



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

April 4, 2008

U-114-08

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: Monthly Status Report (Quarter 3, Month 9 - January 2008) 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:

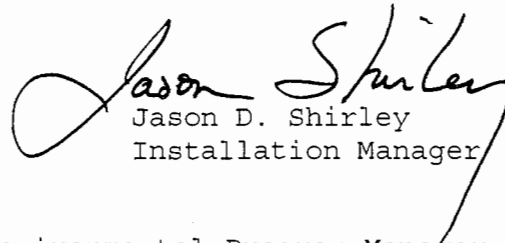
The Camp Stanley Storage Activity (CSSA), McAlester Army Ammunition Plant, U.S. Army Field Support Command, Army Materiel Command, U.S. Army, is submitting this monthly report summarizing the injection activities performed at the on-post Solid Waste Management Unit (SWMU) B-3 site. The activities performed 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 quarterly report contains data as specified by the subject Texas Commission on Environmental Quality (TCEQ) Underground Injection Control (UIC) permit for the period of November 1, 2007 through January 31, 2008 (Month 9). This quarterly report includes twice monthly samples of the injected groundwater for volatile organic concentrations and total dissolved solids presented in the attached Table 1. Field collected parameters including injection volumes, injection pressures and the pH of recovered groundwater for the month of January 2008 is also attached.

Between December 31, 2007 and January 31, approximately 370,195 gallons of groundwater from well CS-MW16-CC (176,953 gallons) and CS-MW16-LGR (193,242 gallons), were injected into SWMU B-3 bioreactor trench 1. A total of 1,929,677 gallons of recovered groundwater from CS-MW16-LGR and CS-MW16-CC have been injected into the bioreactor trench 1 since startup of the bioreactor. Samples of the injected groundwater were collected on January 9, 2008 and January 22, 2008. Results of analysis are summarized in Table 1 with the laboratory data packages attached. Field forms which contain operating pressures and pH readings for the reporting period are also attached.

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

Sincerely,


Jason D. Shirley
Installation Manager

Attachments

cc: Glare Sanchez, CSSA Environmental Program Manager
Robert Bowersock, USACE (ltr only)
Julie Burdey, Parsons
Ken Rice, Parsons
Brian Vanderglas, Parsons
File: 744223.11000

Table 1
B3 - UIC Analytical Results

	Sample ID			B3-UIC			B3-UIC			B3-UIC			B3-UIC			B3-UIC						
	Sample Date			11/08/07			11/19/07			12/03/07			12/18/07			01/09/08			01/22/08			
	Sample Type			N1			N1			N1			N1			N1			N1			
Sampling Method			Grab			Grab			Grab			Grab			Grab			Grab				
Lab ID			AX70396			AX71128			AX71637			AX72177			AX72694			AX73060				
	B-3 UIC			Results			Results			Results			Results			Results						
	Lab	MDL	PQL	Criteria (RCRA Haz.)	Results	Flags	Dilution	Results	Flags	Dilution	Results	Flags	Dilution	Results	Flags	Dilution	Results	Flags	Dilution			
SW8260B (µg/L)																						
Cis-DCE	0.16	1.2	--		60		1	89		1	21		1	67		1	93		1	46		1
Trans-DCE	0.19	0.6	--		1.6		1	4.5		1	0.19	U	1	1.60	U	1	1.5		1	0.71		1
TCE	0.16	1.0	500.		67		1	95		5	28		1	78		1	96		1	59		1
PCE	0.15	1.4	700.		19		1	28		1	27		1	71		1	88		1	31		1
Toluene	0.17	1.1	--		0.17	U	1	0.17	U	1	1.0	J	1	0.17	U	1	0.17	U	1	0.17	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	0.23	U	1	0.23	U	1
EPA 160.1 (mg/L)																						
TDS	4.4	10.	--		385		1	382		1	328		1	331		1	326		1	349		1
Field measured																						
pH					7.55			7.15			7.09			6.96			7.02			7.06		

Tables present all laboratory results for analytes.

Data packages for laboratory analysis 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 Qualifiers:

J- The analyte was positively identified, the quantitation is an estimation.

U- The analyte was analyzed for, but not detected. The associated numerical value is the MDL.

Abbreviations and Notes:

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

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: <i>1-4-08</i>		Time: <i>1300</i>							
B3-T1-1	12.9	11.88	6.29	21.77	0.856	-786.0	0.57	✓	
B3-T1-2	12.4	11.44	6.28	22.27	0.926	-749.3	0.51		
B3-T1-3	12.85	11.11	6.30	22.19	0.927	-150.8	0.46		
B3-T2-1	9.67	<i>dry</i>							
B3-T2-2	10.01	9.76							
B3-T3-1	9.96	9.67	6.70	26.41	1.335	-81.7	0.64		
B3-T3-2	7.4	<i>dry</i>							
B3-T4-1	6.32	<i>dry</i>							
B3-T5-1	9.33	<i>dry</i>							<i>probe trip covered 1/4" and.</i>
B3-T5-2	7.98	<i>dry</i>							
B3-T6-1	11.45	11.13							
B3-T6-2	12.34	12.02							
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday	Tuesday	Wednesday	Thursday	Friday
Date/Time:	<i>not run</i>	<i>not run</i>	01-02-08 1457	01-03-08 0907	1-4-08 1158
Rate (gpm) / Cumulative Total (gal)					
T-1			11.86 ↓ 517,083	16.60/31.50 521,161	10.42 ↓ 535,527
T-2					
T-3			<i>gravity Q only</i>		<i>gravity Q only</i>
T-4					
T-5					
T-6					
B-3 (Total)			517,083	521,161	535,527

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)) *Note: if bag filter pressure drop is > or = 20 psi change filter.

PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 = 32 - 22 = 10	PB-1 - PB-2 =
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Pressure Readings

P-1				
P-2				
P-3				
P-4				

Notes: *1-2-08 after freezing nights, pipe sections coming off L&R + CC wellheads broken + leaking when pumps on.*

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	1-4-08	1624	14.18	14.24	25.44
CS-WB05-LGR-02	182	↓	1622		14.30	25.68
CS-WB05-LGR-03A	216		1620		14.32	37.42
CS-WB05-LGR-03B	262		1615		25.87	57.39
CS-WB05-LGR-04A	277		1614		32.39	62.07
CS-WB05-LGR-04B	329		1612		55.01	84.63
CS-WB05-BS-01	362		1610		69.36	101.48
CS-WB05-CC-01	432		1608		99.76	132.05
CS-WB05-CC-02	460		1605		111.91	144.18
CS-WB06-UGR-01	20		↓	1521	14.19	14.20
CS-WB06-LGR-01	93	1520		14.23		16.61
CS-WB06-LGR-02	174	1518		14.27		28.77
CS-WB06-LGR-03A	207	1516		14.29		44.08
CS-WB06-LGR-03B	260	1514		23.74		66.98
CS-WB06-LGR-04	320	1512		49.79		87.29
CS-WB07-UGR-01	14	↓		1543		14.18
CS-WB07-LGR-01	90		1542	14.26	19.48	
CS-WB07-LGR-02	175		1540	14.29	38.50	
CS-WB07-LGR-03A	208		1538	14.29	41.77	
CS-WB07-LGR-03B	257		1536	17.77	63.00	
CS-WB07-LGR-04	318		1534	44.25	83.94	
CS-WB08-UGR-01	38	↓	1501	14.18	14.20	14.21
CS-WB08-LGR-01	115		1500		14.23	30.26
CS-WB08-LGR-02	193		1458		14.28	29.57
CS-WB08-LGR-03A	228		1456		14.31	38.92
CS-WB08-LGR-03B	273		1454		21.09	58.38
CS-WB08-LGR-04	341		1452		50.63	88.60

Bioreactor Monitoring

Personnel: S. Elliott + E. Tenngesen

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:		Time:								
B3-T1-1	12.9	11.03	6.31	22.03	0.793	-176.3	0.46	✓		
B3-T1-2	12.4	10.07	6.35	22.17	0.819	-163.6	0.51			
B3-T1-3	12.85	10.35	6.35	21.29	0.460	-771.7	0.40			
B3-T2-1	9.67	dry-no tank								
B3-T2-2	10.01	9.76								
B3-T3-1	9.96	9.19								
B3-T3-2	7.4	dry-no tank								
B3-T4-1	6.32	dry-no tank								
B3-T5-1	9.33	dry-no tank								
B3-T5-2	7.98	dry-no tank - mud on probe (1/4")								
B3-T6-1	11.45	11.15								
B3-T6-2	12.34	12.01								
B3-UIC			7.02	22.16	0.484	-48.3	4.88			

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday	Tuesday	Wednesday	Thursday	Friday
Date/Time:	1.7.08 0855	1.8.08 0745	1.9.08 0715	1.10.08 0745	
Rate (gpm) / Cumulative Total (gal)					
T-1	9.08/31.06 543,312	16.05/32.08 557,161	16.50/32.17 573,124	15.58 588,510	
T-2					
T-3					
T-4					
T-5					
T-6					
B-3 (Total)	543,312	557,161	573,124	588,510	

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2) = *Note: If bag filter pressure drop is > or = 20 psi change filter.

PB-1 - PB-2 = 33 - 21 = 12 PB-1 - PB-2 = 25 - 24 = 1 PB-1 - PB-2 = 25 - 24 = 1 PB-1 - PB-2 = PB-1 - PB-2 =

Pressure Readings

P-1				
P-2				
P-3				
P-4				

Notes: Xpumping MW16-LGR * changed bag filter 1/8/08 (0745)

Week 37

Personnel: J. Elliott + 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	1/9/08	0831	14.14	14.22	25.33
CS-WB05-LGR-02	182		0829		14.24	24.37
CS-WB05-LGR-03A	216		0828		14.29	37.29
CS-WB05-LGR-03B	262		0827		25.83	57.27
CS-WB05-LGR-04A	277		0826		32.35	63.59
CS-WB05-LGR-04B	329		0825		54.97	86.07
CS-WB05-BS-01	362		0824		69.31	101.34
CS-WB05-CC-01	432		0823		99.71	131.01
CS-WB05-CC-02	460		0822		111.84	143.14
CS-WB06-UGR-01	20		0900	14.14	14.18	14.60
CS-WB06-LGR-01	93		0859		14.24	16.52
CS-WB06-LGR-02	174		0858		14.25	28.24
CS-WB06-LGR-03A	207		0857		14.28	43.32
CS-WB06-LGR-03B	260		0856		23.71	66.21
CS-WB06-LGR-04	320		0855		49.75	86.97
CS-WB07-UGR-01	14		0914	14.14	14.18	14.17
CS-WB07-LGR-01	90		0913		14.24	19.31
CS-WB07-LGR-02	175		0911		14.27	38.17
CS-WB07-LGR-03A	208		0911		14.29	40.83
CS-WB07-LGR-03B	257		0910		17.75	62.04
CS-WB07-LGR-04	318		0909		44.24	84.07
CS-WB08-UGR-01	38		0846	14.14	14.18	14.17
CS-WB08-LGR-01	115		0845		14.22	30.01
CS-WB08-LGR-02	193		0844		14.29	28.66
CS-WB08-LGR-03A	228		0843		14.30	38.53
CS-WB08-LGR-03B	273		0842		21.06	57.99
CS-WB08-LGR-04	341	✓	0840		50.59	88.29

Personnel		S. Elliott + 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	1/11/08	1003	14.03	14.10	25.24
CS-WB05-LGR-02	182		1002		14.15	23.19
CS-WB05-LGR-03A	216		1001		14.17	36.24
CS-WB05-LGR-03B	262		1000		25.71	56.16
CS-WB05-LGR-04A	277		0959		32.24	61.59
CS-WB05-LGR-04B	329		0958		54.86	84.18
CS-WB05-BS-01	362		0957		69.20	99.79
CS-WB05-CC-01	432		0956		99.60	124.19
CS-WB05-CC-02	460		0955		111.75	136.21
CS-WB06-UGR-01	20		1057	14.03	14.08	14.22
CS-WB06-LGR-01	93		1056		14.10	16.42
CS-WB06-LGR-02	174		1055		14.14	27.68
CS-WB06-LGR-03A	207		1054		14.14	42.35
CS-WB06-LGR-03B	260		1053		23.61	65.23
CS-WB06-LGR-04	320		1052		49.64	85.61
CS-WB07-UGR-01	14		1022	14.03	14.05	14.03
CS-WB07-LGR-01	90		1021		14.11	19.14
CS-WB07-LGR-02	175		1020		14.16	37.49
CS-WB07-LGR-03A	208		1019		14.17	39.80
CS-WB07-LGR-03B	257		1018		17.64	61.06
CS-WB07-LGR-04	318		1017		44.15	82.82
CS-WB08-UGR-01	38		1043	14.01	14.06	14.08
CS-WB08-LGR-01	115		1042		14.10	29.81
CS-WB08-LGR-02	193		1041		14.14	27.49
CS-WB08-LGR-03A	228		1040		14.16	37.12
CS-WB08-LGR-03B	273		1036		20.95	56.58
CS-WB08-LGR-04	341		1035		50.48	86.88

Bioreactor Monitoring

Personnel: S. Elliott + E. Tenney

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: 1/14/08		Time: 1345							
B3-T1-1	12.9 12.85	11.51	6.37	21.58	0.857	-159.1	0.67	✓	- had to cut sump to install float switch for automation, TD must very close to what it was
B3-T1-2	12.4	11.22	6.35	22.22	0.855	-150.0	0.53		
B3-T1-3	12.85	11.09	6.35	21.87	0.855	-147.4	0.36		
B3-T2-1	9.67	dry - no tone							
B3-T2-2	10.01	9.82							
B3-T3-1	9.96	9.21							
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	11.15							
B3-T6-2	12.34	12.03	7.06	22.26	0.855	-73.7	4.36 (S)		
B3-UIC			7.06	22.26	0.855	-73.7	4.36		

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday	Tuesday	Wednesday	Thursday	Friday			
Date/Time:	1-14-08 16:30	1-15-08 09:00	1-16-08 08:15	1-17-08 08:30	1-18-08			
Rate (gpm) / Cumulative Total (gal)								
T-1	33.9	605,458	10,180	75	15,656	75	32,163	47,410
T-2								
T-3								
T-4								
T-5								
T-6								
B-3 (Total)		605,458	10,180		15,656		32,163	47,410
CS-MW16-LGR			586,733	28.31	591,425		98.14	604,650
CS-MW16-CC			1609,590	30.18	1609,634		30.90	600,760
Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)) = *Note: if bag filter pressure drop is > or = 20 psi change filter.								
PB-1 - PB-2 =		PB-1 - PB-2 =		PB-1 - PB-2 =	53 - 57 = 1	PB-1 - PB-2 =		PB-1 - PB-2 =

Notes - meter on T-1 was moved to CS-MW16-CC and a new meter was installed on T-1 (1/14/08)
 - system run sporadically this week due to automation controls installation

Bioreactor Monitoring

* Sample ~ 75,000 gal overnight (1/22-1/23)

Personnel S. Elliott & K. Conkey

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: <u>1/22/08</u>		Time: <u>0900</u>							
B3-T1-1	12.9	12.35	6.14	22.44	1.001	-167.5	0.41	✓	1/23 DO ORP BTOC 0.56 196.5 9.75 0.27 173.9 5.43 0.42 149.1 7.25
B3-T1-2	12.4	12.08	6.15	22.57	0.923	-173.9	0.27		
B3-T1-3	12.85	11.82	6.21	21.67	0.796	-149.1	0.42		
B3-T2-1	9.67	dry - no tank							
B3-T2-2	10.01	dry							
B3-T3-1	9.96	dry							
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	dry							
B3-T6-2	12.34	dry							
B3-UIC			7.08	21.48	0.531	-47.2	5.85		

0930
1000
1120

1400

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday	Tuesday	Wednesday	Thursday	Friday
Date/Time:	1-21-08	1-22-08 1200	1-23-08 0645	1-24-08 0100	1-25-08 0700
Rate (gpm) / Cumulative Total (gal)					
T-1		73 49,750	56 114,306	14.5/33.4 162,841	205,424
T-2	not run today due	↳ turned down to			system down for part of the day for meter installation
T-3	to power pole	44 psi (400)			
T-4	replacement				
T-5					
T-6					
B-3 (Total)	47,410	49,750	114,306	14.5 162,841	
CS-MW16-LGR	33.36 604,650	27.97 605,505	27.64 637,986	25.81 676,796	18.61 715,580
CS-MW16-CC	6.89,331	30.67 624,331	24.40 643,165	14.73,766	67.7,706

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)) = *Note: If bag filter pressure drop is > or = 20 psi change filter.

PB-1 - PB-2 = /	PB-1 - PB-2 = 44-43 = 1	PB-1 - PB-2 = 50-30 = 20 *	PB-1 - PB-2 = 26-23 = 3	PB-1 - PB-2 =
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Notes: Bacteria sample from Sump 1-2 = 1/2 liter (only 1 filter, couldn't get 2nd filter to stay on the line, kept popping off) - sample canceled
Lab will only get 1 filter

* changed bag filter 1/23/08 0800

Week 39
month 9
Oct. 16 - 3

DOE = none
TAR = 11-50

Personnel		E. Jennings, 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	1/21/08 ↑ ↓ ✓	0920	14.16	14.28 14.28	25.86 25.86
CS-WB05-LGR-02	182		0919		14.28	22.45
CS-WB05-LGR-03A	216		0917		14.30	35.96
CS-WB05-LGR-03B	262		0915		25.86	55.90
CS-WB05-LGR-04A	277		0913		32.38	61.83
CS-WB05-LGR-04B	329		0911		55.00	84.31
CS-WB05-BS-01	352		0909		69.34	99.47
CS-WB05-CC-01	432		0907		99.74	127.94
CS-WB05-CC-02	460		0905		111.88	140.03
CS-WB06-UGR-01	20	↑	1418	14.14	14.16	14.33
CS-WB06-LGR-01	93		1412		14.20	16.54
CS-WB06-LGR-02	174		1412		14.24	27.33
CS-WB06-LGR-03A	207		1410		14.27	41.72
CS-WB06-LGR-03B	260		1408		23.68	54.62
CS-WB06-LGR-04	320		1406		49.79	85.06
CS-WB07-UGR-01	14	↑	1020	14.20	14.23	14.23
CS-WB07-LGR-01	90		1058		14.27	19.09
CS-WB07-LGR-02	175		1056		14.31	19.81
CS-WB07-LGR-03A	208		1054		14.34	39.15
CS-WB07-LGR-03B	257		1052		17.52	60.36
CS-WB07-LGR-04	318		1050		44.31	82.41
CS-WB08-UGR-01	38	↓ ✓	1546	14.11	14.18	14.18
CS-WB08-LGR-01	115		1545		14.21	29.99
CS-WB08-LGR-02	193		1544		14.24	46.73
CS-WB08-LGR-03A	228		1543		14.24	36.52
CS-WB08-LGR-03B	273		1542		21.03	55.98
CS-WB08-LGR-04	341		1540		50.57	86.32

Personnel S. Elliott + K. Rice

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: 1/25/08		Time: 0830							
B3-T1-1	12.9	7.69	6.56	21.53	0.741	-244.8	0.35	✓	DWA filter = 100 ml " = 500 ml
B3-T1-2	12.4	7.46	6.35	21.57	1.001	-243.9	0.26		
B3-T1-3	12.85	7.30	6.55	20.07	0.611	-183.2	0.34		
B3-T2-1	9.67								
B3-T2-2	10.01	dry							
B3-T3-1	9.96								
B3-T3-2	7.4								
B3-T4-1	6.32								
B3-T5-1	9.33								
B3-T5-2	7.98								
B3-T6-1	11.45								
B3-T6-2	12.34								
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings					
Meter	Monday	Tuesday	Wednesday	Thursday	Friday
Date/Time:					
Rate (gpm) / Cumulative Total (gal)					
T-1					
T-2					
T-3					
T-4					
T-5					
T-6					
B-3 (Total)					
CS-MW16-LGR					
CS-MW16-CC					
Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2) = *Note: If bag filter pressure drop is > or = 20 psi change filter.					
PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =

Notes: Resample from 1/22/08

Bioreactor Monitoring

Personnel: 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 (Y)	Notes
Date: <u>1/30/08</u>		Time: <u>1400</u>							<u>1/23/08</u> <u>1/29/08 1450</u>
B3-T1-1	12.9	9.97	6.40	21.62	0.733	-217.6	0.40	X	<u>11.11' BTOC</u>
B3-T1-2	12.4	9.58	6.48	21.40	0.876	-213.8	0.47		<u>10.72'</u>
B3-T1-3	12.85	9.11	6.67	20.86	0.651	-153.2	0.64		<u>10.31'</u>
B3-T2-1	9.67	dry							
B3-T2-2	10.01	dry							
B3-T3-1	9.96	dry							
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	dry							
B3-T6-2	12.34	dry							
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday	Tuesday	Wednesday	Thursday	Friday
Date/Time:	<u>1.26.08 0715</u>	<u>1.29.08 0845</u>	<u>1.30.08 0815</u>	<u>1.31.08</u>	<u>2.1.08 (1300 wells 1420+)</u>
Rate (gpm) / Cumulative Total (gal)					
T-1	35 212,720	15.4/386.6 257,673	Ø 269,113	Ø	35/309 = 0.0
T-2					
T-3					
T-4					
T-5					
T-6					
B-3 (Total)	212,720				
CS-MW16-LGR	29.48 225,735	28.69 264,982	Ø 274,935		32.01
CS-MW16-CC	672,735	Ø 674,886	Ø 674,886		34.05
Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2) = *Note: If bag filter pressure drop is > or = 20 psi change filter.					
PB-1 - PB-2 = <u>31-30=1</u>		PB-1 - PB-2 = <u>31-29=2</u>		PB-1 - PB-2 = <u>35-35=0</u>	

New meter

Notes: * system shut down for new well pumping test 1/29/08 ~ 330pm
 ** system re-started 2/1/08 ~ 1300 w/ CC + LGR; 1430 transfer pump on CC shut off, LGR on @ 30 gpm

Week 40
 Quarter 3 Month 9

Personnel		S. Elliott + A. Lindley				
Weekly Water Level Monitoring						
Well Interval	Sampling Port Depth (ft BTCC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	1/30/08	1317	14.05	14.13	25.00
CS-WB05-LGR-02	182		1315		14.17	20.01
CS-WB05-LGR-03A	216		1314		14.20	32.95
CS-WB05-LGR-03B	262		1313		22.73	52.90
CS-WB05-LGR-04A	277		1312		29.24	59.88
CS-WB05-LGR-04B	329		1311		51.89	82.54
CS-WB05-BS-01	362		1310		66.23	96.96
CS-WB05-CC-01	432		1309		96.61	125.96
CS-WB05-CC-02	460		1308		108.76	138.07
CS-WB06-UGR-01	20		1345	14.05	14.06	15.87
CS-WB06-LGR-01	93		1344		14.11	16.45
CS-WB06-LGR-02	174		1343		14.17	27.25
CS-WB06-LGR-03A	207		1342		14.18	40.87
CS-WB06-LGR-03B	260		1341		23.49	63.76
CS-WB06-LGR-04	320		1340		49.53	83.66
CS-WB07-UGR-01	14		1331	14.05	14.10	14.45
CS-WB07-LGR-01	90		1330		14.14	18.73
CS-WB07-LGR-02	175		1329		14.18	37.00
CS-WB07-LGR-03A	208		1328		14.18	37.23
CS-WB07-LGR-03B	257		1327		17.64	58.44
CS-WB07-LGR-04	318		1326		44.12	80.94
CS-WB08-UGR-01	38		1253	14.03	14.13	14.20
CS-WB08-LGR-01	115		1251		14.20	14.82
CS-WB08-LGR-02	193		1250		14.22	24.89
CS-WB08-LGR-03A	228		1249		14.25	34.62
CS-WB08-LGR-03B	273		1248		20.87	54.07
CS-WB08-LGR-04	341		1247		50.40	87 84.79

* no water being applied to B-3 due to pumping test

Profiled flow samples WB08

Personnel <i>S. Elliott / K. Costley / A. Lindley</i>									
Quarterly Monitoring									
MPMWs	Sample Date	Sample Time	pH	Temp	SpCond	ORP	DO	Regulatory (V)	Performance (V)
CS-WB05-LGR-01	1/24/08	1330	7.60	13.27	0.670	-37.6	5.14		
CS-WB05-LGR-02	1/24/08	0945	7.35	14.97	0.583	-42.2	6.61		
CS-WB05-LGR03A	1/23/08	1130	7.10	13.55	0.500	-43.3	6.30		
CS-WB05-LGR03B	1/21/08	0945	6.97	14.47	0.507	-19.3	5.48		
CS-WB05-LGR04A	1/23/08	1045	7.25	14.27	0.462	-11.7	6.53		
CS-WB05-LGR04B	1/23/08	0945	6.93	16.58	0.745	-26.0	5.76		
CS-WB05-BS-01	1/23/08	1420	6.97	16.35	0.446	-46.7	7.84		
CS-WB05-CC-01	1/23/08	1305	6.95	21.47	0.586	-65.9	5.23		
CS-WB05-CC-02	1/23/08	1045	6.73	21.36	0.584	-90.5	4.67		
CS-WB06-UGR-01	1/29/08	1425	7.06	22.60	0.994	-23.3	3.68		
CS-WB06-LGR-01	1/29/08	1330	7.27	21.57	0.677	-25.1	3.72		
CS-WB06-LGR-02	1/29/08	1130	7.14	20.99	0.539	-25.4	3.65		
CS-WB06-LGR03A	1/29/08	1025	7.06	20.83	0.548	-14.1	3.96		
CS-WB06-LGR03B	1/21/08	1415	7.31	18.87	0.501	34.2	6.50		
CS-WB06-LGR-04	1/29/08	0945	7.23	19.92	0.510	-4.6	6.87		
CS-WB07-UGR-01	1/28/08	1400	dry →						
CS-WB07-LGR-01	1/28/08	1330	7.27	18.41	0.759	-22.9	4.61		
CS-WB07-LGR-02	1/28/08	1100	7.48	18.05	0.535	-29.0	5.07		
CS-WB07-LGR03A	1/28/08	1020	7.13	18.00	0.499	-22.0	5.46		
CS-WB07-LGR03B	1/21/08	1130	7.15	17.90	0.478	-43.7	5.83		
CS-WB07-LGR-04	1/28/08	0945	7.11	18.21	0.483	-4.6	6.49		
CS-WB08-UGR-01	1/30/08	1200	dry →						
CS-WB08-LGR-01	1/30/08	1115	7.34	16.10	0.667	-27.4	4.86		
CS-WB08-LGR-02	1/30/08	1030	7.31	15.81	0.638	-18.4	4.99		
CS-WB08-LGR03A	1/30/08	1000	7.25	15.94	0.472	-4.4	5.81		
CS-WB08-LGR03B	1/21/08	1530	7.15	19.47	0.503	29.7	4.96		
CS-WB08-LGR-04	1/30/08	0900	7.04	18.66	0.737	11.2	6.03		
CS-MW1-LGR	1/21/08	1030	7.16	20.61	0.457	-7.7	3.27		
B3-MW01	1/21/08	1145	6.80	17.57	2.341	-125.5	1.53	→ DNA sample collected 1/21/08	1330
CS-D	1/21/08	1100	7.16	17.14	0.446	-15.5	3.44		
CS-MW16-LGR	1/21/08	0910	7.23	19.23	0.477	-3.3	2.44		
CS-MW16-CC	1/21/08	0945	7.35	19.08	0.531	-4.5	2.15		

Bioreactor Monitoring

Personnel: *S. Elliott + K. Rice*

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: <i>1/31/08</i>		Time: <i>0615</i>								<i>2/1/08 1000</i>
B3-T1-1	12.9	<i>10.70</i>	<i>6.32</i>	<i>21.70</i>	<i>0.782</i>	<i>-154.4</i>	<i>0.48</i>	<i>X</i>	<i>11.40</i>	
B3-T1-2	12.4	<i>10.32</i>	<i>6.35</i>	<i>21.7</i>	<i>0.812</i>	<i>-214.1</i>	<i>0.42</i>		<i>11.03</i>	
B3-T1-3	12.85	<i>9.83</i>	<i>6.39</i>	<i>21.05</i>	<i>0.662</i>	<i>-145.2</i>	<i>0.35</i>		<i>10.65</i>	
B3-T2-1	9.67									
B3-T2-2	10.01									
B3-T3-1	9.96									
B3-T3-2	7.4									
B3-T4-1	6.32									
B3-T5-1	9.33									
B3-T5-2	7.98									
B3-T6-1	11.45									
B3-T6-2	12.34									
B3-UIC										

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday	Tuesday	Wednesday	Thursday	Friday
Date/Time:					
Rate (gpm) / Cumulative Total (gal)					
T-1					
T-2					
T-3					
T-4					
T-5					
T-6					
B-3 (Total)					
CS-MW16-LGR					
CS-MW16-CC					
Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2) = *Note: if bag filter pressure drop is > or = 20 psi change filter.					
	PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =

Notes