	DRY	—	—	—
B3-MW29-UGR	20.40	9.23.10	1252	13.25	6.58	21.40	0.794	-158.6	~~0.794~~ 0.58	
B3-MW30-UGR	23.90	9.23.10	1145	23.39	—	—	not enough water			—
B3-MW31-UGR	39.06	9.23.10	1200	33.02	6.48	21.19	0.801	101.5	0.53	
B3-MW32-UGR	58.45	9.23.10	1215	39.28	6.19	21.03	0.563	121.4	4.90	
B3-MW33-UGR	29.55	9.23.10	1223	23.31	6.82	20.50	0.715	-116.2	~~0.60~~ 0.60	
B3-MW34-UGR	25.40	9.23.10	1237	19.40	6.28	22.83	(0.055)	-195.1	4.64	mS is bouncing around

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01									
CS-D									
CS-MW16-LGR									
CS-MW16-CC									
CS-B3-EXW01									
CS-B3-EXW02									
CS-MW1-LGR									

Personnel	J. Bouch, A. Lindley

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	9/22/10	0955	14.06	14.09 14.13	21.17
CS-WB05-LGR-02	182		0954		14.13 14.18	35.62
CS-WB05-LGR-03A	216		0953		14.17 14.21	50.99
CS-WB05-LGR-03B	262		0952		23.90 22.88	70.92
CS-WB05-LGR-04A	277		0951		30.43 29.40	78.04
CS-WB05-LGR-04B	329		0950		53.06 52.02	100.60
CS-WB05-BS-01	362		0949		67.40 66.35	113.18
CS-WB05-CC-01	432		0948		97.81 96.74	100.83
CS-WB05-CC-02	460		09:47		109.95 108.91	113.36
CS-WB06-UGR-01	20	9/22/10	1022	14.08	14.05 14.10	17.47
CS-WB06-LGR-01	93		1021		14.11 14.14	16.45
CS-WB06-LGR-02	174		1020		14.13 14.19	45.66
CS-WB06-LGR-03A	207		1019		14.17 14.21	54.50
CS-WB06-LGR-03B	260		1018		24.88 25.17	77.39
CS-WB06-LGR-04	320		1017		50.95 51.22	100.64
CS-WB07-UGR-01	14	9/22/10	1036	14.09	14.07 14.09	16.18
CS-WB07-LGR-01	90		1035		14.10 14.13	17.97
CS-WB07-LGR-02	175		1034		14.13 14.14	44.71
CS-WB07-LGR-03A	208		1033		14.17 14.20	51.84
CS-WB07-LGR-03B	257		1032		15.14 14.86	73.03
CS-WB07-LGR-04	318		1031		41.65 41.41	99.42
CS-WB08-UGR-01	38	9/22/10	1010	14.08	14.07 14.10	18.95
CS-WB08-LGR-01	115		1009		14.09 14.14	22.88
CS-WB08-LGR-02	193		1008		14.13 14.19	34.86
CS-WB08-LGR-03A	228		1007		14.17 14.20	51.57
CS-WB08-LGR-03B	273		1006		26.15 26.31	71.02
CS-WB08-LGR-04	341		1005		55.69 55.86	100.06

9/20/10
In 29.85 / Zone 69.64
Atm: 14.09
Sample 0925

9/20/10
In 27.15 Zone 76.81
Atm: 14.08
Sample 1325

9/20/10
In 16.9 / Zone 72.16
Sample 1020
Atm: 14.10

9/20/10
In 28.32 Zone 70.49
Atm: 14.07
Sample 1420

SWMU B-3 Tree Mulch Bioreactor

Bioreactor Monitoring

Personnel: J Bouch; S Elliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp (deg. C)	SpCond (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (✓)	Notes
Date: 9.29.10		Time: 1000							
B3-T1-1	12.9	8.44	6.73	27.83	1.247	-258.1	0.42		
B3-T1-2	12.4	8.05	6.55	25.74	1.239	-266.3	0.44	✓	
B3-T1-3	12.85	7.59	6.70	23.48	0.711	-117.9	0.34		
B3-T2-1	9.67	9.08							
B3-T2-2	10.01	9.06	6.96	31.22	1.358	-115.6	0.29		
B3-T3-1	9.96	8.92							
B3-T3-2	7.4	dry							
B3-T4-1	6.32	dry							
B3-T5-1	9.33	9.17							
B3-T5-2	7.98	7.71							
B3-T6-1	11.45	11.01							
B3-T6-2	12.34	10.68	6.44	24.85	0.921	-244.7	0.37	✓	
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday
Date/Time:	9.27.10	1000	9.28.10	1400	9.29.10	0943	9.30.10	0833	10.1.10
	Rate (gpm) / Cumulative Total (gal)								
T-1	7.26	5,217,118	7.60	5214714	7.43	5,232,279	19.1	5,248,487	
T-2									
T-3									
T-4									
T-5									
T-6	5.32	2449486	10.1	2450646	6.41	2475,489	47.0	2505273	
B-3 (Total)									
CS-MW16-LGR	13.68	596092	13.66	598121	13.74	607,997	Ø	628921	
CS-MW16-CC	24.83	583504	24.99	587238	24.93	605,724	Ø	624660	
B3-EXW01	14.94	4050012	14.97	4050,32	13.09	4,060,624	Ø	4073,866	
B3-EXW02									

System off for tank repair

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change filter.

	PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =
	0-0=0	0-0=0	0-0=0	38-36=0	
Notes:	MW16LGR 151.78 MW16CC 297.07 B3EXW01 164.30 B3EXW02 ___ SCADA OK Tank is 4/4 full	Tank 3/4 full	145.4 262.2 151.0 OK Tank is 1/2 full	136.11 217.06 135.50 Tank is 1/2 full	Turned System on @ ≈1500.

Tank is leaking - Southern end of tank toward trenches. Turned of wells to let it drain. Called Ken and Adrien

* Rene came Out and fixed leak — wells back on @ 1400 Ex @ 1130

Week 179

* Tank leaking called Rene! Sent pictures to Ken and Adrien * System off still on*

Turned off B3 @ 0845 for Rene to fix the tank on 10/1/10

Personnel: J. Bouch; S. Elliott

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls		Monthly Field Parameters					
			Sample Time	Water Level (ft BTOC)	pH	Temp (deg. C)	SpCond (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW26-UGR	20.32	9.29.10	1135	13.02	6.67	21.43	0.816	-243.5	2.63	
B3-MW27-UGR	17.00	9.29.10	1143	8.80	6.64	24.87	0.831	55.9	~~8.70~~	0.63
B3-MW28-UGR	18.33	9.29.10		dry						
B3-MW29-UGR	20.40	9.29.10	1143	20.02						
B3-MW30-UGR	23.90	9.29.10	1146	23.38						
B3-MW31-UGR	39.06	~~9.29.10~~ 9.30.10	1050	33.10	6.54	20.97	0.817	95.9	0.56	
B3-MW32-UGR	58.45	9.29.10	1105	39.00	6.08	20.95	0.582	151.4	4.65	
B3-MW33-UGR	29.55	9.29.10	1117	21.40	6.94	20.77	0.648	113.1	3.50	
B3-MW34-UGR	25.40	9.29.10	1128	18.01	6.76	21.23	0.781	-210.9	0.61	

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp (deg. C)	SpCond (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01									
CS-D									
CS-MW16-LGR									
CS-MW16-CC									
CS-B3-EXW01									
CS-B3-EXW02									
CS-MW1-LGR									

Week 179

Personnel: Bouch + Elliott

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	9/29/10	0915	14.02	14.09 14.10	21.13
CS-WB05-LGR-02	182		0914		14.13 14.13	37.22
CS-WB05-LGR-03A	216		0913		14.17 14.15	51.60
CS-WB05-LGR-03B	262		0913		23.90 22.82	71.53
CS-WB05-LGR-04A	277		0912		30.43 29.35	77.86
CS-WB05-LGR-04B	329		0911		53.06 51.96	100.27
CS-WB05-BS-01	362		0910		67.40 66.31	114.15
CS-WB05-CC-01	432		0909		97.81 96.70	108.91
CS-WB05-CC-02	460		0908		109.95 108.84	121.47
CS-WB06-UGR-01	20		0941	14.03	14.05 14.06	17.41
CS-WB06-LGR-01	93		0941		14.11 14.09	16.41
CS-WB06-LGR-02	174		0939		14.13 14.13	44.88
CS-WB06-LGR-03A	207		0938		14.17 14.17	55.34
CS-WB06-LGR-03B	260		0938		24.88 25.12	78.24
CS-WB06-LGR-04	320		0937		50.95 51.17	99.75
CS-WB07-UGR-01	14		0955	14.04	14.07 14.05	14.19
CS-WB07-LGR-01	90		0954		14.10 14.10	17.91
CS-WB07-LGR-02	175		0953		14.13 14.15	44.09
CS-WB07-LGR-03A	208		0952		14.17 14.16	53.23
CS-WB07-LGR-03B	257		0951		15.14 14.83	74.41
CS-WB07-LGR-04	318		0950		41.65 41.35	98.23
CS-WB08-UGR-01	38		0928	14.04	14.07 14.05	19.03
CS-WB08-LGR-01	115		0928		14.09 14.09	22.29
CS-WB08-LGR-02	193		0927		14.13 14.12	37.76
CS-WB08-LGR-03A	228		0926		14.17 14.16	51.63
CS-WB08-LGR-03B	273		0925		26.15 26.26	71.09
CS-WB08-LGR-04	341	↓	0924		55.69 55.81	99.68

SWMU B-3 Tree Mulch Bioreactor

Bioreactor Monitoring

Personnel: J. Bouch, S Elliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth ('B TOC)	Sump Water Level ('B TOC)	pH	Temp (deg. C)	SpCond (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (✓)	Notes
Date: 10.7.10		Time: 1300							
B3-T1-1	12.9	8.32	6.60	25.95	0.780	-288.1	0.23	✓	
B3-T1-2	12.4	7.92	6.52	25.33	0.772	-276.6	0.37		
B3-T1-3	12.85	7.49	6.75	22.60	0.459	-160.0	0.44		
B3-T2-1	9.67	9.13							
B3-T2-2	10.01	9.38	7.01	30.26	0.890	-89.0	0.86		
B3-T3-1	9.96	9.16							
B3-T3-2	7.4	dry							
B3-T4-1	6.32	dry							
B3-T5-1	9.33	9.20							
B3-T5-2	7.98	7.86							
B3-T6-1	11.45	10.65	6.49	22.66	0.482	-192.9	0.31		
B3-T6-2	12.34	10.46	6.57	23.62	0.543	-267.7	0.35	✓	
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	10.4.10	0900	10.5.10	0826	10.6.10	0827	10.7.10	1012	10.8.10	0953
	Rate (gpm) / Cumulative Total (gal)									
T-1	20.5	5,296,830	21.9	5,314,395	8.04	5,331,422	7.51	5,350,048	20.7	5,366,660
T-2										
T-3										
T-4										
T-5										
T-6	48.2	2,592,511	50	2,624,463	9.72	2,655,738	7.97	2,689,199	48.6	2,718,695
B-3 (Total)										
CS-MW16-LGR	Ø	165,6767	Ø	166,8902	13.01	168,1642	12.416	169,4834	Ø	170,5860
CS-MW16-CC	Ø	195,341	Ø	718,145	24.67	742,233	24.61	767,836	Ø	790,325
B3-EXW01	Ø	4,116,930	Ø	4,123,286	13.78	4,136,457	13.36	4,150,474	Ø	4,162,738
B3-EXW02	—	—	—	—	—	—	—	—	—	—

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change filter

PB-1 - PB-2 =	34 - 38 = -1	38 - 36 = 2	0 - 0 = 0	0 - 0 = 0	38 - 36 = 2
Notes: checked my water level (to line)	152.4 MW16LGR 149.93 222.83 MW16CC 221.11 149.57 B3EXW01 150.00 B3EXW02 — SCADA Tank is 3/4 full	152.7 221.9 154.1 OK Tank is 1/2 full	178.94 303.53 193.80 Tank is 1/2 full	180.03 305.83 196.00 OK Tank is N/a full	163.1 233.1 167.5 OK Tank is 1/2 full

Tank held over the weekend

Week 80

Personnel: J. Bouch; S. Elliott

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls		Monthly Field Parameters					
			Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	Spt.cond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW26-UGR	20.32	10.7.10	1425	13.50	6.62	22.0	0.532	-200.7	0.55	
B3-MW27-UGR	17.00	10.7.10	1438	9.32	6.57	22.60	0.574	-263.8	0.50	
B3-MW28-UGR	18.33	10.7.10	1415	DRY	~~6.75~~ (SDP)	~~20.61~~	~~0.470~~	~~-39.5~~	~~0.49~~	
B3-MW29-UGR	20.40	10.7.10	1423	20.03		NOT ENOUGH WATER				
B3-MW30-UGR	23.90	10.7.10	1425	23.36						
B3-MW31-UGR	39.06	10.7.10	1340	33.13	6.69	20.98	0.510	-44.2	0.67	
B3-MW32-UGR	58.45	10.7.10	1348	39.75	6.43	20.91	0.387	47.2	4.69	
B3-MW33-UGR	29.55	10.7.10	1358	23.42	6.75	20.61	0.470	-39.5	0.49	
B3-MW34-UGR	25.40	10.7.10	1404	18.45	6.66	21.07	0.529	-213.1	0.43	

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	Spt.cond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01									
CS-D									
CS-MW16-LGR									
CS-MW16-CC									
CS-B3-EXW01									
CS-B3-EXW02									
CS-MW1-LGR									

Week 180

Personnel: Elliott & Birch

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	10/7/10	1031	14.23	14.09 14.29	21.24
CS-WB05-LGR-02	182		1030		14.13 14.33	30.19
CS-WB05-LGR-03A	216		1029		14.17 14.37	42.09
CS-WB05-LGR-03B	262		1029		23.90 22.99	62.04
CS-WB05-LGR-04A	277		1028		30.43 29.50	67.71
CS-WB05-LGR-04B	329		1027		53.06 52.13	90.05
CS-WB05-BS-01	362		1026		67.40 66.48	106.69
CS-WB05-CC-01	432		1025		97.81 96.87	104.38
CS-WB05-CC-02	460		1025		109.95 109.01	116.94
CS-WB06-UGR-01	20		1056	14.23	14.05 14.25	17.57
CS-WB06-LGR-01	93		1055		14.11 14.28	16.58
CS-WB06-LGR-02	174		1055		14.13 14.31	41.91
CS-WB06-LGR-03A	207		1054		14.17 14.34	52.30
CS-WB06-LGR-03B	260		1053		24.88 25.30	75.19
CS-WB06-LGR-04	320		1052		50.95 51.34	89.33
CS-WB07-UGR-01	14		1109	14.24	14.07 14.24	16.24
CS-WB07-LGR-01	90		1108		14.10 14.28	17.85
CS-WB07-LGR-02	175		1107		14.13 14.33	40.70
CS-WB07-LGR-03A	208		1106		14.17 14.35	47.03
CS-WB07-LGR-03B	257		1105		15.14 15.01	68.23
CS-WB07-LGR-04	318		1104		41.65 41.54	87.94
CS-WB08-UGR-01	38		1044	14.23	14.07 14.26	18.99
CS-WB08-LGR-01	115		1043		14.09 14.29	20.84
CS-WB08-LGR-02	193		1042		14.13 14.34	35.86
CS-WB08-LGR-03A	228		1041		14.17 14.35	42.14
CS-WB08-LGR-03B	273		1040		26.15 26.43	61.59
CS-WB08-LGR-04	341	↓	1039		55.69 55.99	90.07

Bioreactor Monitoring

Personnel: J Bouch; S. Elliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp (deg C)	SpCond (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (✓)	Notes
Date: 10.13.10		Time: 1028							
B3-T1-1	12.9	8.76	6.61	27.48	0.674	-267.8	0.45		
B3-T1-2	12.4	8.33	6.56	24.30	0.658	-283.7	0.35	✓	
B3-T1-3	12.85	7.79	6.73	23.0	0.389	-252.5	0.38		
B3-T2-1	9.67	9.15							
B3-T2-2	10.01	9.51							
B3-T3-1	9.96	9.23							
B3-T3-2	7.4	dry							
B3-T4-1	6.32	dry							
B3-T5-1	9.33	9.24							
B3-T5-2	7.98	7.92							
B3-T6-1	11.45	10.~~65~~	6.47	23.08	0.412	-163.5	0.47		
B3-T6-2	12.34	10.52	6.57	23.67	0.449	-270.7	0.53	✓	
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	10.11.10	0952	10.12.10	0905	10.13.10	0913	10.14.10	0830	10.15.10	0935
Rate (gpm) / Cumulative Total (gal)										
T-1	7.69	5,417,121	19.7	5,433,627	7.52	5,449,887	19.9	5,465,471	19.5	5,481,731
T-2										
T-3										
T-4										
T-5										
T-6	9.17	2,811,183	45.18	2,841,131	8.03	2,871,645	47.7	2,901,069	44.8	2,931,948
B-3 (Total)										
CS-MW16-LGR	12.01	740,051	12.01	752,120	- meter	out — *	Ø	9,095	Ø	203811
CS-MW16-CC	24.57	861,623	25.20	884,392	24.56	908,043	Ø	930,875	Ø	954,096
B3-EXW01	13.18	420,427	Ø	420,588	13.21	4,226,320	Ø	4,238,636	14.20	4,251,125
B3-EXW02	—	—	—	—	—	—	—	—	—	—

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change filter

	PB-1 - PB-2 = 0-0=0	PB-1 - PB-2 = 0-0=0	PB-1 - PB-2 =	PB-1 - PB-2 = 40-34=6	PB-1 - PB-2 = 40-34=6
Notes:	MW16LGR 186.1 MW16CC 306.4 B3EXW01 201.4 B3EXW02 — SCADA OK Tank is 1/2 full	167.4 231.9 166.6 OK Tank is 1/4 full	168.0 - 189.20 (screen) 229.2 - 309.25 (screen) 166.2 - 202.60 (screen) OK - Quicktrends OK - Bio screen not OK Tank 1/2 full	tank = 1/2 full	Tank is 5/16 full

Week 18 1

* zero'd meter out @ 1313. (changed batteries)

Personnel	S. Elliott & J. Gooch

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	10/13/10	941	14.21	14.09 14.25	21.16
CS-WB05-LGR-02	182		0939		14.13 14.30	25.54
CS-WB05-LGR-03A	216		0939		14.17 14.34	37.37
CS-WB05-LGR-03B	262		0937		23.90 22.94	57.30
CS-WB05-LGR-04A	277		0937		30.43 29.46	63.15
CS-WB05-LGR-04B	329		0936		53.06 52.09	85.61
CS-WB05-BS-01	362		0935		67.40 66.43	102.12
CS-WB05-CC-01	432		0934		97.81 96.82	101.48
CS-WB05-CC-02	460		0926		109.95 108.97	114.30
CS-WB06-UGR-01	20		1008	14.20	14.05 14.22	17.49
CS-WB06-LGR-01	93		1007		14.11 14.26	16.53
CS-WB06-LGR-02	174		1006		14.13 14.29	40.44
CS-WB06-LGR-03A	207		1005		14.17 14.32	49.84
CS-WB06-LGR-03B	260		1004		24.88 25.29	72.73
CS-WB06-LGR-04	320		1003		50.95 51.33	85.53
CS-WB07-UGR-01	14		1021	14.21	14.07 14.25	16.09
CS-WB07-LGR-01	90		1020		14.10 14.28	17.83
CS-WB07-LGR-02	175		1019		14.13 14.32	38.98
CS-WB07-LGR-03A	208		1018		14.17 14.33	42.70
CS-WB07-LGR-03B	257		1017		15.14 14.98	63.89
CS-WB07-LGR-04	318		1016		41.65 41.52	83.24
CS-WB08-UGR-01	38		0954	14.20	14.07 14.24	18.73
CS-WB08-LGR-01	115		0954		14.09 14.26	20.62
CS-WB08-LGR-02	193		0953		14.13 14.30	33.02
CS-WB08-LGR-03A	228		0952		14.17 14.33	37.72
CS-WB08-LGR-03B	273		0951		26.15 26.42	57.18
CS-WB08-LGR-04	341	V	0950		55.69 55.97	86.11

Personnel: Bouch + Elliott

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TOC (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls		Monthly Field Parameters					
			Sample Time	Water Level (ft BTOC)	pH	Temp. (Deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW26-UGR	20.32	10/13/10	1149	13.52	6.57	21.45	0.462	-228.4	0.83	
B3-MW27-UGR	17.00		1200	9.5	6.60	24.53	0.464	-38.2	0.76	
B3-MW28-UGR	18.33		1210	DRY	—					
B3-MW29-UGR	20.40		1212	20.03	—	NOT ENOUGH		WATER	—	
B3-MW30-UGR	23.90		1214	23.35	—	NOT ENOUGH		WATER	—	
B3-MW31-UGR	39.06		1106	33.28	6.58	21.01	0.456	-46.5	0.56	
B3-MW32-UGR	58.45		1117	40.84	6.97	20.85	0.296	44.2	5.60	
B3-MW33-UGR	29.55		1128	23.74	6.80	20.65	0.402	-2.0	1.22	
B3-MW34-UGR	25.40		1137	18.75	6.65	21.07	0.462	-198.0	0.75	

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01									
CS-D									
CS-MW16-LGR									
CS-MW16-CC									
CS-B3-EXW01									
CS-B3-EXW02									
CS-MW1-LGR									

Personnel: J. Bouch; A. Lindley; S. Elliott

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls: Sample Time	Weekly/Monthly Wtrlvls: Water Level (ft BTOC)	Monthly Field Parameters: pH	Temp (deg. C)	SpCond (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW26-UGR	20.32	10.20.10	1520	—	6.75	25.31	0.559	-162.0	1.71	W.L. 10/22/10 = 13.80' ftBGS.
B3-MW27-UGR	17.00	10.22.10	1120	9.90	6.64	24.32	0.841	121.3	0.91	
B3-MW28-UGR	18.33	10.22.10	1145	—						dry
B3-MW29-UGR	20.40	10.22.10	1140	20.02						Not enough water for parameters or sampling
B3-MW30-UGR	23.90	10/22/10	0930	23.34	6.85	21.33	0.735	98.7	4.72	
B3-MW31-UGR	39.06	10.22.10	1000	33.54	6.75	21.01	0.795	148.7	0.55	
B3-MW32-UGR	58.45	10.22.10	1015	46.18	7.08	20.94	0.532	124.9	5.12	
B3-MW33-UGR	29.55	10.22.10	1050	24.13	6.88	20.61	0.717	-174.7	0.34	
B3-MW34-UGR	25.40	10/20/10	1500	—	6.78	25.00	0.547	-122.7	1.73	W.L. 10/22/10 = 19.08' ftBGS

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp (deg. C)	SpCond (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01	10.20.10	1420	—	6.67	21.83	0.714	-198.0	0.32	
CS-D	10.20.10	1015	—	7.08	21.58	0.384	68.0	1.81	
CS-MW16-LGR	10.20.10	0945	—	7.12	22.44	0.393	18.9	2.78	
CS-MW16-CC	10.20.10	0915	—	7.34	22.86	0.471	-51.1	2.62	
CS-B3-EXW01	10.20.10	1340	—	7.10	23.08	0.400	~~54.0~~ 63.9 (ORP)	~~3.49~~ (DO) 2.70	
CS-B3-EXW02	—	NO	SAMPLE						
CS-MW1-LGR	10.20.10	1050	—	7.10	21.64	0.370	70.4	2.88	

SWMU B-3 Tree Mulch Bioreactor

Bioreactor Monitoring

Personnel: J Bouch; A Lindley; S. Elliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (√)	Notes
Date: 10/14/10		Time: 0830							
B3-T1-1	12.9	9.08	6.56	26.52	0.816	-252.0	0.41		Samp. time = 0900
B3-T1-2	12.4 ~~8.63~~	~~9.23~~	6.55	24.00	0.755	-280.9	0.34	✓	0920
B3-T1-3	12.85	8.11	6.77	22.76	0.469	-238.0	0.21		1015
B3-T2-1	9.67	9.23							
B3-T2-2	10.01	9.72							
B3-T3-1	9.96	9.26	6.67	30.92	0.603	3.9	1.26		
B3-T3-2	7.4	dry							
B3-T4-1	6.32	dry							
B3-T5-1	9.33	9.30							
B3-T5-2	7.98	dry							
B3-T6-1	11.45	10.67	6.49	23.29	0.505	-244.5	0.49	✓	Samp time = 1040
B3-T6-2	12.34	10.39	6.51	23.87	0.556	-278.9	0.21		Samp time = 1100
B3-UIC			~~7.23~~ 6.84	22.39	0.434	134.0	~~8.45~~ 6.84		Samp time 0805

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	0909	10.14.10	10.19.10	0755	10.20.10	0900	10.21.10	1030	10.22.10	0906
Rate (gpm) / Cumulative Total (gal)										
T-1	18.7	5,529,611	22.1	5,545,819	5.17	5,560,446	15.2	5,574,593	6.31	5,587,301
T-2										
T-3										
T-4										
T-5										
T-6	47.1	3,022,036	48.3	3,052,221	10.1	3,085,803	51.0	3,120,416	9.42	3,145,369
B-3 (Total)										
CS-MW16-LGR	11.51	54307	0	64860	11.45	76421	0	88302	11.45	98515
CS-MW16-CC	24.13	24946	0	47822	24.13	72152	0	97283	24.24	118858
B3-EXW01	12.92	4,281,139	0	4,301,045	12.96	4,314,044	0	4,327,541	12.92	4,339,212
B3-EXW02	—	—	—	—	—	—	—	—	—	—

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= Note: If bag filter pressure drop is > or = 10 psi change filter.

	PB-1 - PB-2 =	PB-1 - PB-2 = 37-37	PB-1 - PB-2 = 0-0=0	PB-1 - PB-2 = 39-39=0	PB-1 - PB-2 = 0-0=0
Notes:	MW16LGR 196.43 MW16CC 322.49 B3EXW01 210.40 B3EXW02 SCADA	- tank = 1/2 full - water shooting from 1 sprinkler head at end of T-1, replaced sprinkler head and the next one inline which was clogged.	197.05 319.91 209.10 Tank is 1/2 full	178.75 246.71 175.80 OK Tank is 3/4 full	~~Switch not activated.~~ Tank is 7/16 full

Week 182
month 42
Quarter ~~3~~ 4

Personnel: J. Bauch ; A. Lindley

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	10-22-20	1245		14.09 14.13	21.14
CS-WB05-LGR-02	182		1244		14.13 14.17	21.15
CS-WB05-LGR-03A	216		1243		14.17 14.20	33.0
CS-WB05-LGR-03B	262		1241	14.06	23.90 22.72	59.93
CS-WB05-LGR-04A	277		1240 ~~1234~~		30.43 29.24	58.71
CS-WB05-LGR-04B	329		1238		53.06 51.86	81.14
CS-WB05-BS-01	362		1237		67.40 66.21	97.40
CS-WB05-CC-01	432		1236		97.81 96.59	94.44
CS-WB05-CC-02	460		1235		109.95 108.76	107.03
CS-WB06-UGR-01	20		1157		14.05 14.09	17.29
CS-WB06-LGR-01	93		1156		14.11 14.13	16.46
CS-WB06-LGR-02	174		1155	14.07	14.13 14.16	39.09
CS-WB06-LGR-03A	207		1154		14.17 14.19	47.03
CS-WB06-LGR-03B	260		1153		24.88 25.10	69.93
CS-WB06-LGR-04	320		1152		50.95 51.16	82.17
CS-WB07-UGR-01	14		1253		14.07 14.08	15.75
CS-WB07-LGR-01	90		1252	14.07	14.10 14.12	17.78
CS-WB07-LGR-02	175		1251		14.13 14.15	37.37
CS-WB07-LGR-03A	208		1250		14.17 14.18	38.55
CS-WB07-LGR-03B	257		1249		15.14 14.82	59.72
CS-WB07-LGR-04	318		1248		41.65 41.36	79.06
CS-WB08-UGR-01	38		1223		14.07 14.08	18.37
CS-WB08-LGR-01	115		1222		14.09 14.12	20.49
CS-WB08-LGR-02	193		1221	14.06	14.13 14.17	29.92
CS-WB08-LGR-03A	228		1220		14.17 14.18	33.58
CS-WB08-LGR-03B	273		1219		26.15 26.24	53.05
CS-WB08-LGR-04	341		1218		55.69 55.78	82.26

SWMU B-3 Tree Mulch Bioreactor

Bioreactor Monitoring

Personnel: J. Bouch, A. Lindley, S. Elliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (√)	Notes
Date: 10-28-10		Time: 1315							
B3-T1-1	12.9	9.59	6.60	25.14	1.120	-297.3	0.59		
B3-T1-2	12.4	9.18	6.69	24.51	1.021	-288.7	0.47	✓	* changed out DO sensor tip
B3-T1-3	12.85	8.85	6.67	23.45	0.759	-273.3	0.53		
B3-T2-1	9.67	4.39							
B3-T2-2	10.01	dry							
B3-T3-1	9.96	9.29							
B3-T3-2	7.4	dry							
B3-T4-1	6.32	dry							
B3-T5-1	9.33	dry							
B3-T5-2	7.98	dry							
B3-T6-1	11.45	10.48	6.64	23.23	0.753	-230.9	0.57		
B3-T6-2	12.34	10.16	6.52	23.78	0.832	-283.0	0.57	✓	
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	10.25.10	0900	10.26.10	0845	10.27.10	0845	10.28.10	0900	10/29/10	
Rate (gpm) / Cumulative Total (gal)										
T-1	15.6	5,625,911	5.75	5,638,366	5.72	5,650,984	5.88 (1315)	5,665,899	5.80	5,675,864
T-2										
T-3										
T-4										
T-5							(1315)			
T-6	49.6	3,248,646	11.4	3,280,190	11.0	3,312,366	9.72	3,350,634	9.25	3,375,834
B-3 (Total)										
CS-MW16-LGR	Ø	131,434	11.17	142,381	11.17	152,841	11.11	163,649	11.0	173,658
CS-MW16-CC	Ø	188,214	23.87	211,339	23.92	233,703	23.87	256,924	23.97	278,584
B3-EXW01	Ø	4,376,146	12.78	4,388,516	12.74	4,400,465			12.79	4,424,341
B3-EXW02	—	—	—	—	—	—	—	—	—	—

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= 'Note: If bag filter pressure drop is > or = 10 psi change fliter.

	PB-1 - PB-2 = 40-36=4	PB-1 - PB-2 = 38-40=2	PB-1 - PB-2 = 40-36=4	PB-1 - PB-2 =	PB-1 - PB-2 = 40-35=5
Notes:	MW16LGR 180.2 MW16CC 263.4 B3EXW01 206.1 B3EXW02 — SCADA OK Tank is 1/2 full	202.28 351.69 215.50 OK Tank is 1/2	202.79 329.93 215.40 Tank is 1/2	201.21 332.20 214.70	EXW02 running, Ø at 290 gal, +21.2 gpm Tank 1/2 full began cycling at 11:00 AM

Week 183

Personnel: J.Bowen; A.Lindley

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	10/29/10	1326	14.26	14.09 14.33	20.97
CS-WB05-LGR-02	182		1325		14.13 14.35	19.20
CS-WB05-LGR-03A	216		1324		14.17 14.38	30.77
CS-WB05-LGR-03B	262		1323		23.90 22.53	50.72
CS-WB05-LGR-04A	277		1322		30.43 29.05	56.76
CS-WB05-LGR-04B	329		1321		53.06 51.68	79.26
CS-WB05-BS-01	362		1320		67.40 66.04	95.16
CS-WB05-CC-01	432		1319		97.81 96.43	92.26
CS-WB05-CC-02	460		1318		109.95 108.60	104.84
CS-WB06-UGR-01	20		1240	14.22	14.05 14.22	17.32
CS-WB06-LGR-01	93		1239		14.11 14.26	16.58
CS-WB06-LGR-02	174		1238		14.13 14.31	38.51
CS-WB06-LGR-03A	207		1237		14.17 14.43	45.61
CS-WB06-LGR-03B	260		1236		24.88 27.16	68.52
CS-WB06-LGR-04	320		1235		50.95 53.25	80.19
CS-WB07-UGR-01	14		1336	14.27	14.07 14.27	15.82
CS-WB07-LGR-01	90		1335		14.10 14.29	17.60
CS-WB07-LGR-02	175		1334		14.13 14.33	34.91
CS-WB07-LGR-03A	208		1333		14.17 14.37	36.61
CS-WB07-LGR-03B	257		1332		15.14 14.90	57.80
CS-WB07-LGR-04	318		1331		41.65 41.45	77.45
CS-WB08-UGR-01	38		1311	14.24	14.07 14.28	18.49
CS-WB08-LGR-01	115		1310		14.09 14.32	20.18
CS-WB08-LGR-02	193		1309		14.13 14.38	28.33
CS-WB08-LGR-03A	228		1308		14.17 14.39	31.64
CS-WB08-LGR-03B	273		1306		26.15 26.28	51.11
CS-WB08-LGR-04	341		1305		55.69 55.82	80.57

Week ~~182~~ 183

Personnel J. Bunch, A Lindley

Quarterly Monitoring

MPMWs	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Inside Pressure	Zone Pressure	
CS-WB05-LGR-01	99	10.26.10	1340	13.97	21.04	
CS-WB05-LGR-02	182	10/26/10	1245	14.01	19.91	
CS-WB05-LGR03A	216	10.26.10	1020	14.02	31.72	
CS-WB05-LGR03B	262	10.19.10	0930	24.73	54.64	14.14
CS-WB05-LGR04A	277	10/26/10	0940	30.74	57.74	
CS-WB05-LGR04B	329	10.26.10	0905	53.42	79.99	13.76 ATM
CS-WB05-BS-01	362	10.25.10	1315	67.88	96.30	
CS-WB05-CC-01	432	10.25.10	1045	98.43	92.85	
CS-WB05-CC-02	460	10.25.10	0930	110.71	108.52	13.98
CS-WB06-UGR-01	20	10.29.10	1210	14.22	17.32	
CS-WB06-LGR-01	93	10.29.10	1125	14.26	16.58	
CS-WB06-LGR-02	174	10/29/10	1100	14.31	38.51	
CS-WB06-LGR03A	207	10/29/10	0945	14.43	45.61	
CS-WB06-LGR03B	260	10.18.10	1315	27.06	71.03	14.07
CS-WB06-LGR-04	320	10/29/10	0850	53.25	80.19	14.22
CS-WB07-UGR-01	14	10.27.10	1425	13.99	15.59	
CS-WB07-LGR-01	90	10.27.10	1330	14.05	17.68	
CS-WB07-LGR-02	175	10/27/10	1030	14.08	36.81	
CS-WB07-LGR03A	208	10/27/10	0940	14.10	37.12	
CS-WB07-LGR03B	257	10/18/10	1045	14.83	61.34	14.10
CS-WB07-LGR-04	318	10/27/10	0900	43.22	77.89	13.99
CS-WB08-UGR-01	38	10.28.10	1400	14.24	18.52	
CS-WB08-LGR-01	115	10/28/10	1310	14.28	20.40	
CS-WB08-LGR-02	193	10.28.10	1045	14.30	28.54	
CS-WB08-LGR03A	228	10/28/10	1000	14.31	32.12	
CS-WB08-LGR03B	273	10/18/10	1430	28.20	54.96	14.04
CS-WB08-LGR-04	341	10.28.10	0920	57.88	80.17	14.18

Monitroing Wells	Sample Date	Sample Time	pH	Temp	SpCond	ORP	DO
~~B3-MW01~~							
CS-D							*
CS-MW16-LGR							
~~CS-MW16-GC~~							
CS-MW1-LGR							

* See other field form

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Personnel: Elliott

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Wtrlvls		Monthly Field Parameters					
			Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW26-UGR	20.32	10/28/10	0954	13.97	6.59	21.42	0.812	-243.1	0.48	* changed out DO sensor tip.
B3-MW27-UGR	17.00		1000	10.39	6.57	22.66	0.863	-227.2	0.46	
B3-MW28-UGR	18.33		1006	dry						
B3-MW29-UGR	20.40		1009	20.14						
B3-MW30-UGR	23.90		1012	23.44						
B3-MW31-UGR	39.06		1016	33.62	6.80	20.94	0.778	131.7	0.52	
B3-MW32-UGR	58.45		1025	47.90	7.14	20.93	0.561	116.7	6.25	
B3-MW33-UGR	29.55		1033	24.25	6.89	20.59	0.720	65.1	0.61	
B3-MW34-UGR	25.40		1040	19.23	6.78	21.20	0.783	-192.8	0.44	

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01									
CS-D									
CS-MW16-LGR									
CS-MW16-CC									
CS-B3-EXW01									
CS-B3-EXW02									
CS-MW1-LGR									