CSSA B-3 BIOREACTOR OPERATIONS
ANNUAL PERFORMANCE STATUS REPORT
(QUARTER 9 – QUARTER 12, MAY 2009 – APRIL 2010)

AUGUST 10, 2010

This status report summarizes the operation of a bioreactor at Solid Waste Management Unit (SWMU) B-3 from May 2009 through April 2010, comprising the third year of bioreactor operations and monitoring since system start-up. This status report includes descriptions of current conditions, field observations, analytical results, and an anticipated schedule of activities for the next reporting period. Analytical results from monthly and quarterly regulatory and performance sampling through April 2010 are attached for reference. Parsons personnel working on this project during the reporting period include Ken Rice, Samantha Elliott, Eric Tennyson, Adrien Lindley, Julie Bouch, Michael Zugelder, Scott Pearson, Edward Galbavy, William Martin, and Justin Kirk.

Executive Summary

Site conditions were mixed through the year. Drought conditions dominated the first half of the year (~ 10 inches of precipitation from May through September) followed by wet and moderate conditions during the second half of the year (~25 inches of precipitation from October through April). In all, the Post reported total of 35.05 inches of precipitation for the year. Injection of extracted groundwater continued through the year with few interruptions. Minor interruptions include: winterizing, system maintenance, reaching automatic cut-off levels in the wells and/or storage tank, and reaching the high water level automatic cut-off level in trench 1. The injection of extracted groundwater was suspended between September 14 and October 6, 2009 to accommodate a water tracer study (16 CC started pumping on 10/6). During the year, approximately 8,413,142 gallons of groundwater extracted from CS-MW16-LGR, CS-MW16-CC, and B3-EXW01 were injected into bioreactor trenches 1 and 2, for a total of 23,251,104 gallons since the start of normal operations. During quarter 12, a total of 1,046,575 gallons of extracted groundwater from wells CS-MW16-LGR, CS-MW16-CC, and B3-EXW01 were injected into the bioreactor. The majority of extracted groundwater, ~747,500 gallons, was from CS-MW16-CC, while ~194,000 gallons was extracted from CS-MW16-LGR, and 105,000 gallons were extracted from B3-EXW01.

In addition to the water volumes listed above, approximately 17,661,293 gallons of ground water was added to trench 6 during the reporting period as part of the Tracer Study. This water came from future drinking water well CS-12, which is located approximately 3500 ft northwest of the Bioreactor. The water was added between September 15, 2009 and February 12, 2010, and contained no VOCs. More details on the Tracer Study can be found in the Final Flood Test Assessment Report due out in August 2010. Data from monitoring efforts indicate that the B-3 bioreactor has continued to maintain appropriate geochemical conditions for effective anaerobic dechlorination of chlorinated aliphatic hydrocarbons (CAHs). Geochemical parameters indicating optimal conditions include the following:

- Concentrations of dissolved oxygen (DO) are generally less than 0.5 milligrams per liter (mg/L) and oxidation-reduction potential (ORP) values are less than -100 millivolts (mV), indicating an anaerobic environment conductive to microbial dechlorination of CAHs within the trenches;
- Production of methane indicating that fermentation is occurring; and

- Hydrogen concentrations are greater than 1.0 nanomoles per liter (nmol/L), indicating that there is sufficient electron donor present to stimulate anaerobic dechlorination of CAHs.

Analytical results for samples collected in trench 1 sumps provide evidence that biotic and abiotic dechlorination of trichloroethene (TCE) is occurring. The consistent presence of the end product ethene provides evidence that the biotic reductive dechlorination process appears to be the major pathway for degradation of CAHs within trench 1. Additionally, two other degradation mechanisms, both biotic and abiotic, appear to be occurring within trench 1.

It appears that biotic anaerobic oxidation of CAHs to carbon dioxide may be occurring with Mn (IV) as the terminal electron acceptor. This degradation pathway reaction results in the production of the reduced form of manganese [Mn (II)]. The detections of high concentrations of Mn(II) in trench 1 may be the result of this biotic process.

Evidence for the existence of an abiotic reductive dechlorination is indicated by the presence of reduced iron [Fe(II)] and trans-DCE in trench 1. Field sampling analyses (Noblis) indicated positive results for hydrogen sulfide and sulfate-reducing bacteria. Hydrogen sulfide likely reduces iron [III] in soil minerals to iron [II], which is then available to facilitate reductive dechlorination of CAHs. Although evidence suggests this degradation pathway exists, it may not be a significant contributor to the overall degradation of contaminants.

Summary of Bioreactor Operation

Monthly and quarterly analytical results throughout the year at the bioreactor sumps indicate that SWMU B-3 trenches contain a range of *cis*-DCE levels (non-detect – 120 µg/L) as well as concentrations of other dechlorination products (e.g., VC, ethene). In addition, minor amounts of toluene, and other fuel related compounds were identified during monitoring of bioreactor sumps from trenches 1 through 6 during the year. A summary of the analytical data collected for the reporting period (year 3) is included in Table 1. A summary of monthly and quarterly monitoring results from the bioreactor trench sumps are attached, analytical results of the surrounding SWMU B-3 multi-port monitoring wells (MPMW or Westbay®) and monitoring wells are also attached.

Results of VOC analyses indicate that groundwater from the uppermost saturated zone (LGR-03B) of Westbay® wells CS-WB05 and CS-WB07 contain less than 100 micrograms per liter (µg/L) of PCE and TCE, while *cis*-DCE was detected in concentrations less than 100 µg/L in CS-WB07 and greater than 100 µg/L in CS-WB05. Wells CS-WB06 and CS-WB08 both contain greater than 100 µg/L of PCE, TCE, and *cis*-DCE. Groundwater from CS-MW16-LGR and B3-EWX01 contain greater than 100 µg/L of PCE, TCE, and *cis*-DCE while CS-MW16-CC contains less than 100 µg/L of PCE, TCE, and *cis*-DCE. Volatile organic carbon (VOC) analytical results from bioreactor trench sumps samples indicate a decrease in contaminant mass (total molar concentration) in all trench 1 and 2 sumps through the year. Analytical results from groundwater samples collected from sumps T3-1, T3-2, T4-1, T5-2, T6-1, and T6-2, show no significant concentrations of VOCs as all results were below the MCLs for PCE, TCE, *cis*- and *trans*-DCE, and VC (5, 5, 70, 100, and 2 µg/L, respectively) and total molar concentrations were less than 20 nanomoles per liter (nM/L). Analytical results of groundwater collected from the T5-1 sump, did indicate VC concentrations that exceeded the MCL on September 16, 2009 (3.2 µg/L), however, in subsequent samples, concentrations of all VOCs including VC were below the MCLs. Over the bioreactor operational period, contaminant mass appears stable or decreasing.

Water quality field measurements from the bioreactor trench 1 sumps indicate that DO has fallen slightly from the previous quarter to an average of 0.61 mg/L, ORP has fallen since the previous quarter, averaging -104.6 mV, pH ~ 6.94, temperatures range from ~10 ^{o}C to ~24 ^{o}C, and specific conductivity ranges from ~0.361 to ~0.965 millisiemens per centimeter (mS/cm). Average annual

values for DO, pH, ORP, and specific conductivity in trench 1 during the third year of bioreactor operations include: 0.56 mg/L, 6.59, -121.12 mV, and 0.681 mS/cm, respectively. Other observations regarding the data collected during this reporting period are listed below.

Water quality field measurements from trench 2 during the twelfth quarter include average DO, pH, and ORP of ~0.53 mg/L, ~6.54, and ~ -114.35 mV, respectively; temperature ranges from 12.2 ^{o}C to 31.75 ^{o}C; and specific conductivity ranges from 0.309 to 1.804 mS/cm.

During the 12th quarter of bioreactor operation, 7.93 inches of precipitation were measured at the weather station proximal to the bioreactor site for a total of 35.05 inches for the year. Average water thickness in Trench 1 during the quarter was approximately 6.48 feet. Average water thickness in Trench 2 during the quarter was approximately 2.24 feet. Average water thicknesses in trenches 1 and 2 for the year were 5.49 and 2.05 feet, respectively.

Attached are graphs including: cumulative total volume of recovered groundwater from CS-MW16-LGR, CS-MW16-CC, and B3-EXW01 applied into trenches 1 an 2 through the O&M period, B-3 Trench 1 average water thickness with rainfall data and water applied daily to trench 1, VOC concentration summaries for extraction wells, storage tank, trench 1 and 2 sumps, and in the defined uppermost saturated zones (zone LGR-03B) in the surrounding multi-port monitoring wells, cumulative precipitation, as well as water level elevations in the defined uppermost saturated zone (zone LGR-03B) of the B-3 multi-port monitoring wells with rainfall data.

Quarter 12 - Analytical Data Observations

1. Arsenic (As) was detected in concentrations exceeding the MCL (10 µg/L) in one sump sample, T2-2 (17.1 µg/L) and one Westbay well zone, CS-WB05-LGR04B (54.1 µg/L) during quarter 12. Manganese (Mn) was reported in bioreactor trench water samples at concentrations ranging from 107 to 958 µg/L (MCL is 50 µg/L). An elevated level of Mn was reported in CS-B3-MW01 (149 µg/L) during this quarter. Elevated levels of Mn were reported in CS-WB07-UGR01 (1,530 µg/L) and CS-WB05-LGR-04B (56 µg/L), and elevated levels of As were reported in CS-WB05-LGR04B (54.1 µg/L); all other MPMW zones reported Mn and As levels below the MCL. The elevated levels are likely due to changing pH conditions of the groundwater and the reduction of naturally occurring As and Mn within the limestone media to more soluble forms. Additionally, the biotic anaerobic oxidation pathway of CAHs may also be contributing to the elevated levels of Mn within the treatment system.
2. Lead levels in groundwater collected in January, 2010 from CS-B3-EXW01 reached 30.6 µg/L, exceeding the drinking water Action Level (15 µg/L), but groundwater sampled in quarter 12 indicated lead was not detected. Lead monitoring in groundwater will continue as bioreactor operations progress.
3. DO and ORP values were more favorable for the reduction of CAHs compared with the previous quarter, and it is likely that geochemical conditions will continue to improve as normal bioreactor operations continue.
4. The volatile organic compound summary for the trenches indicates a transition from the end-product (VC, DCE isomer, and ethene) dominated chemical composition in water before the onset of the flood test, to a composition that includes a parent (PCE or TCE) component. This indicates the reduction of contaminants along the degradation pathway toward the end product ethene may have been interrupted during the flood test or the increase in molar ratios of parent compounds is due to the mobilization of contaminant mass from around trench 6. Total molar concentrations in sumps in

trenches 1 and 2 decreased through the year. The trans-DCE isomer in trenches 1 and 2 is theorized to be the result of an abiotic reductive dechlorination pathway.

5. Reductive dechlorination of CAHs by microbial activity other than DHC appears to be occurring as DHC bacterial counts have been negligible.
6. Saturated conditions within the bioreactor are maintained through the quarter with average water thicknesses of approximately 6.48 and 2.24 feet in trenches 1 and 2, respectively, and annually with average water thicknesses of 5.49 and 2.05 feet respectively.

Recommendations

Recommendation for further treatability study actions include:

- Continue monitoring bioreactor and surrounding wells for UIC Permit and Performance parameters.
- Continue investigation of degradation pathways through microbial and isotope analysis.
- Pump Trench 1 water into Trench 6 to seed that area with chlorine reducing bacteria.
- Resume pumping of water into Trench 6.
- Investigate other potential extraction well installation area(s).

Anticipated Schedule for Next Period (May, 2010 – April, 2011):

- Continue monitoring and maintenance activities for delivery of groundwater to the bioreactor trenches.
- Conduct monthly and quarterly monitoring events for the bioreactor system.
- Continue UIC monthly monitoring with semi-annual reporting due December 2010.
- Complete construction, development and surveying of 9 Upper Glen Rose monitoring wells around the bioreactor. Data from these wells can then be combined with Westbay UGR data and sump data to provide a more complete picture of shallow groundwater conditions around the Bioreactor.
- Complete the construction of a fourth extraction well (XW-02) to deliver groundwater to the bioreactor.
- Begin injecting extracted groundwater into trench 6 in lieu of trench 2 injections.

Specific Data Observation Notes for Attachments

- Analytical results from the B-3 Trench Sump (trenches 1 through 6) samples, shown in Table 12.1.2, present data from the third year of bioreactor operations as well as quarter 12 sampling events.
- Table 12.1.1 indicates an average water thickness of 6.48 feet was maintained during the quarter and an average water thickness of 5.49 feet was achieved during the year in trench 1. Average water thicknesses in trench 2 were 2.24 and 2.05 feet for the quarter and annually, respectively.

- Table 12.1.2 indicates that VC was present at variable concentrations in trench sumps, ranging from non-detect to 110 µg/L during the year and non-detect to 18 µg /L during the quarter. Ethene was observed in concentrations ranging from ND to 17 µg/L in trench 1 and non-detect to 7.7 µg/L in trench 2 through the year. During Quarter 12, vinyl chloride levels dropped to the lower end of their range and all ethene results were non-detects.
- Table 12.1.3 indicates that Mn(II) and Fe(II) were present at concentrations consistent with alternative degradation pathways. Additionally, Table 12.1.3 provides evidence of the biotic anaerobic degradation pathway with the elevated concentrations of Mn and CO_2.
- Table 12.3.3 indicates that VC was present (14 µg/L) in the sample taken in Quarter 12 from monitoring well CS-B3-MW01, which remains consistent with samples collected through the previous 35 months. Additionally, table 12.3.3 indicates that VC concentrations in groundwater samples collected from the new extraction well (B3-EXW01) have decreased from 15 µg/L (July, 2009) to 0.74 µg/L in April, and lead has decreased from 30.6 µg/L in January to non-detect in the last quarter.
- Table 12.4.4 indicates that the *Dehalococcoides* (DHC) bacteria populations are very low in the trench sumps.
- The changes in molar fraction and total molar concentrations, shown in graphs for trench 1 and 2 sumps, indicate a continued reduction in contaminant mass to end products VC and ethene. Perturbations in both the mole fractions and total molar concentrations in trench sumps occur during the onset of flood test operations and appear to stabilize towards the end of the O&M period.
- Figure 12.2.5 shows that the water levels in Westbay wells are significantly influenced by precipitation, while pumping at CS-MW16-LGR and CS-B3-EXW01 shows strong influence in the deeper LGR zones. Pumping at CS-MW16-CC appears to have no influence on UGR or LGR zones.
- Table 12.1.3 suggests manganese levels in the sumps remained consistently above the MCL during the tracer/flood study while manganese levels in the UGR zones of the Westbay wells (Table 12.2.3) spiked higher during flood and gradually decreased to below MCL levels after the tracer/flood was over. Manganese levels in the deeper Westbay zones were consistently below MCL throughout the reporting period.
- Arsenic is consistently above the MCL in Sump T2-2. During the Tracer/Flood study Arsenic periodically spiked above the MCL in Sumps T1-1, T1-2, T1-3, and T2-2. Of the Westbay zones sampled, only WB05 LGR04B has shown arsenic levels above MCL. This suggests a vertical connection between the sumps and the WB05 LGR04 zone and that this connection may have been enhanced during the tracer/flood.

Analytical Summary Data

Table 1 Summary of Analysis Presented for Reporting Period

Event	VOCs	TDS	TOC	DOC	MEE & CO_2	SO_3^-	Chloride, Sulfate	Alkalinity	N, NO_3 & NO_2	Fe^{2+}	Mn	Metals	H^+	DHC
Monthly Sampling[a] (25)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Monthly Sampling[a] (26)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Quarterly Sampling[b] (9)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Monthly Sampling[a] (28)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Monthly Sampling[a] (29)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Quarterly Sampling[b] (10)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Monthly Sampling[a] (31)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Monthly Sampling[a] (32)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Quarterly Sampling[b] (11)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Monthly Sampling[a] (34)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Monthly Sampling[a] (35)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Quarterly Sampling[b] (12)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

a - Monthly sampling includes samples from B3-trench sumps, the uppermost saturated intervals of the multi-port wells (Zone 03B) and B3-UIC samples.
b - Quarterly sampling includes samples from B3-trench sumps, Monitoring Wells, and Multi-port (Westbay) wells and monthly samples.

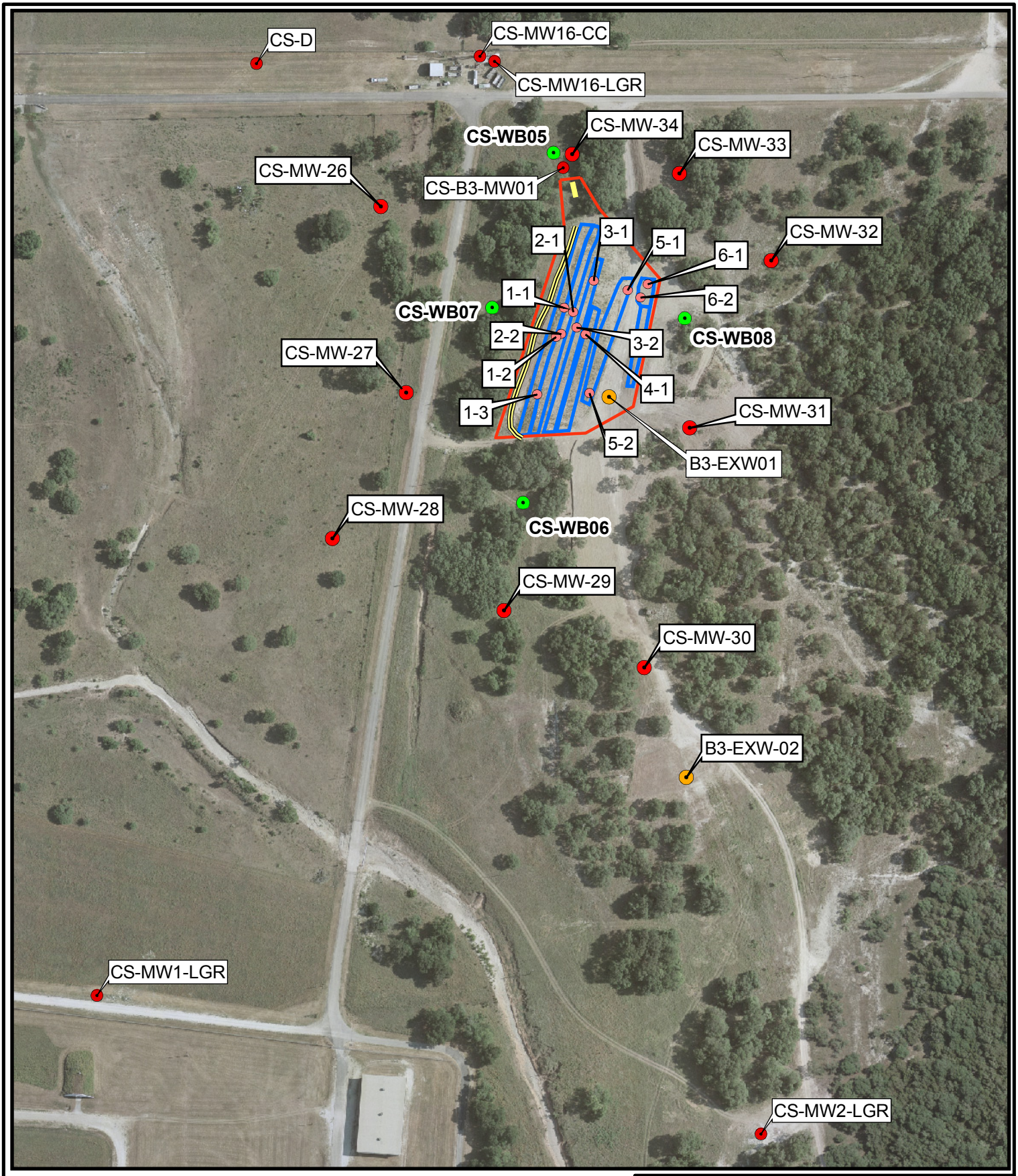

Figure 1

B-3 Bioreactor System
Camp Stanley Storage Activity

PARSONS

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Key for table/figure numbering

First digit (Sample Event)	0 =	Baseline
	1 =	Quarter 1 (or baseline through quarter 1)
	2 =	Quarter 2
	3 =	Quarter 3
	4 =	Quarter 4
	5 =	Quarter 5
	6 =	Quarter 6
	7 =	Quarter 7
	8 =	Quarter 8
	9 =	Quarter 9
	10 =	Quarter 10
	11 =	Quarter 11
	12 =	Quarter 12
Second digit (Well/Sump Sampled)	1 =	Trench Sumps
	2 =	Westbay Wells
	3 =	Monitoring Wells
	4 =	Combination of Wells and Sumps
	5 =	Injection System
	6 =	Extraction Wells
	7 =	UIC (Storage Tank)
	8 =	Post-wide
Third digit (Sampled for)	1 =	Field Parameters
	2 =	VOC Analytical Data
	3 =	Other Analytical Data
	4 =	Microbial Data
	5 =	Applied Water Volume
	6 =	System Physical Parameters
	7 =	Precipitation
Third digit qualifier (Westbay Identifier)	a =	CS-WB05
	b =	CS-WB06
	c =	CS-WB07
	d =	CS-WB08

Table 0 **COC MCLs**

COC	MCL (mg/L)	MCL (µg/L)	Type
Arsenic	0.01	10	Metal
Manganese	0.05	50	
cis -Dichloroethene	0.07	70	Organic Compound
trans -Dichloroethene	0.1	100	
Trichloroethene	0.005	5	
Tetrachloroethene	0.005	5	
Vinyl Chloride	0.002	2	

Tables

Table 12.1.1 SWMU B-3 Bioreactor Trenches - Field Measurement Data - May 2009 - April 2010

TRENCH 1 Sump 1-1								
Sump Depth:		12.9 *feet BTOC*						
Sample Date	**Sample Time**	**Sump H_20 Level**	**pH**	**Temperature**	**Specific Conductivity**	**Dissolved Oxygen**	**ORP**	**Sump H_20 Thickness**
		(feet BTOC)		*(°C)*	*(m-mho/cm)*	*(mg/L)*	*(eV)*	*(feet)*
5/1/2009	1400	10.68	6.27	24.12	0.58	0.47	-201.0	2.22
5/8/2009	1000	9.61	6.45	24.92	0.557	0.47	-134.3	3.29
5/13/2009	1015	9.00	6.34	24.85	0.749	0.53	-134.7	3.90
5/19/2009	908	8.84	6.53	24.81	1.119	0.26	-181.5	4.06
5/28/2009	1330	8.95	6.36	24.70	0.841	0.40	-141.7	3.95
6/5/2009	1041	9.65	6.26	24.99	0.773	0.39	-159.3	3.25
6/12/2009	1237	9.32	6.35	25.31	0.547	0.51	-137.7	3.58
6/17/2009	845	10.03	6.34	25.57	0.92	0.40	-153.3	2.87
6/26/2009	930	9.92	6.48	26.21	0.849	0.70	-178.9	2.98
6/30/2009	911	10.16	6.53	26.30	0.833	0.45	-161.5	2.74
7/7/2009	915	11.28	6.40	26.37	0.559	0.58	-144.1	1.62
7/16/2009	830	8.88	6.33	26.50	0.87	0.51	-145.2	4.02
7/21/2009	830	8.80	6.64	26.24	0.871	0.47	-194.0	4.10
7/30/2009	755	8.84	6.61	26.11	0.739	0.54	-194.1	4.06
8/6/2009	839	9.28	6.39	25.03	0.813	0.88	-167.9	3.62
8/11/2009	1030	9.44	6.54	24.96	0.294	0.54	-191.0	3.46
8/18/2009	840	9.25						3.65
8/19/2009		8.78						4.12
8/27/2009	1200	9.23						3.67
9/4/2009	957	9.26	6.35	25.52	0.818	0.48	-174.5	3.64
9/14/2009	1020	11.67						1.23
9/15/2009	1100	11.11						1.79
9/16/2009	1415	10.51	6.24	26.63	0.744	0.52	-143.2	2.39
9/17/2009	1045	10.24						2.66
9/18/2009	1100	10.02						2.88
9/21/2009	1100	9.65						3.25
9/22/2009	900	9.61						3.29
9/23/2009	1330	9.53						3.37
9/24/2009	930	9.53						3.37
9/25/2009	1400	9.48						3.42
9/28/2009	1015	9.52						3.38
9/29/2009	1030	9.49						3.41
9/30/2009	900	9.46	6.38	23.62	0.980	0.44	-182.8	3.44
10/1/2009	1345	9.43						3.47
10/2/2009	1000	9.43						3.47
10/5/2009	1030	7.08						5.82
10/6/2009	920	7.57						5.33
10/7/2009	840	7.15	6.62	30.82	1.238	0.47	2.6	5.75
10/8/2009	1100	6.62						6.28
10/9/2009	1150	6.20						6.70
10/12/2009	1140	5.52						7.38
10/13/2009	1040	4.92						7.98
10/14/2009	1020	4.21						8.69
10/15/2009	1345	4.58						8.32
10/16/2009	1240	4.47	6.63	25.24	0.708	0.22	-83.7	8.43
10/19/2009	828	5.32	6.89	24.11	0.919	0.51	-189.9	7.58
11/5/2009	935	3.80	7.14	20.77	0.348	2.15	-2.8	9.10
11/11/2009	815	3.04	7.15	20.58	0.668	0.39	-86.6	9.86
11/18/2009	840	3.01	7.00	16.46	0.663	0.18	-67.6	9.89
11/25/2009	1330	3.59	7.16	18.96	0.596	1.11	-48.0	9.31
12/8/2009	1011	3.94	7.14	18.92	0.551	1.21	-46.6	8.96
12/15/2009	905	3.18	6.91	18.76	0.565	0.33	-48.0	9.72
12/23/2009	1104	3.09	7.05	19.23	0.416	0.68	-54.3	9.81
12/31/2009	1024	3.84	7.07	19.04	0.468	1.60	-47.3	9.06
1/7/2010	845	4.51	7.24	19.16	0.36	0.75	-51.3	8.39
1/14/2010	1000	5.19	7.05	18.92	0.6	0.46	-114.9	7.71
1/19/2010	900	3.08	6.82	17.74	0.596	1.24	-89.7	9.82
1/29/2010	1500	3.95	6.92	17.39	0.521	0.53	-103.4	8.95
2/5/2010	1100	2.42	6.75	17.31	0.545	0.75	-114.5	10.48
2/12/2010	1010	1.84	6.55	9.97	0.353	0.90	-80.8	11.06
2/18/2010	1437	4.25	6.69	14.86	0.542	0.99	-86.0	8.65
2/23/2010	930	6.76	6.89	16.09	0.441	1.33	-81.1	6.14
3/4/2010	1445	8.52	6.72	17.65	0.469	0.58	-110.7	4.38
3/12/2010	935	9.30	6.45	18.13	0.437	0.53	-120.0	3.60
3/18/2010	1230	10.15	6.29	18.39	0.519	0.49	-110.8	2.75
3/23/2010	940	6.69	6.42	20.06	0.882	0.39	-107.4	6.21
3/30/2010	1030	5.51	6.46	21.51	0.89	0.59	-134.7	7.39
4/9/2010	1020	8.94	6.53	21.23	0.604	0.41	-145.6	3.96
4/16/2010	1040	8.98	6.44	22.18	0.707	0.38	-148.0	3.92
4/20/2010	930	5.65	6.54	23.06	0.931	0.27	-123.7	7.25
4/30/2010	1020	6.05	6.58	23.08	0.967	0.35	-153.9	6.85

Table 12.1.1 SWMU B-3 Bioreactor Trenches - Field Measurement Data - May 2009 - April 2010

TRENCH 1 Sump 1-2								
Sump Depth:		12.4 *feet BTOC*						
Sample Date	**Sample Time**	**Sump H_20 Level**	**pH**	**Temperature**	**Specific Conductivity**	**Dissolved Oxygen**	**ORP**	**Sump H_20 Thickness**
		(feet BTOC)		*(°C)*	*(m-mho/cm)*	*(mg/L)*	*(eV)*	*(feet)*
5/1/2009	1400	10.54	6.24	23.94	0.652	0.46	-189.3	1.86
5/8/2009	1000	9.31	6.26	24.52	0.742	0.48	-151.6	3.09
5/13/2009	1015	8.80	6.22	24.85	0.875	0.49	-156	3.60
5/19/2009	908	8.73	6.44	24.44	1.216	0.24	-177.5	3.67
5/28/2009	1330	8.68	6.34	23.37	0.906	0.39	-135.2	3.72
6/5/2009	1041	9.33	6.25	24.76	0.826	0.40	-152.5	3.07
6/12/2009	1237	9.05	6.37	24.99	0.524	0.48	-138.2	3.35
6/17/2009	845	9.71	6.39	25.33	0.924	0.22	-153	2.69
6/26/2009	930	9.68	6.45	26.02	0.954	0.68	-169.6	2.72
6/30/2009	911	9.91	6.49	26.29	0.991	0.39	-159	2.49
7/7/2009	915	10.83	6.33	26.12	0.604	0.50	-128.8	1.57
7/16/2009	830	8.62	6.31	25.93	0.916	0.54	-146.5	3.78
7/21/2009	830	8.50	6.53	25.41	0.892	0.27	-181.4	3.90
7/30/2009	755	8.58	6.48	25.63	0.805	0.39	-183.7	3.82
8/6/2009	839	8.95	6.25	23.37	0.894	0.52	-164.7	3.45
8/11/2009	1030	9.07	6.37	24.98	0.325	0.52	-172.6	3.33
8/18/2009	840	8.85						3.55
8/19/2009		8.54						3.86
8/27/2009	1200	8.88						3.52
9/4/2009	957	8.90	6.27	26.83	0.815	0.68	-169.2	3.50
9/14/2009	1020	11.29						1.11
9/15/2009	1100	10.90						1.50
9/16/2009	1430	10.30	6.18	26.95	0.737	0.22	-176	2.10
9/17/2009	1045	10.02						2.38
9/18/2009	1100	9.79						2.61
9/21/2009	1100	9.41						2.99
9/22/2009	900	9.37						3.03
9/23/2009	1330	9.30						3.10
9/24/2009	930	9.28						3.12
9/25/2009	1400	9.24						3.16
9/28/2009	1015	9.26						3.14
9/29/2009	1030	9.25						3.15
9/30/2009	900	9.23	9.23	27.77	0.884	0.33	-171.8	3.17
10/1/2009	1345	9.20						3.20
10/2/2009	1000	9.18						3.22
10/5/2009	1030	6.78						5.62
10/6/2009	920	7.26						5.14
10/7/2009	840	6.87	6.56	29.57	1.504	0.23	-88.7	5.53
10/8/2009	1100	6.36						6.04
10/9/2009	1150	5.94						6.46
10/12/2009	1140	5.26						7.14
10/13/2009	1040	4.70						7.70
10/14/2009	1020	4.51						7.89
10/15/2009	1345	4.37						8.03
10/16/2009	1240	4.23	6.48	27.99	0.733	0.18	-115.2	8.17
10/19/2009	828	4.91	6.75	25.82	0.901	0.24	-218.3	7.49
11/5/2009	935	3.58	6.94	21.05	0.448	0.31	-61.4	8.82
11/11/2009	815	2.70	7.03	20.05	0.617	0.24	-87	9.70
11/18/2009	840	2.64	7.07	15.44	0.636	0.57	-60.2	9.76
11/25/2009	1330	3.27	7.06	17.33	0.626	0.47	-61.1	9.13
12/8/2009	1011	3.85	6.62	18.54	0.653	0.69	-100.7	8.55
12/15/2009	905	2.85	6.82	17.33	0.559	0.53	-52	9.55
12/23/2009	1104	2.74	6.76	16.66	0.415	0.49	-63.2	9.66
12/31/2009	1024	3.65	6.53	16.63	0.500	0.52	-82	8.75
1/7/2010	845	4.14	6.59	14.30	0.364	0.71	-54	8.26
1/14/2010	1000	4.95	6.81	17.04	0.611	0.61	-108.6	7.45
1/19/2010	900	4.69	6.48	16.48	0.620	0.65	-91.7	7.71
1/29/2010	1500	3.80	6.55	17.04	0.528	0.84	-129.3	8.60
2/5/2010	1100	2.05	6.63	16.79	0.545	0.63	-101.5	10.35
2/12/2010	1010	1.48	6.50	10.51	0.358	0.85	-78.8	10.92
2/18/2010	1437	3.96	6.41	10.71	0.528	1.05	-78.2	8.44
2/23/2010	930	6.48	6.56	14.23	0.437	0.33	-84.6	5.92
3/4/2010	1445	8.19	6.71	16.41	0.470	0.45	-93.5	4.21
3/12/2010	935	9.03	6.36	17.38	0.440	0.54	-85.8	3.37
3/18/2010	1230	9.87	6.35	17.89	0.520	0.43	-101	2.53
3/23/2010	940	6.29	6.42	18.67	1.112	0.39	-93.9	6.11
3/30/2010	1030	5.13	6.92	21.35	0.820	0.49	-96.1	7.27
4/9/2010	1020	8.55	6.58	20.52	0.746	0.60	-121.6	3.85
4/16/2010	1040	8.51	6.49	21.31	0.843	0.61	-120.2	3.89
4/20/2010	930	5.34	6.52	22.24	1.119	0.31	-113.0	7.06
4/30/2010	1020	5.75	6.58	22.77	1.135	0.32	-120.8	6.65

Table 12.1.1 SWMU B-3 Bioreactor Trenches - Field Measurement Data - May 2009 - April 2010

TRENCH 1 Sump 1-3								
Sump Depth:		12.85 *feet BTOC*						
Sample Date	**Sample Time**	**Sump H_20 Level**	**pH**	**Temperature**	**Specific Conductivity**	**Dissolved Oxygen**	**ORP**	**Sump H_20 Thickness**
		(feet BTOC)		*(°C)*	*(m-mho/cm)*	*(mg/L)*	*(eV)*	*(feet)*
5/1/2009	1400	10.40	6.34	23.80	0.564	0.41	-179.8	2.45
5/8/2009	1000	9.00	6.37	24.72	0.590	0.43	-149.5	3.85
5/13/2009	1015	8.66	6.51	25.19	0.673	0.41	-142.5	4.19
5/19/2009	908	8.61	6.41	25.06	0.951	0.18	-178.4	4.24
5/28/2009	1330	8.54	6.52	24.81	0.758	0.30	-169.4	4.31
6/5/2009	1041	9.10	6.35	25.13	0.718	0.41	-160.0	3.75
6/12/2009	1237	8.84	6.58	25.65	0.524	0.48	-138.2	4.01
6/17/2009	845	9.45	6.34	25.94	0.872	0.18	-145.4	3.40
6/26/2009	930	9.52	6.67	26.41	0.851	0.62	-162.3	3.33
6/30/2009	911	9.69	6.65	26.58	0.837	0.48	-142.5	3.16
7/7/2009	915	10.61	6.46	26.57	0.565	0.51	-121.7	2.24
7/16/2009	830	8.42	6.43	26.46	0.769	0.48	-142.3	4.43
7/21/2009	830	8.30	6.77	26.48	0.738	0.33	-183.5	4.55
7/30/2009	755	8.44	6.58	26.28	0.719	0.44	-185.2	4.41
8/6/2009	839	8.79	6.55	26.14	0.790	0.31	-159.4	4.06
8/11/2009	1030	8.85	6.53	25.33	0.294	0.37	-199.4	4.00
8/18/2009	818	8.65						4.20
8/19/2009		8.46						4.39
8/27/2009	1200	8.56						4.29
9/4/2009	957	8.60	6.42	25.87	0.742	0.66	-184.9	4.25
9/14/2009	1020	11.02						1.83
9/15/2009	1100	10.92						1.93
9/16/2009	1430	10.25	6.23	26.84	0.753	0.25	-180.4	2.60
9/17/2009	1045	9.92						2.93
9/18/2009	1100	9.69						3.16
9/21/2009	1100	9.35						3.50
9/22/2009	900	9.32						3.53
9/23/2009	1330	9.27						3.58
9/24/2009	930	9.25						3.60
9/25/2009	1400	9.21						3.64
9/28/2009	1015	9.25						3.60
9/29/2009	1030	9.24						3.61
9/30/2009	900	9.21	6.30	28.35	1.066	0.34	-143.2	3.64
10/1/2009	1345	9.18						3.67
10/2/2009	1000	9.18						3.67
10/5/2009	1030	6.44						6.41
10/6/2009	920	6.95						5.90
10/7/2009	840	6.63	6.62	29.59	1.436	0.18	-161.0	6.22
10/8/2009	1100	6.23						6.62
10/9/2009	1150	5.47						7.38
10/12/2009	1140	5.03						7.82
10/13/2009	1040	4.61						8.24
10/14/2009	1020	4.27						8.58
10/15/2009	1345	4.03						8.82
10/16/2009	1240	3.88						8.97
10/19/2009	828	4.52	7.14	20.45	0.618	0.20	-243.2	8.33
11/5/2009	935	3.21	7.20	17.93	0.377	0.54	-43.4	9.64
11/11/2009	815	2.33	7.18	19.86	0.593	0.23	-115.1	10.52
11/18/2009	840	2.35	7.14	16.42	0.621	0.61	-70.6	10.50
11/25/2009	1330	2.92	7.05	16.49	0.594	0.48	-88.5	9.93
12/8/2009	1011	3.54	7.03	13.63	0.595	0.67	-53.9	9.31
12/15/2009	905	2.45	7.16	16.43	0.586	2.48	-42.9	10.40
12/23/2009	1104	2.36	6.82	14.64	0.425	0.65	-51.7	10.49
12/31/2009	1024	3.28	6.70	10.48	0.470	0.72	-43.8	9.57
1/7/2010	845	3.75	6.91	13.33	0.348	1.48	-43.7	9.10
1/14/2010	1000	4.80	7.15	19.05	0.642	0.98	-119.1	8.05
1/19/2010	900	2.30	6.75	14.97	0.653	0.84	-127.2	10.55
1/29/2010	1500	3.45	6.76	14.78	0.521	0.58	-125.7	9.40
2/5/2010	1100	1.68	6.72	11.61	0.575	0.79	-103.2	11.17
2/12/2010	1010	1.12	6.58	9.54	0.373	0.73	-80.0	11.73
2/18/2010	1437	3.55	6.48	10.13	0.551	0.91	-72.2	9.30
2/23/2010	930	6.73	6.80	13.48	0.456	1.08	-85.5	6.12
3/4/2010	1445	7.90	6.69	15.26	0.493	0.40	-90.3	4.95
3/12/2010	935	8.78	6.29	16.27	0.476	0.46	-99.3	4.07
3/18/2010	1230	9.52	6.36	16.80	0.590	0.38	-110.1	3.33
3/23/2010	940	6.73	6.45	18.99	0.900	0.40	-109.6	6.12
3/30/2010	1030	4.70	7.26	21.79	0.663	1.89	-94.3	8.15
4/9/2010	1020	8.34	6.96	21.90	0.479	0.59	-119.5	4.51
4/16/2010	1040	8.10	6.62	22.56	0.585	0.67	-127.3	4.75
4/20/2010	930	5.00	6.85	22.41	0.730	0.25	-91.0	7.85
4/30/2010	1020	5.48	6.93	24.07	0.658	0.38	-89.5	7.37

Table 12.1.1 SWMU B-3 Bioreactor Trenches - Field Measurement Data - May 2009 - April 2010

TRENCH 2 Sump 2-1								
Sump Depth:		9.67 *feet BTOC*						
Sample Date	**Sample Time**	**Sump H_20 Level**	**pH**	**Temperature**	**Specific Conductivity**	**Dissolved Oxygen**	**ORP**	**Sump H_20 Thickness**
		(feet BTOC)		*(°C)*	*(m-mho/cm)*	*(mg/L)*	*(eV)*	*(feet)*
5/1/2009	1400	8.58	6.43	24.56	0.550	0.56	-201.0	1.09
5/8/2009	1000	8.6	6.24	25.35	0.584	0.73	-124.7	1.07
5/13/2009	1015	8.64	6.38	25.79	0.707	0.58	-134.2	1.03
5/19/2009	908	8.6	6.58	25.75	1.023	0.61	-134.2	1.07
5/28/2009	1330	8.54	6.38	25.39	0.779	0.47	-110.3	1.13
6/5/2009	1041	8.64	6.28	25.61	0.767	0.45	-141.2	1.03
6/12/2009	1237	8.52	6.38	25.98	0.505	0.55	-121.5	1.15
6/17/2009	845	8.68	6.42	26.54	0.802	0.28	-136.1	0.99
6/26/2009	930	8.63	6.53	26.8	0.772	0.85	-156.5	1.04
6/30/2009	911	8.5	6.47	27.05	0.755	0.39	-139.7	1.17
7/7/2009	915	9.08	6.44	27.07	0.509	0.78	-122.4	0.59
7/16/2009	830	8.52	6.38	27.48	0.882	0.50	-151.4	1.15
7/21/2009	830	8.52	6.68	27.22	0.809	0.28	-167.9	1.15
7/30/2009	755	8.58	6.47	27.54	0.777	0.48	-184.5	1.09
8/6/2009	839	8.71	6.27	27.36	0.837	0.77	-153.3	0.96
8/11/2009	1030	8.64	6.38	26.49	0.309	0.62	-173.2	1.03
8/18/2009	840	8.58						1.09
8/19/2009		8.53						1.14
8/27/2009	1200	8.57						1.10
9/4/2009	957	8.7	6.35	27.07	0.806	0.56	-173.7	0.97
9/14/2009	1020	9.23						0.44
9/15/2009	1100	9.06						0.61
9/16/2009	1430	8.93	6.18	29.94	0.808	0.38	-184.0	0.74
9/17/2009	1045	8.91						0.76
9/18/2009	1100	8.92						0.75
9/21/2009	1100	8.9						0.77
9/22/2009	900	8.9						0.77
9/23/2009	1330	8.97						0.70
9/24/2009	930	8.97						0.70
9/25/2009	1400	8.96						0.71
9/28/2009	1015	9.03						0.64
9/29/2009	1030	9.04						0.63
9/30/2009	900	8.96	6.41	30.85	0.906	0.24	-151.0	0.71
10/1/2009	1345	8.93						0.74
10/2/2009	1000	8.94						0.73
10/5/2009	1030	8.44						1.23
10/6/2009	920	8.67						1.00
10/7/2009	840	8.52	6.67	30.85	1.284	0.31	-2.0	1.15
10/8/2009	1100	8.07						1.60
10/9/2009	1150	7.64						2.03
10/12/2009	1140	6.96						2.71
10/13/2009	1040	6.36						3.31
10/14/2009	1020	6.16						3.51
10/15/2009	1345	6.02						3.65
10/16/2009	1240	5.9	6.71	28.55	0.659	0.24	-121.4	3.77
10/19/2009	828	6.76	6.86	28.89	1.038	0.31	-266.1	2.91
10/30/2009	1600	5.06	7.08	26.6	1.110	0.49	-198.4	4.61
11/5/2009	935	5.2	7.28	25.74	0.539	0.45	-1.0	4.47
11/11/2009	815	4.49	7.08	24.79	0.815	0.66	-80.0	5.18
11/18/2009	840	4.44	6.91	23.05	0.780	0.15	-94.0	5.23
11/25/2009	1330	4.97	6.94	21.84	0.697	0.73	-54.4	4.70
12/8/2009	1011	5.37	7.07	18.99	0.590	0.70	-47.4	4.30
12/15/2009	905	4.62	6.84	17.84	0.569	0.42	-47.9	5.05
12/23/2009	1104	4.53	6.89	17.94	0.420	0.55	-71.7	5.14
12/31/2009	1024	5.25	6.82	16.9	0.451	1.02	-46.3	4.42
1/7/2010	845	5.93	7.06	17.06	0.343	0.70	-59.0	3.74
1/14/2010	1000	6.63	6.94	16.85	0.580	0.46	-110.8	3.04
1/19/2010	900	4.52	6.77	16.38	0.575	0.70	-87.6	5.15
1/29/2010	1500	5.34	6.78	18.08	0.493	0.54	-120.9	4.33
2/5/2010	1100	2.88	6.86	16.41	0.500	0.65	-106.4	6.79
2/12/2010	1010	3.35	6.83	15.24	0.336	0.76	-88.8	6.32
2/18/2010	1437	5.69	6.72	14.15	0.515	0.97	-93.3	3.98
2/23/2010	930	8.22	6.53	14.62	0.439	0.41	-92.4	1.45
3/4/2010	1445	9.48						0.19
3/12/2010	935	9.67						0.00
3/18/2010	1230	9.6						0.07
3/23/2010	940	8.15	6.46	19.55	1.709	1.04	-88.5	1.52
3/30/2010	1030	6.96	6.65	21.09	1.408	0.49	-112.9	2.71
4/9/2010	1020	9.23						0.44
4/16/2010	1040	8.99	6.38	23.14	0.819	0.55	-105.0	0.68
4/20/2010	930	7.11	6.56	23.09	0.919	0.84	-90.2	2.56
4/30/2010	1020	7.5	6.52	24.08	1.039	0.45	-112.5	2.17

Table 12.1.1 SWMU B-3 Bioreactor Trenches - Field Measurement Data - May 2009 - April 2010

TRENCH 2 Sump 2-2								
Sump Depth:		10.01 *feet BTOC*						
Sample Date	**Sample Time**	**Sump H_20 Level**	**pH**	**Temperature**	**Specific Conductivity**	**Dissolved Oxygen**	**ORP**	**Sump H_20 Thickness**
		(feet BTOC)		*(°C)*	*(m-mho/cm)*	*(mg/L)*	*(eV)*	*(feet)*
5/1/2009	1400	9.70						0.31
5/8/2009	1000	9.74						0.27
5/13/2009	1015	9.33	6.42	27.75	1.612	0.44	-152.2	0.68
5/19/2009	908	9.21						0.80
5/28/2009	1330	9.05	6.44	28.97	1.804	0.32	-130.9	0.96
6/5/2009	1041	9.12						0.89
6/12/2009	1237	9.28	6.35	29.4	1.088	0.5	-121.3	0.73
6/17/2009	845	9.32						0.69
6/26/2009	930	9.29	6.51	31.6	1.605	0.59	-139.8	0.72
6/30/2009	911	9.34	6.62	31.28	1.495	0.41	-122.1	0.67
7/7/2009	915	9.50	6.47	31.75	0.977	0.46	-117.7	0.51
7/16/2009	830	9.62						0.39
7/21/2009	830	9.64						0.37
7/30/2009	755	9.61						0.40
8/6/2009	839	8.93	6.22	31.63	1.491	0.45	-123.7	1.08
8/11/2009	1030	8.90	6.35	31.28	0.502	0.55	-131.1	1.11
8/18/2009	840	8.81						1.20
8/19/2009		8.78						1.23
8/27/2009	1200	8.58						1.43
9/4/2009	957	8.65	6.38	30.22	1.100	0.66	-160.1	1.36
9/14/2009	1020	9.30						0.71
9/15/2009	1100	9.41						0.60
9/16/2009	1430	9.31	6.29	30.27	0.762	0.2	-135.0	0.70
9/17/2009	1045	9.20						0.81
9/18/2009	1100	9.10						0.91
9/21/2009	1100	8.92						1.09
9/22/2009	900	8.93						1.08
9/23/2009	1330	8.97						1.04
9/24/2009	930	8.97						1.04
9/25/2009	1400	8.96						1.05
9/28/2009	1015	9.03						0.98
9/29/2009	1030	9.04						0.97
9/30/2009	900	9.03	6.44	30.37	1.218	0.28	-109.4	0.98
10/1/2009	1345	9.03						0.98
10/2/2009	1000	9.03						0.98
10/5/2009	1030	8.42						1.59
10/6/2009	920	8.54						1.47
10/7/2009	840	8.40	6.54	30.65	1.537	0.23	-126.6	1.61
10/8/2009	1100	8.15						1.86
10/9/2009	1150	7.85						2.16
10/12/2009	1140	7.19						2.82
10/13/2009	1040	6.68						3.33
10/14/2009	1020	6.46						3.55
10/15/2009	1345	6.31						3.70
10/16/2009	1240	6.19	6.64	26.25	0.639	0.19	-111.1	3.82
10/19/2009	828	6.85	6.67	25.46	0.807	0.2	-229.4	3.16
10/30/2009	1600	5.38	6.47	23.9	0.911	0.44	-201.5	4.63
11/5/2009	935	5.59	6.53	23.16	0.530	0.45	-46.8	4.42
11/11/2009	815	4.79	6.48	22.7	0.961	0.36	-111.4	5.22
11/18/2009	840	4.78	6.50	21.53	1.208	0.35	-87.2	5.23
11/25/2009	1330	5.33	6.35	21.64	1.123	0.79	-78.3	4.68
12/8/2009	1011	5.20	6.54	19.44	0.832	0.83	-49.6	4.81
12/15/2009	905	4.93	6.39	19.19	0.924	0.45	-69.1	5.08
12/23/2009	1104	4.83	6.42	18.84	0.696	0.65	-83.1	5.18
12/31/2009	1024	5.64	6.34	17.78	0.754	0.75	-61.7	4.37
1/7/2010	845	6.22	6.59	19.16	0.521	1	-54.0	3.79
1/14/2010	1000	6.95	6.56	17.59	0.834	0.54	-110.9	3.06
1/19/2010	900	4.83	6.35	16.58	0.773	0.56	-114.3	5.18
1/29/2010	1500	5.72	6.31	17.18	0.699	0.75	-109.5	4.29
2/5/2010	1100	4.18	6.47	15.89	0.685	0.78	-94.2	5.83
2/12/2010	1010	3.53	6.44	12.2	0.450	0.82	-80.2	6.48
2/18/2010	1437	6.05	6.54	14.46	0.696	1.04	-80.0	3.96
2/23/2010	930	8.27	6.32	14.71	0.671	0.44	-79.6	1.74
3/4/2010	1445	9.35	6.53		0.761	0.58	-99.1	0.66
3/12/2010	935	10.00						0.01
3/18/2010	1230	10.00						0.01
3/23/2010	940	8.50	6.45	17.59	1.188	0.38	-87.7	1.51
3/30/2010	1030	7.23	6.47	8.06	1.179	0.69	-111.5	2.78
4/9/2010	1020	9.34	6.61	19.5	0.796	0.65	-122.9	0.67
4/16/2010	1040	8.95	6.49	20.97	0.873	0.51	-116.3	1.06
4/20/2010	930	7.43	6.46	21.19	1.148	0.3	-113.7	2.58
4/30/2010	1020	7.85	6.51	22.55	1.245	0.42	-124.4	2.16

Table 12.1.1 SWMU B-3 Bioreactor Trenches - Field Measurement Data - May 2009 - April 2010

TRENCH 3 Sump 3-1								
Sump Depth:		9.96 *feet BTOC*						
Sample Date	**Sample Time**	**Sump H_20 Level**	**pH**	**Temperature**	**Specific Conductivity**	**Dissolved Oxygen**	**ORP**	**Sump H_20 Thickness**
		(feet BTOC)		*(°C)*	*(m-mho/cm)*	*(mg/L)*	*(eV)*	*(feet)*
5/1/2009	1400	9.22	6.23	27.31	0.556	0.49	-184.8	0.74
5/8/2009	1000	9.22						0.74
5/13/2009	1015	9.22						0.74
5/19/2009	908	9.16						0.80
5/28/2009	1330	9.20	6.24	29.01	0.897	0.34	-171.1	0.76
6/5/2009	1041	9.20						0.76
6/12/2009	1237	9.20						0.76
6/17/2009	845	9.32						0.64
6/26/2009	930	9.10						0.86
6/30/2009	911	9.21						0.75
7/7/2009	915	9.19						0.77
7/16/2009	830	9.15						0.81
7/21/2009	830	9.12	6.45	34.11	0.924	0.23	-172.7	0.84
7/30/2009	755	9.08						0.88
8/6/2009	839	9.08						0.88
8/11//09	1030	9.08						0.88
8/18/2009	840	9.05						0.91
8/19/2009		9.06						0.90
8/27/2009	1200	9.09						0.87
9/4/2009	957	9.07						0.89
9/14/2009	1020	9.05						0.91
9/15/2009	1100	9.09						0.87
9/16/2009	1430	8.82	6.22	34.09	0.608	0.19	-116.5	1.14
9/17/2009	1045	8.68						1.28
9/18/2009	1100	8.55						1.41
9/21/2009	1100	8.36						1.60
9/22/2009	900	8.36						1.60
9/23/2009	1330	8.37						1.59
9/24/2009	930	8.42						1.54
9/25/2009	1400	8.46						1.50
9/28/2009	1015	8.59						1.37
9/29/2009	1030	8.62						1.34
9/30/2009	900	8.64	6.55	33.15	1.075	0.43	-125.9	1.32
10/1/2009	1345	8.66						1.30
10/2/2009	1000	8.68						1.28
10/5/2009	1030	7.50						2.46
10/6/2009	920	7.77						2.19
10/7/2009	840	7.94	6.74	29.35	0.648	0.15	-92.7	2.02
10/8/2009	1100	7.99						1.97
10/9/2009	1150	6.95						3.01
10/12/2009	1140	7.49						2.47
10/13/2009	1040	7.61						2.35
10/14/2009	1020	7.57						2.39
10/15/2009	1345	7.53						2.43
10/16/2009	1240	7.53	6.73	29.21	0.683	0.23	-108.9	2.43
10/19/2009	828	7.69	6.84	29.18	1.099	0.22	-228.9	2.27
10/30/2009	1600	7.20	6.87	28	1.114	0.25	-202.8	2.76
11/5/2009	935	7.14	7.12	26.84	0.677	0.26	-79.6	2.82
11/11/2009	815	6.86	6.85	26.44	1.021	0.16	-112.0	3.10
11/18/2009	840	6.84	6.89	25.43	1.102	0.08	-101.2	3.12
11/25/2009	1330	6.91	6.84	24.06	0.906	0.49	-55.4	3.05
12/8/2009	1011	6.99	7.00	21.16	0.761	0.45	-54.6	2.97
12/15/2009	905	6.82	6.97	20.45	0.75	0.47	-79.5	3.14
12/23/2009	1104	6.77	7.00	19.44	0.557	0.35	-88.2	3.19
12/31/2009	1024	6.96	6.91	18.37	0.596	0.43	-66.3	3.00
1/7/2010	845	7.08	6.98	17.31	0.422	0.64	-48.8	2.88
1/14/2010	1000	7.15	6.99	17.06	0.688	0.62	-108.9	2.81
1/19/2010	900	6.57	6.88	16.91	0.661	0.84	-95.3	3.39
1/29/2010	1500	6.55		17.05	0.521	0.55	-103.0	3.41
2/5/2010	1100	6.01	6.81	16.71	0.523	0.69	-94.2	3.95
2/12/2010	1010	5.90	6.91	17.49	0.364	0.88	-93.4	4.06
2/18/2010	1437	8.60	6.80	17.66	0.558	1.53	-85.3	1.36
2/23/2010	930	9.12						0.84
3/4/2010	1445	9.18						0.78
3/12/2010	935	9.18						0.78
3/18/2010	1230	9.18						0.78
3/23/2010	940	9.12						0.84
3/30/2010	1030	9.17						0.79
4/9/2010	1020	9.19						0.77
4/16/2010	1040	8.54						1.42
4/20/2010	930	8.96	6.44	21.19	1.05	0.54	-91.1	1.00
4/30/2010	1020	9.19						0.77

Table 12.1.1 SWMU B-3 Bioreactor Trenches - Field Measurement Data - May 2009 - April 2010

TRENCH 3 Sump 3-2								
Sump Depth:		7.4 *feet BTOC*						
Sample Date	**Sample Time**	**Sump H_20 Level**	**pH**	**Temperature**	**Specific Conductivity**	**Dissolved Oxygen**	**ORP**	**Sump H_20 Thickness**
		(feet BTOC)		*(°C)*	*(m-mho/cm)*	*(mg/L)*	*(eV)*	*(feet)*
5/1/2009	1400	7.40						0.00
5/8/2009	1000	7.40						0.00
5/13/2009	1015	7.40						0.00
5/19/2009	908	7.40						0.00
5/28/2009	1330	7.40						0.00
6/5/2009	1041	7.40						0.00
6/12/2009	1237	7.40						0.00
6/17/2009	845	7.40						0.00
6/29/2009	930	7.40						0.00
6/30/2009	911	7.40						0.00
7/7/2009	915	7.40						0.00
7/16/2009	830	7.40						0.00
7/21/2009	830	7.40						0.00
7/30/2009	755	7.40						0.00
8/6/2009	839	7.40						0.00
8/11/2009	1030	7.40						0.00
8/18/2009	840	7.40						0.00
8/19/2009		7.40						0.00
8/27/2009	1200	7.40						0.00
9/4/2009	957	7.40						0.00
9/14/2009	1020	7.40						0.00
9/15/2009	1100	7.40						0.00
9/16/2009	1430	7.40						0.00
9/17/2009	1045	7.40						0.00
9/18/2009	1100	7.40						0.00
9/21/2009	1100	7.40						0.00
9/22/2009	900	7.40						0.00
9/23/2009	1330	7.40						0.00
9/24/2009	930	7.40						0.00
9/25/2009	1400	7.40						0.00
9/28/2009	1015	7.40						0.00
9/29/2009	1030	7.40						0.00
9/30/2009	900	7.40						0.00
10/1/2009	1345	7.40						0.00
10/2/2009	1000	7.40						0.00
10/5/2009	1030	7.03						0.37
10/6/2009	920	7.07						0.33
10/7/2009	840	7.32						0.08
10/8/2009	1100	7.40						0.00
10/9/2009	1150	7.40						0.00
10/12/2009	1140	7.40						0.00
10/13/2009	1040	7.40						0.00
10/14/2009	1020	7.40						0.00
10/15/2009	1345	7.40						0.00
10/16/2009	1240	7.40						0.00
10/19/2009	828	7.40						0.00
10/30/2009	1600	7.09						0.31
11/5/2009	935	6.95	7.1	22.1	0.437	0.72	-18.2	0.45
11/11/2009	815	6.78	7.06	22.37	0.714	0.56	-83.3	0.62
11/18/2009	840	6.78	7.12	21.74	0.744	0.2	-65.4	0.62
11/25/2009	1330	6.77	7.02	20.13	0.651	0.6	-57	0.63
12/8/2009	1011	6.71	6.88	16.27	0.542	1.14	-57.3	0.69
12/15/2009	905	6.62	6.92	16.1	0.57	1.03	-54.6	0.78
12/23/2009	1104	6.62	6.93	16.52	0.426	0.73	-49.5	0.78
12/31/2009	1024	6.80						0.60
1/7/2010	845	6.98						0.42
1/14/2010	1000	7.03						0.37
1/19/2010	900	6.62	6.85	15.38	0.613	1.71	-85.7	0.78
1/29/2010	1500	6.49		17.87	0.541	0.98	-100.1	0.91
2/5/2010	1100	5.89	6.95	16.11	0.51	1.05	-97.3	1.51
2/12/2010	1010	5.82	6.98	15.83	0.341	1.34	-88.1	1.58
2/18/2010	1437	7.24						0.16
2/23/2010	930	7.28						0.12
3/4/2010	1445	7.31						0.09
3/12/2010	935	7.33						0.07
3/18/2010	1230	7.39						0.01
3/23/2010	940	7.35						0.05
3/30/2010	1030	7.40						0.00
4/9/2010	1020	7.40						0.00
4/16/2010	1040	7.40						0.00
4/20/2010	930	7.40						0.00
4/30/2010	1020	7.40						0.00

Table 12.1.1 SWMU B-3 Bioreactor Trenches - Field Measurement Data - May 2009 - April 2010

TRENCH 4 Sump 4-1								
Sump Depth:		6.32 *feet BTOC*						
Sample Date	**Sample Time**	**Sump H_20 Level**	**pH**	**Temperature**	**Specific Conductivity**	**Dissolved Oxygen**	**ORP**	**Sump H_20 Thickness**
		(feet BTOC)		*(°C)*	*(m-mho/cm)*	*(mg/L)*	*(eV)*	*(feet)*
5/1/2009	1400	6.32						0.00
5/8/2009	1000	6.32						0.00
5/13/2009	1015	6.32						0.00
5/19/2009	908	6.32						0.00
5/28/2009	1330	6.32						0.00
6/5/2009	1041	6.32						0.00
6/12/2009	1237	6.32						0.00
6/17/2009	845	6.32						0.00
6/26/2009	930	6.32						0.00
6/30/2009	911	6.32						0.00
7/7/2009	915	6.32						0.00
7/16/2009	830	6.32						0.00
7/21/2009	830	6.32						0.00
7/30/2009	755	6.32						0.00
8/6/2009	839	6.32						0.00
8/11/2009	1030	6.32						0.00
8/18/2009	840	6.32						0.00
8/19/2009		6.32						0.00
8/27/2009	1200	6.32						0.00
9/4/2009	957	6.32						0.00
9/14/2009	1020	6.22						0.10
9/15/2009	1100	6.24						0.08
9/16/2009	1430	6.32						0.00
9/17/2009	1045	6.32						0.00
9/18/2009	1100	6.32						0.00
9/21/2009	1100	6.32						0.00
9/22/2009	900	6.32						0.00
9/23/2009	1330	6.32						0.00
9/24/2009	930	6.32						0.00
9/25/2009	1400	6.32						0.00
9/28/2009	1015	6.32						0.00
9/29/2009	1030	6.32						0.00
9/30/2009	900	6.32						0.00
10/1/2009	1345	6.32						0.00
10/2/2009	1100	6.32						0.00
10/5/2009	1030	5.93						0.39
10/6/2009	920	6.12						0.20
10/7/2009	840	6.19						0.13
10/8/2009	1100	6.22						0.10
10/9/2009	1150	5.72						0.60
10/12/2009	1140	6.05						0.27
10/13/2009	1040	6.01						0.31
10/14/2009	1020	5.95						0.37
10/15/2009	1345	5.91						0.41
10/16/2009	1240	5.94						0.38
10/19/2009	828	6.12						0.20
10/30/2009	1600	5.65	6.84	24.53	0.762	0.72	-193.5	0.67
11/5/2009	935	5.52	7.19	24.94	0.657	2.44	-10.8	0.80
11/11/2009	815	5.41	7.12	21.19	0.63	0.4	-82.6	0.91
11/18/2009	840	5.57	7.04	20.61	0.655	0.11	-64.9	0.75
11/25/2009	1330	5.3	7.04	19.11	0.595	0.51	-60.9	1.02
12/8/2009	1011	5.25	6.91	15.2	0.503	0.89	-52.5	1.07
12/15/2009	905	5.21	6.96	16.75	0.521	1.03	-54.6	1.11
12/23/2009	1104	5.17	6.98	17.06	0.386	0.48	-50.5	1.15
12/31/2009	1024	5.34	6.92	16.34	0.432	1.09	-45.3	0.98
1/7/2010	845	5.51						0.81
1/14/2010	1000	5.58	6.99	15.55	0.546	0.62	-94.8	0.74
1/19/2010	900	5.25	6.94	16.6	0.542	1.67	-88.8	1.07
1/29/2010	1500	5.1		18.34	0.467	0.77	-103	1.22
2/5/2010	1100	4.43	6.95	16.57	0.323	0.88	-113.8	1.89
2/12/2010	1010	4.75	6.93	15.17	0.495	1.63	-85.8	1.57
2/18/2010	1437	6.22						0.10
2/23/2010	930	6.23						0.09
3/4/2010	1445	6.29						0.03
3/12/2010	935	6.32						0.00
3/18/2010	1230	6.32						0.00
3/23/2010	940	6.22						0.10
3/30/2010	1030	6.28						0.04
4/9/2010	1020	6.32						0.00
4/16/2010	1040	6.2						0.12
4/20/2010	930	6.18						0.14
4/30/2010	1020	6.28						0.04

Table 12.1.1 SWMU B-3 Bioreactor Trenches - Field Measurement Data - May 2009 - April 2010

TRENCH 5 Sump 5-1								
Sump Depth:		9.33 *feet BTOC*						
Sample Date	**Sample Time**	**Sump H_20 Level**	**pH**	**Temperature**	**Specific Conductivity**	**Dissolved Oxygen**	**ORP**	**Sump H_20 Thickness**
		(feet BTOC)		***(°C)***	***(m-mho/cm)***	***(mg/L)***	***(eV)***	***(feet)***
5/1/2009	1400	9.33						0.00
5/8/2009	1000	9.33						0.00
5/13/2009	1015	9.33						0.00
5/19/2009	908	9.33						0.00
5/28/2009	1330	9.33						0.00
6/5/2009	1041	9.33						0.00
6/12/2009	1237	9.32						0.01
6/17/2009	845	9.33						0.00
6/26/2009	930	9.33						0.00
6/30/2009	911	9.33						0.00
7/7/2009	915	9.30						0.03
7/16/2009	830	9.30						0.03
7/21/2009	830	9.30						0.03
7/30/2009	755	9.31						0.02
8/6/2009	839	9.31						0.02
8/11/2009	1030	9.30						0.03
8/18/2009	840	9.28						0.05
8/19/2009		8.62						0.71
8/27/2009	1200	9.23						0.10
9/4/2009	957	9.24						0.09
9/14/2009	1020	9.22						0.11
9/15/2009	1100	8.01						1.32
9/16/2009	1430	7.98	6.47	25.94	0.560	0.40	-104.7	1.35
9/17/2009	1045	7.97						1.36
9/18/2009	1100	8.02						1.31
9/21/2009	1100	8.11						1.22
9/22/2009	900	8.15						1.18
9/23/2009	1330	8.06						1.27
9/24/2009	930	8.32						1.01
9/25/2009	1400	8.15						1.18
9/28/2009	1015	8.26						1.07
9/29/2009	1030	8.21						1.12
9/30/2009	900	8.24	6.74	24.24	0.593	0.77	-75.5	1.09
10/1/2009	1345	8.18						1.15
10/2/2009	1000	8.22						1.11
10/5/2009	1030	7.79						1.54
10/6/2009	920	7.93						1.40
10/7/2009	840	7.78	6.73	24.06	0.776	0.25	-88.4	1.55
10/8/2009	1100	7.71						1.62
10/9/2009	1150	7.36						1.97
10/12/2009	1140	7.34						1.99
10/13/2009	1040	7.30						2.03
10/14/2009	1020	7.21						2.12
10/15/2009	1345	7.15						2.18
10/16/2009	1240	7.18	6.95	23.05	0.355	0.50	-104.7	2.15
10/19/2009	828	7.43	7.09	22.49	0.518	0.44	-224	1.90
10/30/2009	1600	6.58	6.95	21.78	0.544	0.35	-202.4	2.75
11/5/2009	935	6.26	7.19	21.37	0.325	0.63	-16.4	3.07
11/11/2009	815	6.14	7.19	22.02	0.524	0.28	-82.3	3.19
11/18/2009	840	6.15	7.04	20.69	0.539	0.45	-63.6	3.18
11/25/2009	1330	5.94	7.1	20.28	0.519	1.34	-52.6	3.39
12/8/2009	1011	5.98	7.16	20.26	0.491	0.92	-50.6	3.35
12/15/2009	905	6.04	7.07	21.27	0.503	0.55	-53.9	3.29
12/23/2009	1104	6.09	7.16	21.17	0.372	0.70	-56.8	3.24
12/31/2009	1024	6.35	7	19.97	0.421	0.95	-47.7	2.98
1/7/2010	845	6.59	7.09	19.89	0.315	1.07	-47.5	2.74
1/14/2010	1000	6.70	7.08	20.14	0.545	0.79	-101.4	2.63
1/19/2010	900	6.18	7	20.53	0.515	0.84	-97.1	3.15
1/29/2010	1500	5.86		19.48	0.455	2.49	-101.7	3.47
2/5/2010	1100	5.43	7.04	19.82	0.485	1.79	-87.9	3.90
2/12/2010	1010	5.53	7.1	19.06	0.319	1.75	-88.9	3.80
2/18/2010	1437	9.24						0.09
2/23/2010	930	9.23						0.10
3/4/2010	1445	9.21						0.12
3/12/2010	935	9.22						0.11
3/18/2010	1230	9.25						0.08
3/23/2010	940	9.25						0.08
3/30/2010	1030	9.25						0.08
4/9/2010	1020	9.28						0.05
4/16/2010	1040	9.24						0.09
4/20/2010	930	9.28						0.05
4/30/2010	1020	9.29						0.04

Table 12.1.1 SWMU B-3 Bioreactor Trenches - Field Measurement Data - May 2009 - April 2010

TRENCH 5 Sump 5-2								
Sump Depth:		7.98 *feet BTOC*						
Sample Date	**Sample Time**	**Sump H_20 Level**	**pH**	**Temperature**	**Specific Conductivity**	**Dissolved Oxygen**	**ORP**	**Sump H_20 Thickness**
		(feet BTOC)		***(°C)***	***(m-mho/cm)***	***(mg/L)***	***(eV)***	***(feet)***
5/1/2009	1400	7.03						0.95
5/8/2009	1000	7.82						0.16
5/13/2009	1015	7.30						0.68
5/19/2009	908	7.75						0.23
5/28/2009	1330	7.75						0.23
6/5/2009	1041	7.74						0.24
6/12/2009	1237	7.78						0.20
6/17/2009	845	7.98						0.00
6/26/2009	930	7.83						0.15
6/30/2009	911	7.85						0.13
7/7/2009	915	7.85						0.13
7/16/2009	830	7.87						0.11
7/21/2009	830	7.89						0.09
7/30/2009	755	7.90						0.08
8/6/2009	839	7.91						0.07
8/11/2009	1030	7.91						0.07
8/18/2009	840	7.93						0.05
8/19/2009		7.90						0.08
8/27/2009	1200	7.93						0.05
9/4/2009	957	7.81						0.17
9/14/2009	1020	7.56						0.42
9/15/2009	1100	7.78						0.20
9/16/2009	1430	7.79						0.19
9/17/2009	1045	7.79						0.19
9/18/2009	1100	7.79						0.19
9/21/2009	1100	7.80						0.18
9/22/2009	900	7.81						0.17
9/23/2009	1330	7.81						0.17
9/24/2009	930	7.81						0.17
9/25/2009	1400	7.81						0.17
9/28/2009	1015	7.81						0.17
9/29/2009	1030	7.81						0.17
9/30/2009	900	7.86						0.12
10/1/2009	1345	7.81						0.17
10/2/2009	1000	7.87						0.11
10/5/2009	1030	5.80						2.18
10/6/2009	920	6.68						1.30
10/7/2009	840	7.38	6.71	28.01	1.234	0.62	-162.6	0.60
10/8/2009	1100	7.72						0.26
10/9/2009	1150	5.37						2.61
10/12/2009	1140	7.26						0.72
10/13/2009	1040	7.51						0.47
10/14/2009	1020	7.68						0.30
10/15/2009	1345	7.58						0.40
10/16/2009	1240	7.69						0.29
10/19/2009	828	7.80						0.18
10/30/2009	1600	6.24	6.6	25.06	0.945	0.41	-193.2	1.74
11/5/2009	935	6.12	6.78	23.57	0.498	0.4	-20.0	1.86
11/11/2009	815	5.66	6.72	22.08	0.743	0.24	-92.8	2.32
11/18/2009	840	5.88	6.74	21.51	0.757	0.19	-79.5	2.10
11/25/2009	1330	5.86	6.8	20.78	0.724	0.46	-61.5	2.12
12/8/2009	1011	6.12	6.74	17.55	0.65	0.71	-53.7	1.86
12/15/2009	905	6.03	6.66	16.7	0.577	0.49	-50.1	1.95
12/23/2009	1104	6.06	6.7	16.53	0.426	0.46	-50.0	1.92
12/31/2009	1024	7.75						0.23
1/7/2010	845	7.85						0.13
1/14/2010	1000	7.98						0.00
1/19/2010	900	5.40	6.56	14.23	0.675	0.88	-83.8	2.58
1/29/2010	1500	5.28		16.28	0.535	1.53	-95.5	2.70
2/5/2010	1100	3.75	6.71	14.54	0.606	1.04	-91.5	4.23
2/12/2010	1010	4.48	6.78	14.74	0.41	0.94	-94.3	3.50
2/18/2010	1437	7.85						0.13
2/23/2010	930	7.91						0.07
3/4/2010	1445	7.93						0.05
3/12/2010	935	7.98						0.00
3/18/2010	1230	7.97						0.01
3/23/2010	940	7.80						0.18
3/30/2010	1030	7.84						0.14
4/9/2010	1020	7.87						0.11
4/16/2010	1040	7.20	6.31	19.64	0.685	0.59	-86.2	0.78
4/20/2010	930	7.79						0.19
4/30/2010	1020	7.98						0.00

Table 12.1.1 SWMU B-3 Bioreactor Trenches - Field Measurement Data - May 2009 - April 2010

TRENCH 6 Sump 6-1								
Sump Depth: 11.45 *feet BTOC*								
Sample Date	**Sample Time**	**Sump H_20 Level**	**pH**	**Temperature**	**Specific Conductivity**	**Dissolved Oxygen**	**ORP**	**Sump H_20 Thickness**
		(feet BTOC)		***(°C)***	***(m-mho/cm)***	***(mg/L)***	***(eV)***	***(feet)***
5/1/2009	1400	11.05						0.40
5/8/2009	1000	11.09						0.36
5/13/2009	1015	11.06						0.39
5/19/2009	908	11.08						0.37
5/28/2009	1330	11.05						0.40
6/5/2009	1041	11.04						0.41
6/12/2009	1237	11.05						0.40
6/17/2009	845	11.03						0.42
6/26/2009	930	11.02						0.43
6/30/2009	911	11.02						0.43
7/7/2009	915	11.00						0.45
7/16/2009	830	11.05						0.40
7/21/2009	830	11.05						0.40
7/30/2009	755	11.05						0.40
8/6/2009	839	11.04						0.41
8/11/2009	1030	11.03						0.42
8/18/2009	840	11.01						0.44
8/19/2009		7.62						3.83
8/27/2009	1200	11.15						0.30
9/4/2009	957	11.12						0.33
9/14/2009	1020	11.11						0.34
9/15/2009	1100	6.62						4.83
9/16/2009	1430	7.00	6.5	251.5	0.447	0.72	-109.2	4.45
9/17/2009	1045	7.03						4.42
9/18/2009	1100	7.12						4.33
9/21/2009	1100	7.29						4.16
9/22/2009	900	7.34						4.11
9/23/2009	1330	7.40						4.05
9/24/2009	930	6.36						5.09
9/25/2009	1400	7.28						4.17
9/28/2009	1015	7.36						4.09
9/29/2009	1030	7.32						4.13
9/30/2009	900	7.31	6.99	22.8	0.502	2.97	-73.5	4.14
10/1/2009	1345	7.31						4.14
10/2/2009	1000	7.31						4.14
10/5/2009	1030	7.17						4.28
10/6/2009	920	7.16						4.29
10/7/2009	840	6.93	7.14	24.32	0.542	3.33	-77.3	4.52
10/8/2009	1100	6.91						4.54
10/9/2009	1150	6.71						4.74
10/12/2009	1140	6.59						4.86
10/13/2009	1040	6.62						4.83
10/14/2009	1020	6.57						4.88
10/15/2009	1345	6.56						4.89
10/16/2009	1240	6.57	7.33	26.33	0.349	3.8	-17.7	4.88
10/19/2009	828	6.78	7.16	23.38	0.512	3.97	-205	4.67
10/30/2009	1600	6.15	7.1	24.33	0.541	3.53	-188.1	5.30
11/5/2009	935	5.61	7.22	24.38	0.325	2.89	-17.9	5.84
11/11/2009	815	5.61	7.13	22.08	0.517	3.02	-75.1	5.84
11/18/2009	840	5.68	7.14	20.4	0.535	2.74	-51.8	5.77
11/25/2009	1330	5.35	7.1	20.9	0.516	1.72	-51.2	6.10
12/8/2009	1011	5.40	7.14	20.18	0.489	2.53	-50.4	6.05
12/15/2009	905	5.44	7.07	20.97	0.502	2.26	-54	6.01
12/23/2009	1104	5.46	7.16	21.7	0.371	2.42	-55.1	5.99
12/31/2009	1024	6.65	7.05	22.81	0.429	2.33	-50.6	4.80
1/7/2010	845	5.85	7.4	19.35	0.311	2.6	-46.4	5.60
1/14/2010	1000	5.78	7.09	20.6	0.543	0.5	-100.5	5.67
1/19/2010	900	5.45	7.05	21.82	0.512	1.9	-99.4	6.00
1/29/2010	1500	4.90	7.1	22.25	0.466	2.2	-110.9	6.55
2/5/2010	1100	4.20	7.05	21.08	0.482	2.2	-88.4	7.25
2/12/2010	1010	4.32						7.13
2/18/2010	1437	11.23						0.22
2/23/2010	930	11.20						0.25
3/4/2010	1445	11.23						0.22
3/12/2010	935	11.18						0.27
3/18/2010	1230	11.20						0.25
3/23/2010	940	11.18						0.27
3/30/2010	1030	11.18						0.27
4/9/2010	1020	11.18						0.27
4/16/2010	1040	11.17						0.28
4/20/2010	930	11.24						0.21
4/30/2010	1020	11.19						0.26

Table 12.1.1 SWMU B-3 Bioreactor Trenches - Field Measurement Data - May 2009 - April 2010

TRENCH 6 Sump 6-2								
Sump Depth: 12.34 *feet BTOC*								
Sample Date	**Sample Time**	**Sump H_20 Level**	**pH**	**Temperature**	**Specific Conductivity**	**Dissolved Oxygen**	**ORP**	**Sump H_20 Thickness**
		(feet BTOC)		***(°C)***	***(m-mho/cm)***	***(mg/L)***	***(eV)***	***(feet)***
5/1/2009	1400	11.85						0.49
5/8/2009	1000	11.88						0.46
5/13/2009	1015	11.85						0.49
5/19/2009	908	11.82						0.52
5/28/2009	1330	11.84						0.50
6/5/2009	1041	11.83						0.51
6/12/2009	1237	11.88						0.46
6/17/2009	845	11.87						0.47
6/26/2009	930	11.91						0.43
6/30/2009	911	11.91						0.43
7/7/2009	915	11.88						0.46
7/16/2009	830	11.89						0.45
7/21/2009	830	11.9						0.44
7/30/2009	755	11.9						0.44
8/6/2009	839	11.89						0.45
8/11/2009	1030	11.88						0.46
8/18/2009	840	11.89						0.45
8/19/2009		7.41						4.93
8/27/2009	1200	12.05						0.29
9/4/2009	957	12						0.34
9/14/2009	1020	11.98						0.36
9/15/2009	1100	6.39						5.95
9/16/2009	1430	6.79	6.28	26.25	0.577	0.28	-140.7	5.55
9/17/2009	1045	6.82						5.52
9/18/2009	1100	6.92						5.42
9/21/2009	1100	7.1						5.24
9/22/2009	900	7.14						5.20
9/23/2009	1330	7.2						5.14
9/24/2009	930	7.19						5.15
9/25/2009	1400	7.02						5.32
9/28/2009	1015	7.25						5.09
9/29/2009	1030	7.21						5.13
9/30/2009	900	7.2	6.72	22.65	0.545	0.37	-163.4	5.14
10/1/2009	1345	7.19						5.15
10/2/2009	1000	7.22						5.12
10/5/2009	1030	7.05						5.29
10/6/2009	920	7.06						5.28
10/7/2009	840	6.83	6.76	22.96	0.623	0.33	-181.6	5.51
10/8/2009	1100	6.8						5.54
10/9/2009	1150	6.6						5.74
10/12/2009	1140	6.48						5.86
10/13/2009	1040	6.49						5.85
10/14/2009	1020	6.44						5.90
10/15/2009	1345	6.41						5.93
10/16/2009	1240	6.44	6.79	21.89	0.385	0.47	-158.7	5.90
10/19/2009	828	6.67	6.87	21.12	0.566	0.39	-240	5.67
10/30/2009	1600	5.97	6.78	21.13	0.579	0.27	-206.2	6.37
11/5/2009	935	5.49	7.04	20.88	0.341	0.34	-22.1	6.85
11/11/2009	815	5.42	7.05	21.58	0.536	0.27	-86.9	6.92
11/18/2009	840	5.48	7.1	20.32	0.553	0.42	-56.3	6.86
11/25/2009	1330	5.15	7.04	20.3	0.528	0.28	-60.4	7.19
12/8/2009	1011	5.19	7.14	20.55	0.494	0.67	-52.5	7.15
12/15/2009	905	5.27	7.05	21.38	0.505	0.43	-54	7.07
12/23/2009	1104	5.26	7.14	21.6	0.371	0.42	-60.8	7.08
12/31/2009	1024	5.48	7	20.11	0.421	0.48	-47.8	6.86
1/7/2010	845	5.7	7.09	20.45	0.314	0.8	-50.1	6.64
1/14/2010	1000	5.97	7.08	21.1	0.551	1.77	-100.5	6.37
1/19/2010	900	5.25	7.02	21.17	0.513	0.59	-98.9	7.09
1/29/2010	1500	4.69	6.96	18.95	0.452	0.69	-105.5	7.65
2/5/2010	1100	3.94	7.04	19.88	0.483	1.45	-96.3	8.40
2/12/2010	1010	4.1	7.21	19.17	0.324	1.61	-91.2	8.24
2/18/2010	1437	12.33						0.01
2/23/2010	930	12.23						0.11
3/4/2010	1445	12.34						0.00
3/12/2010	935	12.34						0.00
3/18/2010	1230	12.34						0.00
3/23/2010	940	12.3						0.04
3/30/2010	1030	12.31						0.03
4/9/2010	1020	12.32						0.02
4/16/2010	1040	12.28						0.06
4/20/2010	930	12.26						0.08
4/30/2010	1020	12.31						0.03

Table 12.1.2

SWMU B-3 Trench 1 through 6 VOC Analytical Summary Table
May 2009 - April 2010

Q12	B3 T1-1														
Date	**5/19/09**	**6/17/09**	**7/21/09**	**8/18/09**	**9/16/09**	**9/23/09**	**9/30/09**	**10/7/09**	**10/19/09**	**11/18/09**	**12/15/09**	**1/19/10**	**2/23/10**	**3/23/10**	**4/20/10**
PCE (µg/L)	0	0	0.20	0	0	0	0	0	5.6	5.9	18	1.7	2.8	0.26	1.2
TCE (µg/L)	0	0	0.86	3.5	1.7	0	0	0.29	15	11	28	2.5	4.0	5.8	8.8
cis-1,2-DCE (µg/L)	16	10	8.2	55	8.1	0.98	0.46	4	18	120	110	9.9	6.2	12	14
trans-1,2-DCE (µg/L)	2.2	3	11	5.9	5.8	1.3	0	0	0	1.8	0.62	0.23	0.24	0.47	0
Vinyl Chloride (µg/L)	45	32	54	64	43	26	18	16	2.6	5.5	50	3.7	18	7.1	0.49
Ethene (µg/L)	0	1.9	0	0	0	17	0	0	0	0	0	0	0	0	0
PCE (nM/L)	0.000	0.000	1.206	0.000	0.000	0.000	0.000	0.000	33.770	35.579	108.545	10.251	16.885	1.568	7.236
TCE (nM/L)	0.000	0.000	6.545	26.638	12.939	0.000	0.000	2.207	114.164	83.720	213.106	19.027	30.444	44.143	66.976
cis-1,2-DCE (nM/L)	165.034	103.146	84.580	567.303	83.548	10.108	4.745	41.258	185.663	1237.751	1134.605	102.114	63.950	123.775	144.404
trans-1,2-DCE (nM/L)	22.692	30.944	113.461	60.856	59.825	13.409	0.000	0.000	0.000	18.566	6.395	2.372	2.476	4.848	0.000
Vinyl Chloride (nM/L)	719.885	511.918	863.862	1023.836	687.890	415.933	287.954	255.959	41.593	87.986	799.872	59.191	287.954	113.582	7.839
Ethene (nM/L)	0.000	67.736	0.000	0.000	0.000	606.061	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Molar Conc. (nM/L)	907.610	713.744	1,069.653	1,678.633	844.201	1,045.511	292.699	299.425	375.190	1,463.602	2,262.523	192.956	401.708	287.916	226.456
% moles PCE	0.000%	0.000%	0.113%	0.000%	0.000%	0.000%	0.000%	0.000%	9.001%	2.431%	4.798%	5.313%	4.203%	0.545%	3.195%
% moles TCE	0.000%	0.000%	0.612%	1.587%	1.533%	0.000%	0.000%	0.737%	30.428%	5.720%	9.419%	9.861%	7.579%	15.332%	29.576%
% moles cis-1,2-DCE	18.183%	14.451%	7.907%	33.796%	9.897%	0.967%	1.621%	13.779%	49.485%	84.569%	50.148%	52.921%	15.920%	42.990%	63.767%
% moles trans-1,2-DCE	2.500%	4.335%	10.607%	3.625%	7.087%	1.283%	0.000%	0.000%	0.000%	1.269%	0.283%	1.229%	0.616%	1.684%	0.000%
% moles Vinyl Chloride	79.316%	71.723%	80.761%	60.992%	81.484%	39.783%	98.379%	85.484%	11.086%	6.012%	35.353%	30.676%	71.682%	39.450%	3.461%
% moles Ethene	0.000%	9.490%	0.000%	0.000%	0.000%	57.968%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
sum % moles	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Month 25	Month 26	Month 27	Month 28	Month 29	Month 29	Month 29	Month 30	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35	Month 36

Note: 0 sample indicates a non-detect analyte value

	B3 T1-2														
Date	**5/19/09**	**6/17/09**	**7/21/09**	**8/18/09**	**9/16/09**	**9/23/09**	**9/30/09**	**10/7/09**	**10/19/09**	**11/18/09**	**12/15/09**	**1/19/10**	**2/23/10**	**3/23/10**	**4/20/10**
PCE (µg/L)	0	0	0	0	0	0	0.35	0	0.32	8.1	20	4.4	1.1	0.55	0.28
TCE (µg/L)	0	0	0.37	0.44	0	0.36	0.94	0	3.0	16	30	6.8	1.3	0.39	1.6
cis-1,2-DCE (µg/L)	1.9	1.1	2.2	3.2	2.2	4.8	6.3	5	27	91	52	7.6	1.7	2.0	9.3
trans-1,2-DCE (µg/L)	2.7	5.6	7.4	4.5	6.9	2.1	0	0	0	1.9	0.36	0.53	0	0.23	1.1
Vinyl Chloride (µg/L)	14	3.2	9.8	4.1	11	24	28	6.4	3.1	0.96	2.7	1.4	1.8	1.3	8.4
Ethene (µg/L)	3.6	7	5.2	0	0	15.4	0	1.8	1.0	0	3.9	3.8	0	0	0
PCE (nM/L)	0.000	0.000	0.000	0.000	0.000	0.000	2.111	0.000	1.930	48.845	120.605	26.533	6.633	3.317	1.688
TCE (nM/L)	0.000	0.000	2.816	3.349	0.000	2.740	7.154	0.000	22.833	121.775	228.328	51.754	9.894	2.968	12.177
cis-1,2-DCE (nM/L)	19.598	11.346	22.692	33.007	22.692	49.510	64.982	51.573	278.494	938.628	536.359	78.391	17.535	20.629	95.926
trans-1,2-DCE (nM/L)	27.849	57.762	76.328	46.416	71.171	21.661	0.000	0.000	0.000	19.598	3.713	5.467	0.000	2.372	11.346
Vinyl Chloride (nM/L)	223.964	51.192	156.775	65.590	175.972	383.939	447.928	102.384	49.592	15.358	43.193	22.396	28.795	20.797	134.378
Ethene (nM/L)	128.342	249.554	185.383	0.000	0.000	549.020	0.000	64.171	35.651	0.000	139.037	135.472	0.000	0.000	0.000
Total Molar Conc. (nM/L)	399.754	369.854	443.994	148.361	269.835	1,006.869	522.175	218.128	388.499	1,144.204	1,071.236	320.014	62.858	50.083	255.516
% moles PCE	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.404%	0.000%	0.497%	4.269%	11.259%	8.291%	10.553%	6.622%	0.661%
% moles TCE	0.000%	0.000%	0.634%	2.257%	0.000%	0.272%	1.370%	0.000%	5.877%	10.643%	21.314%	16.173%	15.741%	5.927%	4.766%
% moles cis-1,2-DCE	4.902%	3.068%	5.111%	22.248%	8.410%	4.917%	12.444%	23.643%	71.685%	82.033%	50.069%	24.496%	27.896%	41.190%	37.542%
% moles trans-1,2-DCE	6.967%	15.617%	17.191%	31.286%	26.376%	2.151%	0.000%	0.000%	0.000%	1.713%	0.347%	1.708%	0.000%	4.737%	4.440%
% moles Vinyl Chloride	56.026%	13.841%	35.310%	44.209%	65.215%	38.132%	85.781%	46.937%	12.765%	1.342%	4.032%	6.999%	45.810%	41.524%	52.591%
% moles Ethene	32.105%	67.474%	41.754%	0.000%	0.000%	54.527%	0.000%	29.419%	9.176%	0.000%	12.979%	42.333%	0.000%	0.000%	0.000%
sum % moles	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Month 25	Month 26	Month 27	Month 28	Month 29	Month 29	Month 29	Month 30	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35	Month 36

	B3 T1-3														
Date	**5/19/09**	**6/17/09**	**7/21/09**	**8/18/09**	**9/16/09**	**9/23/09**	**9/30/09**	**10/7/09**	**10/19/09**	**11/18/09**	**12/15/09**	**1/19/10**	**2/23/10**	**3/23/10**	**4/20/10**
PCE (µg/L)	0	0	0.31	0	0	0	0	0	23	1.5	14	2.7	1.7	2.6	3.1
TCE (µg/L)	0	0	0.55	0.26	0.51	0.28	0.28	0.19	35	2.4	20	4.9	3.5	9.2	15
cis-1,2-DCE (µg/L)	0.81	0.78	1.7	1.3	1.3	0.61	0.61	0.42	39	65	45	26	8.0	7.5	19
trans-1,2-DCE (µg/L)	7.3	5.8	15	6.5	5.9	2.6	0	0	0	1.5	0	0.43	0	0	0.31
Vinyl Chloride (µg/L)	24	2.7	29	9.1	0	0.31	0	0	0.62	6.6	0.54	4.3	4.3	0.51	0.54
Ethene (µg/L)	9.2	7.9	10	0	0	0	0	0	0	0	0	0	0	0	0
PCE (nM/L)	0.000	0.000	1.869	0.000	0.000	0.000	0.000	0.000	138.696	9.045	84.424	16.282	10.251	15.679	18.694
TCE (nM/L)	0.000	0.000	4.186	1.979	3.882	2.131	2.131	1.446	266.383	18.266	152.219	37.294	26.638	70.021	114.164
cis-1,2-DCE (nM/L)	8.355	8.045	17.535	13.409	13.409	6.292	6.292	4.332	402.269	670.449	464.157	268.179	82.517	77.359	195.977
trans-1,2-DCE (nM/L)	75.297	59.825	154.719	67.045	60.856	26.818	0.000	0.000	0.000	15.472	0.000	4.435	0.000	0.000	3.198
Vinyl Chloride (nM/L)	383.939	43.193	463.926	145.577	0.000	4.959	0.000	0.000	9.918	105.583	8.639	68.789	68.789	8.159	8.639
Ethene (nM/L)	327.986	281.640	356.506	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Molar Conc. (nM/L)	795.576	392.703	998.741	228.009	78.147	40.200	8.423	5.778	817.266	818.815	709.438	394.979	188.195	171.217	340.671
% moles PCE	0.000%	0.000%	0.187%	0.000%	0.000%	0.000%	0.000%	0.000%	16.971%	1.105%	11.900%	4.122%	5.447%	9.157%	5.487%
% moles TCE	0.000%	0.000%	0.419%	0.868%	4.967%	5.301%	25.301%	25.026%	32.594%	2.231%	21.456%	9.442%	14.155%	40.896%	33.511%
% moles cis-1,2-DCE	1.050%	2.049%	1.756%	5.881%	17.159%	15.651%	74.699%	74.974%	49.221%	81.880%	65.426%	67.897%	43.846%	45.182%	57.527%
% moles trans-1,2-DCE	9.464%	15.234%	15.491%	29.404%	77.874%	66.711%	0.000%	0.000%	0.000%	1.890%	0.000%	1.123%	0.000%	0.000%	0.939%
% moles Vinyl Chloride	48.259%	10.999%	46.451%	63.847%	0.000%	12.336%	0.000%	0.000%	1.214%	12.895%	1.218%	17.416%	36.552%	4.765%	2.536%
% moles Ethene	41.226%	71.718%	35.696%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
sum % moles	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Month 25	Month 26	Month 27	Month 28	Month 29	Month 29	Month 29	Month 30	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35	Month 36

	B3 T2-1												
Date	**5/19/09**	**6/17/09**	**7/21/09**	**8/18/09**	**9/16/09**	**9/24/09**	**10/7/09**	**10/19/09**	**11/18/09**	**12/15/09**	**1/19/10**	**2/23/10**	**3/23/10**	**4/20/10**
PCE (µg/L)	0	0.23	0.39	0.47	0	0	0	0.44	0.43	1.2	0.26	0.20	1.4	0.95
TCE (µg/L)	0	2.9	3.3	2.9	0	0	0.38	1.1	1.4	2.3	0.39	0.32	5.0	9.0
cis-1,2-DCE (µg/L)	36	41	57	44	12	4.3	3.0	6.9	5.9	4.4	0.98	1.7	8.1	21
trans-1,2-DCE (µg/L)	0.66	1.7	6.0	5.0	3.5	0.84	0	0	0	0	0	0	0	0.45
Vinyl Chloride (µg/L)	9.8	7.1	22	17	110	32	25	14	3.1	1.5	0	2.2	0.25	1.0
Ethene (µg/L)	0	0	0	0	0	2.8	0	0	0	0	0	0	0	0
PCE (nM/L)	0.000	1.387	2.352	2.834	0.000	0.000	0.000	2.653	2.593	7.236	1.568	1.206	8.442	5.729
TCE (nM/L)	0.000	22.072	25.116	22.072	0.000	0.000	2.892	8.372	10.655	17.505	2.968	2.435	38.055	68.498
cis-1,2-DCE (nM/L)	371.325	422.898	587.932	453.842	123.775	44.353	30.944	71.171	60.856	45.384	10.108	17.535	83.548	216.606
trans-1,2-DCE (nM/L)	6.808	17.535	61.888	51.573	36.101	8.664	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.642
Vinyl Chloride (nM/L)	156.775	113.582	351.944	271.956	1759.718	511.918	399.936	223.964	49.592	23.996	0.000	35.194	3.999	15.997
Ethene (nM/L)	0.000	0.000	0.000	0.000	0.000	99.822	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Molar Conc. (nM/L)	534.908	577.474	1,029.231	802.278	1,919.595	664.757	433.772	306.160	123.696	94.122	14.644	56.371	134.045	311.473
% moles PCE	0.000%	0.240%	0.229%	0.353%	0.000%	0.000%	0.000%	0.867%	2.096%	7.688%	10.706%	2.140%	6.298%	1.839%
% moles TCE	0.000%	3.822%	2.440%	2.751%	0.000%	0.000%	0.667%	2.735%	8.614%	18.598%	20.269%	4.320%	28.390%	21.992%
% moles cis-1,2-DCE	69.419%	73.232%	57.123%	56.569%	6.448%	6.672%	7.134%	23.246%	49.198%	48.219%	69.025%	31.106%	62.329%	69.543%
% moles trans-1,2-DCE	1.273%	3.036%	6.013%	6.428%	1.881%	1.303%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	1.490%
% moles Vinyl Chloride	29.309%	19.669%	34.195%	33.898%	91.671%	77.008%	92.200%	73.153%	40.092%	25.495%	0.000%	62.434%	2.984%	5.136%
% moles Ethene	0.000%	0.000%	0.000%	0.000%	0.000%	15.016%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
sum % moles	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Month 25	Month 26	Month 27	Month 28	Month 29	Month 29	Month 30	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35	Month 36

	B3 T2-2									B3-T3-1				B3-T3-2	B3-T4-1
Date	**9/23/09**	**10/7/09**	**10/19/09**	**11/18/09**	**12/15/09**	**1/19/10**	**2/23/10**	**3/23/10**	**4/20/10**	**9/30/09**	**10/7/09**	**10/19/09**	**11/17/09**	**11/17/09**	**11/17/09**
PCE (µg/L)	0	0	0.18	0.48	1.6	0.25	0	0	0	0	0	0.24	0	0	0
TCE (µg/L)	0	0	0.32	1.5	3.5	0.26	0	0.30	0.50	0	0	0.51	0.20	0.37	0.30
cis-1,2-DCE (µg/L)	1.4	1.8	70	4.3	3.0	0.22	0.30	0.18	0.47	0.33	0	1.2	0.72	1.2	0.20
trans-1,2-DCE (µg/L)	0.47	0	0	0.57	0.47	0	0.21	0	0	0	0	0	0	0	0
Vinyl Chloride (µg/L)	29	19	16	80	6.2	0.77	1.0	0	0	0	0	0	0.53	0	0
Ethene (µg/L)	0	0	0	1.5	7.7	1.2	0	0	0	0	0	0	0	0	0
PCE (nM/L)	0.000	0.000	1.085	2.895	9.648	1.508	0.000	0.000	0.000	0.000	0.000	1.447	0.000	0.000	0.000
TCE (nM/L)	0.000	0.000	2.435	11.416	26.638	1.979	0.000	2.283	3.805	0.000	0.000	3.882	1.522	2.816	2.283
cis-1,2-DCE (nM/L)	14.440	18.566	722.022	44.353	30.944	2.269	3.094	1.857	4.848	3.404	0.000	12.378	7.427	12.378	2.063
trans-1,2-DCE (nM/L)	4.848	0.000	0.000	5.879	4.848	0.000	2.166	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Vinyl Chloride (nM/L)	463.926	303.951	255.959	1279.795	99.184	12.318	15.997	0.000	0.000	0.000	0.000	0.000	8.479	0.000	0.000
Ethene (nM/L)	0.000	0.000	0.000	53.476	274.510	42.781	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Molar Conc. (nM/L)	483.214	322.518	981.502	1,397.814	445.772	60.854	21.258	4.140	8.653	3.404	0.000	17.706	17.427	15.194	4.346
% moles PCE	0.000%	0.000%	0.111%	0.207%	2.164%	2.477%	0.000%	0.000%	0.000%	0.000%	0.000%	8.174%	0.000%	0.000%	0.000%
% moles TCE	0.000%	0.000%	0.248%	0.817%	5.976%	3.252%	0.000%	55.153%	43.977%	0.000%	0.000%	21.922%	8.734%	18.534%	52.535%
% moles cis-1,2-DCE	2.988%	5.757%	73.563%	3.173%	6.942%	3.729%	14.556%	44.847%	56.023%	100.000%	0.000%	69.904%	42.614%	81.466%	47.465%
% moles trans-1,2-DCE	1.003%	0.000%	0.000%	0.421%	1.088%	0.000%	10.189%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
% moles Vinyl Chloride	96.008%	94.243%	26.078%	91.557%	22.250%	20.242%	75.254%	0.000%	0.000%	0.000%	0.000%	0.000%	48.651%	0.000%	0.000%
% moles Ethene	0.000%	0.000%	0.000%	3.826%	61.581%	70.300%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
sum % moles	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		100.0%	100.0%	100.0%	100.0%
	Month 29	Month 30	Month 30	Month 31	Month 32	Month 32	Month 34	Month 35	Month 36	Month 29	Month 30	Month 30	Month 31	Month 31	Month 31

	B3-T5-1						B3-T5-2		B3-T6-1			B3T6-2		
Date	**9/16/09**	**9/24/09**	**9/30/09**	**10/7/09**	**10/20/09**	**11/17/09**	**10/7/09**	**11/17/09**	**9/24/09**	**10/20/09**	**11/17/09**	**9/24/09**	**10/20/09**	**11/17/09**
PCE (µg/L)	0	0	0.46	0	0	0	0	0.21	0.15	0	0	0	0.16	0
TCE (µg/L)	0	0	0	0	0.22	0	0	0.36	0	0.16	0	0	0	0
cis-1,2-DCE (µg/L)	0.72	0.82	0.39	0	0.52	0	0	0.45	0.28	0.25	0	0.43	0.41	0
trans-1,2-DCE (µg/L)	0.78	0	0	0	0	0	0	0	0	0	0	0	0	0
Vinyl Chloride (µg/L)	3.2	0.87	0	0	0	0	0	0	0.40	0	0	0.89	0	0
Ethene (µg/L)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PCE (nM/L)	0.000	0.000	2.774	0.000	0.000	0.000	0.000	1.266	0.905	0.000	0.000	0.000	0.965	0.000
TCE (nM/L)	0.000	0.000	0.000	0.000	1.674	0.000	0.000	2.740	0.000	1.218	0.000	0.000	0.000	0.000
cis-1,2-DCE (nM/L)	7.427	8.458	4.023	0.000	5.364	0.000	0.000	4.642	2.888	2.579	0.000	4.435	4.229	0.000
trans-1,2-DCE (nM/L)	8.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Vinyl Chloride (nM/L)	51.192	13.918	0.000	0.000	0.000	0.000	0.000	0.000	6.399	0.000	0.000	14.238	0.000	0.000
Ethene (nM/L)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Molar Conc. (nM/L)	66.664	22.376	6.797	0.000	7.038	0.000	0.000	8.648	10.192	3.796	0.000	18.673	5.194	0.000
% moles PCE	0.000%	0.000%	40.813%	0.000%	0.000%	0.000%	0.000%	14.644%	8.875%	0.000%	0.000%	0.000%	18.577%	0.000%
% moles TCE	0.000%	0.000%	0.000%	0.000%	23.791%	0.000%	0.000%	31.683%	0.000%	32.076%	0.000%	0.000%	0.000%	0.000%
% moles cis-1,2-DCE	11.140%	37.800%	59.187%	0.000%	76.209%	0.000%	0.000%	53.673%	28.338%	67.924%	0.000%	23.752%	81.423%	0.000%
% moles trans-1,2-DCE	12.069%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
% moles Vinyl Chloride	76.791%	62.200%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	62.787%	0.000%	0.000%	76.248%	0.000%	0.000%
% moles Ethene	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
sum % moles	100.0%	100.0%	100.0%		100.0%			100.0%	100.0%	100.0%		100.0%	100.0%	
	Month 29	Month 29	Month 29	Month 30	Month 30	Month 31	Month 30	Month 31	Month 29	Month 30	Month 31	Month 29	Month 30	Month 31

Table 12.1.3

B-3 Bioreactor Analytical Summary
May 2009 - April 2010

Q12 — **B3 Sump Analytical Data**

Sump ID — **B3 T1-1**

Sample Date		5/19/2009		6/17/2009		7/21/2009		8/18/2009		9/16/2009		9/232009		9/30/2009		10/7/2009		10/19/2009		11/18/2009		12/15/2009		1/19/2010		2/23/2010		3/23/2010		4/20/2010	
Compound	**Units**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**
Dissolved Organic Carbon	mg/L	5.8		2.8	B	3.1		4.1		25.3		12.9				30.5		28.6		9.2		8.9		6.1		7.4		3.6		4.2	
Total Organic Carbon	mg/L	6.7		3.6		3.2		6.2		21.3		15.2				53.5		31		11.5		7.5		7.2		5.9		4.0		3.8	
Methane	µg/L	1,420		1,150		3,550		750				6,850				2,130		201		25.8		978		35.9		0		0		0	
Ethene	µg/L	0		1.9	J	0		0				17				0		0		0		0		0		0		0		0	
Ethane	µg/L	0		0		0		0				0				0		0		0		0		0		0		0		0	
Carbon Dioxide	µg/L	239,000		254,000		447,000		136,000				478,000				277,000		84,500		22,600		34,900		38,000		30,100		86,300		78,200	
Alkalinity, Total (as CACO3)	mg/L	445		427		490		371		521		506				568		459		321		319		292		298		342		366	
Nitrate/Nitrite	mg/L	0		0		0.058	J	0		0.045	J	0				0.20		2.6		0		0.064	J	0.29	B	0		0.12		0.069	J
Sulfate	mg/L	10.2		18.2		3.3		28.8		21.6		7.1				35.6		49.3		15.5		10.7		29.3		8.3		115		71.6	
Chloride	mg/L	15.1		15.4		14.2		15.8		14.5		20.1				12.4		12		13.5		12.4		11.5		13.1		16.4		15.3	
Ferrous Iron	mg/L	3.5		3.1		3.4		1.9		4.1		3				3.5		0.24	J	0.52	J	0.45	J	0.21	J	0.46	J	2.9		0.57	J
Manganese	µg/L	177		110		203		39.9		158		123				529		316		820		639		284		283		757		577	
Hydrogen	nM/L	2.4		2.9		2.6		2.8																						3.5	
Total Dissolved Solids	mg/L	531		510		510		451		648		572				710		645		430		360		422		381		564		503	
Benzene	µg/L	0		0		0		0		0		0.34	J	0.82		0.25	J	0		0		0		0		0		0		0	
Bromodichloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromoform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Chloroform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dibromochloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichlorodifluoromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, 1,1-	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, cis-1,2-	µg/L	16		10		8.2		55		8.1		0.98	BJ	0.46	J	4.0		18		120		110		9.9		6.2		12		14	
Dichloroethene, trans-1,2-	µg/L	2.2		3.0		11		5.9		5.8		1.3		0		0		0		1.8		0.62		0.23	J	0.24	J	0.47	J	0	
Methylene chloride	µg/L	0		0		0		0		0		0.45	J	0		0		0		0		0		0		0		0		0	
Naphthalene	µg/L	0		0		0		0		0		0.40		0.64		0		0		0		0		0		0		0		0	
Tetrachloroethene	µg/L	0		0		0.2	BJ	0		0		0		0		0		5.6		5.9		18		1.7		2.8		0.26	J	1.2	J
Toluene	µg/L	0.60	J	0.53	J	1.3		0.26	J	0.17	J	0.40	J	1.1		0.31	J	0		0		0		0		0		0		0	
Trichloroethene	µg/L	0		0		0.86	J	3.5		1.7		0		0		0.29	J	15		11		28		2.5		4.0		5.8		8.8	
Vinyl chloride	µg/L	45		32		54		64		43		26		18		16		2.6		5.5		50		3.7		18		7.1		0.49	J
Arsenic	µg/L	0		0		0		0		0		0				15.2		4.2	J	6.9		6.3		0		0		0		0	
Barium	µg/L	62.1		58.2		68.4		47.9		80.4		75.4				254		183		111		204		352		227		187		198	
Cadmium	µg/L	0		0		0.53	J	0		0		0				0		0		0		0		0		0		0		0	
Chromium	µg/L	0		0		0		0		0		1.5	J			0		1.4	J	0		0		0		0		0		0	
Copper	µg/L	0		0		2.0	J	27.9		2.1	J	0				1.4	J	5.2		48.5		1.7	J	1.1	J	0		4.9	BJ	12.2	B
Lead	µg/L	0		2.2	J	0		0		0		0				0		0		0		0		0		0		0		0	
Mercury	µg/L	0		0		0.086	J	0		0		0				0.12	J	0		0.18	BJ	0		0.19	BJ	0		0		0	
Nickel	µg/L	0		0		0		0		3.6	J	0				3.5	J	4.3	J	3.5	J	2.5	J	0.51	J	0.96	J	0		0.71	J
Zinc	µg/L	0		0		247		33.7	BJ	9.7	J	16	J			27.1	J	27.4	J	78.6		54		22.5	J	0		28.9	J	70.8	B
		Month 25		Month 26		Month 27		Month 28		Month 29		Month 29		Month 29		Month 30		Month 30		Month 31		Month 32		Month 33		Month 34		Month 35		Month 36	

Note: 0 sample indicates a non-detect analyte value

Sump ID — **B3 T1-2**

Sample Date		5/19/2009		6/17/2009		7/21/2009		8/18/2009		9/16/2009		9/23/2009		9/30/2009		10/7/2009		10/19/2009		11/18/2009		12/15/2009		1/19/2010		2/23/2010		3/23/2010		4/20/2010	
Compound	**Units**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**
Dissolved Organic Carbon	mg/L	5.6		2.7	B	4.7		3.0		19.9		14.7				105		31.3		6.7		7.4		8.8		9.9		7.5		7.0	
Total Organic Carbon	mg/L	6.0		2.9		4.8		4.8		17.7		16.7				106		38.4		8.6		9.1		9.1		10.3		8.8		7.9	
Methane	µg/L	5,400		7,010		5,640		8,870				13,800				5,040		12,600		0		6,310		11,000		1,990		32.2		122	
Ethene	µg/L	3.6		7.0		5.2		0				15.4				1.8	J	1.0	J	0		3.9		3.8		0		0		0	
Ethane	µg/L	0		0		0		0				0				0		0		0		0		0		0		0		0	
Carbon Dioxide	µg/L	272,000		315,000		291,000		332,000				581,000				456,000		147,000		19,700		59,600		86,900	J	38,800		184,000		8,400	
Alkalinity, Total (as CACO3)	mg/L	471		470		468		469		493		459				739		426		333		312		341		331		410		392	
Nitrate/Nitrite	mg/L	0		0.045	J	0		0.034	J	0		0				0		0.06	B J	0.16		0.19		0.064	BJ	0		0		0.20	
Sulfate	mg/L	5.6		1.3		2.2		5.6		4.6		9.8				35		20.4		17.6		11.2		25.2		6.0		141		46.9	
Chloride	mg/L	15.3		15.4		14.4		15.7		15.7		19.1				12.1		13		13.3		12.8		13.3		12.4		14.8		15.2	
Ferrous Iron	mg/L	5.0		3.5		4.2		4.1		4.0		4.3				6.8		5.3		0.37	J	1.2		2.4		0.64	J	3.0		0.75	J
Manganese	µg/L	218		152		256		201		314		495				354		548		187		251		303		424		849		609	
Hydrogen	nM/L	5.0		6.1		2.7		3.3				3.4						1.2		1.9		2.8		2.6		1.9		4.5		4.5	
Total Dissolved Solids	mg/L	526		486		512		482		567		531				912		540		410		364		448		393		680		497	
Benzene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0.20	J	0	
Bromodichloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromoform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Chloroform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dibromochloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichlorodifluoromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, 1,1-	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, cis-1,2-	µg/L	1.9		1.1	J	2.2		3.2		2.2		4.8		6.3		5		27		91		52		7.6		1.7		2		9.3	
Dichloroethene, trans-1,2-	µg/L	2.7		5.6		7.4		4.5		6.9		2.1		0		0		0		1.9		0.36	J	0.53	J	0		0.23	J	1.1	
Methylene chloride	µg/L	0		0		0		0		0		0.45	J	0		0		0		0		0		0		0		0		0	
Naphthalene	µg/L	0		0		0		0		0		0		1.0		0		0		0		0		0		0		0		0	
Tetrachloroethene	µg/L	0		0		0		0		0		0		0.35	J	0		0.32	J	8.1		20		4.4		1.1	J	0.55	J	0.28	J
Toluene	µg/L	0.82	J	1.0	J	1.4		1.0	J	0.28	J	0.22	J	0.45	J	0.45	J	0.44	J	0		0.21	J	0.34	J	0		0		0	
Trichloroethene	µg/L	0		0		0.37	J	0.44	J	0		0.36	J	0.94	J	0		3.0		16		30		6.8		1.3		0.39	J	1.6	
Vinyl chloride	µg/L	14		3.2		9.8		4.1		11		24		28		6.4		3.1		0.96	J	2.7		1.4		1.8		1.3		8.4	
Arsenic	µg/L	0		0		0		0		0		0				10.8		12.8		4.3	J	3.3	J	0		0		0		5.2	
Barium	µg/L	91.0		88.8		104		98.3		98.7		104				224		177		81.1		113		113		242		321		170	
Cadmium	µg/L	0		0		0		0		0		0				0		0		0		0		0		0		0		0	
Chromium	µg/L	0		0		0		0		0		0				0		1.8	J	0		0		0		0		0		0	
Copper	µg/L	0		0		0		1.0	J	0		0				0		10.4		50.6		1.3	J	1.0	J	0		7.8	B	12.7	B
Lead	µg/L	0		1.9	J	0		0		0		0				0		0		0		0		0		0		0		0	
Mercury	µg/L	0		0		0.080	J	0		0		0				0.12	J	0		0.16	BJ	0		0.18	BJ	0		0		0	
Nickel	µg/L	0		0		0		0		1.7	J	0.40	J			2.8	J	2.6	J	2.4	J	2.2	J	0		0		1.2	J	0.95	J
Zinc	µg/L	0		0		64.8		0		9.1	J	14.7	J			14.3	J	24.6	J	92		38.6	J	27.3	J	0		47.6	J	60	B
		Month 25		Month 26		Month 27		Month 28		Month 29		Month 29		Month 29		Month 30		Month 30		Month 31		Month 32		Month 33		Month 34		Month 35		Month 36	

Note: 0 sample indicates a non-detect analyte value

Sump ID — **B3 T1-3**

Sample Date		5/19/2009		6/17/2009		7/21/2009		8/18/2009		9/16/2009		9/23/2009		9/30/2009		10/7/2009		10/19/2009		11/18/2009		12/15/2009		1/19/2010		2/23/2010		3/23/2010		4/20/2010	
Compound	**Units**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**
Dissolved Organic Carbon	mg/L	4.7		3.6	B	4.0		2.7		19.2		14.3				92.5		21.3		4.0		6.2		9.3		11.7		5.6		6.1	
Total Organic Carbon	mg/L	5.0		4.0		4.3		10.2		16.4		16.4				94.7		24.6		4.7		7.1		9.3		9.9		5.6		7.8	
Methane	µg/L	6,250		7,280		9,450		6,740				11,100				12,500		240		601		1.1		0.30	J	10		0		0	
Ethene	µg/L	9.2		7.9		10		0				0				0		0		0		0		0		0		0		0	
Ethane	µg/L	0		0		0		0				2.5				0.70	J	0		0		0		0		0		0		0	
Carbon Dioxide	µg/L	179,000		265,000		332,000		162,000				742,000				764,000		30,100		19,700		16,600		28,900		16,900		61,900		28,200	
Alkalinity, Total (as CACO3)	mg/L	373		458		395		385		568		583				723		302		315		320		313		287		307		290	
Nitrate/Nitrite	mg/L	0		0	J	0.044	J	0		0.14		0				0		0.094	BJ	0		0.087	J	0		0.063	J	0.68		0.12	
Sulfate	mg/L	2.0		1.3		1.1		1.6		5.9		3.4				19.6		43.7		15.4		18.6		46.2		42.6		166		74.4	
Chloride	mg/L	15.1		15.5		14.2		15.8		12.5		16.9				6.6		14.6		12.9		12.7		13.6		12.5		16.4		14.7	
Ferrous Iron	mg/L	2.9		3.8		4.2		1.9		2.9		2.7				6.4		0.92	J	0.54	J	0.23	J	0.86	J	0.54	J	0.27	J	0.29	J
Manganese	µg/L	296		289		306		175		292		289				545		292		128		62.5		269		107		227		93	
Hydrogen	nM/L	3.8		3.8		6.1		3.9														2.8								6.4	
Total Dissolved Solids	mg/L	435		490		449		439		619		666				890		409		397		386		419		401		603		442	
Benzene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromodichloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromoform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Chloroform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dibromochloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichlorodifluoromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, 1,1-	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, cis-1,2-	µg/L	0.81	J	0.78	J	1.7		1.3		1.3		0.61	BJ	0.61	J	0.42	J	39		65		45		26		8		7.5		19	
Dichloroethene, trans-1,2-	µg/L	7.3		5.8		15		6.5		5.9		2.6		0		0		0		1.5		0		0.43	J	0		0		0.31	J
Methylene chloride	µg/L	0		0		0		0		0		0.44	J	0		0		0		0		0		0		0		0		0	
Naphthalene	µg/L	0		0		0		0		0		0		0.49		0		0		0		0		0		0		0		0	
Tetrachloroethene	µg/L	0		0		0.31	BJ	0		0		0		0		0		23		1.5		14		2.7		1.7		2.6		3.1	
Toluene	µg/L	0.48	J	1.0	J	1.1		0		0.37	J	0.56	J	1.6		0.69	J	0		0		0		0		0		0		0	
Trichloroethene	µg/L	0		0		0.55	J	0.26	J	0.51	J	0.28	J	0.28	J	0.19	J	35		2.4		20		4.9		3.5		9.2		15	
Vinyl chloride	µg/L	24		2.7		29		9.1		0		0.31	J	0		0		0.62	J	6.6		0.54	J	4.3		4.3		0.51	J	0.54	J
Arsenic	µg/L	0		0		0		0		0		0				10.1		0		3.4	J	0		0		0		0		0	
Barium	µg/L	94		131		101		87.6		127		137				201		88.5		74.2		68.1		135		111		146		213	
Cadmium	µg/L	0		0		0		0		0		0				0		0		0		0		0		0		0		0	
Chromium	µg/L	0		0		0		0		0		1.7	J			1.6	J	0		0		0		0		0		0		0	
Copper	µg/L	0		0		0		0		1.5	J	0				15		3.4	J	49.3		0		1.1	J	0		5.8	B	14.8	B
Lead	µg/L	0		0		0		0		1.6	J	0				14.4		0		0		0		2.0	J	0		0		0	
Mercury	µg/L	0		0		0.083	J	0		0		0				0.13	J	0		0.17	BJ	0		0.18	BJ	0		0		0	
Nickel	µg/L	0		0		0		0		1.9	J	2.6	J			3.6	J	1.3	J	1.1	J	2.8	J	2.6	J	0.83	J	0		1.7	J
Zinc	µg/L	0		2.6	J	84		5.0	BJ	8.4	J	17.9	J			14	J	20.6	J	42.7	J	24.9	J	16	J	0		36.4	J	53.9	B
		Month 25		Month 26		Month 27		Month 28		Month 29		Month 29		Month 29		Month 30		Month 30		Month 31		Month 32		Month 33		Month 34		Month 35		Month 36	

Note: 0 sample indicates a non-detect analyte value

Table 12.1.3 (cont.)

B-3 Bioreactor Analytical Summary
May 2009 - April 2010

Q12		B3 Sump Analytical Data (cont.)																											
Sump ID		**B3 T2-1**																											
Sample Date		**5/19/2009**		**6/17/2009**		**7/21/2009**		**8/18/2009**		**9/16/2009**		**9/24/2009**		**10/7/2009**		**10/19/2009**		**11/18/2009**		**12/15/2009**		**1/19/2010**		**2/23/2010**		**3/23/2010**		**4/20/2010**	
Compound	**Units**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**
Dissolved Organic Carbon	mg/L	4.7		2.4	B	1.8		2.0		15.8		9.8		106		49.7		13.8		8.6		6.2		10.1		5.8		5.6	
Total Organic Carbon	mg/L	5.2		3.0		3.6		2.2		19.1	B	12.8		99.3		48.9		13.9		10.1		9.9		9.1		5.9		6.7	
Methane	µg/L	556		265		1,380		501				6,330		1,170		2,580		4,920		218		0		305		0		0	
Ethene	µg/L	0		0		0		0				2.8	J	0		0		0		0		0		0		0		0	
Ethane	µg/L	0		0		0		0				0		0		0		0		0		0		0		0		0	
Carbon Dioxide	µg/L	161,000		207,000		290,000		170,000				300,000		203,000		127,000		83,900		42,000		42,300		30,900		172,000		101,000	
Alkalinity, Total (as CACO3)	mg/L	373		358		443		391		505		455		530		560		386		317		346		297		408		388	
Nitrate/Nitrite	mg/L	2.7		0.031	J	0.038	J	0.04	J	0.035	J	0		3.6		0.060	B J	0		0.33		0.482	B	0.033	J	0.082	J	1.9	
Sulfate	mg/L	26		34.9		29		27.1		67.4		29.2		38.1		16		1.2		6.1		16.9		7.8		267		76.4	
Chloride	mg/L	15		15.3		14.3		15.9		22.2		24.9		10.7		13.5		14.4		13.4		12.4		12.6		16.3		15.2	
Ferrous Iron	mg/L	2.3		2.0		1.6		1.8		2.3		1.3		0		4.9		3.8		0.24	J	0.21	J	0.99	J	0.67	J	0.83	J
Manganese	µg/L	398		187		105		87.3		147		202		299		1,500		1,250		193		216		405		502		673	
Hydrogen	nM/L	2.3		2.4		2.3		2.2				3.7				2.8		6.3		2.3		1.1		4.0		2.0		3.4	
Total Dissolved Solids	mg/L	511		454		485		454		704		573		731		792		499		391		400		386		836		531	
Benzene	µg/L	0		0		0		0		0.67		0.52		0.30	J	0		0		0		0		0		0		0	
Bromodichloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromoform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Chloroform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0.15	J	0	
Dibromochloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichlorodifluoromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, 1,1-	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, cis-1,2-	µg/L	36		41		57		44		12		4.3		3		6.9		5.9		4.4		0.98	J	1.7		8.1		21	
Dichloroethene, trans-1,2-	µg/L	0.66		1.7		6		5.0		3.5		0.84		0		0		0		0		0		0		0		0.45	J
Methylene chloride	µg/L	0		0		0		0		0		0.44	J	0		0		0		0		0		0		0		0	
Naphthalene	µg/L	0		0		0		0		0		0.44		1		0.55	B	0		0		0		0		0		0	
Tetrachloroethene	µg/L	0		0.23	J	0.39	J	0.47	J	0		0		0		0.44	J	0.43	J	1.2	J	0.26	J	0.20	J	1.4		0.95	J
Toluene	µg/L	0		0		0.26	J	0		0.28	J	0.28	J	0.24	J	0.23	J	0.27	J	0		0		0.33	J	0		0	
Trichloroethene	µg/L	0		2.9		3.3		2.9		0		0		0.38	J	1.1		1.4		2.3		0.39	J	0.32	J	5.0		9	
Vinyl chloride	µg/L	9.8		7.1		22		17		110		32		25		14		3.1		1.5		0		2.2		0.25	J	1.0	J
Arsenic	µg/L	0		0		0		0		0		0		7.0		17.1		9.2		0		0		0		0		2.6	J
Barium	µg/L	104		130		62.6		60.3		88.3		82.5		156		254		138		108		86.7		94.3		187		160	
Cadmium	µg/L	0		0		0.52	J	0		0		0		0		0		0		0		0		0		0		0	
Chromium	µg/L	0		0		0		0		0		0		0		2.1	J	0		0		0		0		0		0	
Copper	µg/L	0		0		0		11.4		2.9	J	0		5		4.7	J	48.9		2.4	J	1.8	J	0		17.1	B	13.2	B
Lead	µg/L	0		2.7	J	0		0		0		0		0		0		0		0		0		0		0		0	
Mercury	µg/L	0		0		0.082	J	0		0		0		0.29		0		0.18	BJ	0		0.17	BJ	0		0		0	
Nickel	µg/L	0.43	J	0		0		2.8	J	3.2	J	2.1	J	6.4		6.0		1.3	J	1.5	J	0		0		1.7	J	1.9	J
Zinc	µg/L	0		43.8	J	58		21.8	BJ	17.5	J	26.3	J	23	J	28.1	J	35	J	16	J	6.2	J	0		93.1		61.5	B
		Month 25		Month 26		Month 27		Month 28		Month 29		Month 29		Month 30		Month 30		Month 31		Month 32		Month 33		Month 34		Month 35		Month 36	

Note: 0 sample indicates a non-detect analyte value

Sump ID		B3 T2-2																B3-T3-1								B3-T3-2	
Sample Date		**9/23/2009**		**10/7/2009**		**10/19/2009**		**11/18/2009**		**12/15/2009**		**1/19/2010**		**2/23/2010**		**3/23/2010**		**4/20/2010**		**9/30/2009**		**10/7/2009**		**10/19/2009**		**11/17/2009**		**11/17/2009**	
Compound	**Units**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**
Dissolved Organic Carbon	mg/L	34.3		120		45.3		23.4		32.2		26.6		23.2		21.7		18.4				37.7		49.4		26.7		21.4	
Total Organic Carbon	mg/L	42.2		133		48.8		48.8		37.1		19.6		22.3		19.4		19.9				59.5		47.5		30		30.4	
Methane	µg/L	10,200		11,900		9,600		22,000		31,800		24,500		12,600		0		48.9				1,040		3,240		9,360		1,420	
Ethene	µg/L	0		0		0		1.5	J	7.7		1.2	J	0		0		0				0		0		0		0	
Ethane	µg/L	0		0		0		0		0		0		0		0		0				0		0		0		0	
Carbon Dioxide	µg/L	529,000		768,000		133,000		636,000		696,000		377,000		221,000		367,000		345,000				90,000		174,000		193,000		60,300	
Alkalinity, Total (as CACO3)	mg/L	636		815		421		681		556		435		491		466		549				332		605		602		409	
Nitrate/Nitrite	mg/L	0		0		0.42	B	0		0		0		0.032	J	0.043	J	0.26				1.9		0.060	B J	0		0	
Sulfate	mg/L	1.4		3.7		8.8		0.99	J	4.1		15.4		1.2		188		56.3				4.1		0.99	J	1.7		0.77	J
Chloride	mg/L	21.9		11.8		14.2		15.3		14.8		14		13.7		12.9		12.3				2.8		6.8		13.5		13.6	
Ferrous Iron	mg/L	8		7.6		4.7		9.0		10.1		7.6		5.0		1.9		1.4				0.82	J	10.2		7.1		1.5	
Manganese	µg/L	1,050		1,130		839		1,100		980		756		958		670		779				489		845		1,960		1,370	
Hydrogen	nM/L																	5.3						2.0		2.6			
Total Dissolved Solids	mg/L	801		1,010		584		830		662		543		591		846		712				437		750		737		513	
Benzene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromodichloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromoform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Chloroform	µg/L	0		0		0		0		0		0		0		0		0.090	J	0		0		0		0		0	
Dibromochloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichlorodifluoromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, 1,1-	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, cis-1,2-	µg/L	1.4	B	1.8		70		4.3		3		0.22	J	0.30	J	0.18	J	0.47	J	0.33	J	0		1.2		0.72	J	1.2	
Dichloroethene, trans-1,2-	µg/L	0.47	J	0		0		0.57	J	0.47	J	0		0.21	J	0		0		0		0		0		0		0	
Methylene chloride	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Naphthalene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Tetrachloroethene	µg/L	0		0		0.18	J	0.48	J	1.6		0.25	J	0		0		0		0		0		0.24	J	0		0	
Toluene	µg/L	0.24	J	0.39	J	0.33	J	0.36	J	0.88	J	1.3		0.61	J	0		0		0.25	J	0		0		0		0	
Trichloroethene	µg/L	0		0		0.32	J	1.5		3.5		0.26	J	0		0.30	J	0.50	J	0		0		0.51	J	0.20	J	0.37	J
Vinyl chloride	µg/L	29		19		16		80		6.2		0.77	J	1	J	0		0		0		0		0		0.53	J	0	
Arsenic	µg/L	10.8		13.9		17.3		16.8		10.9		13.5		0		14.3		17.1				6.8		16.7		18.7		9.7	
Barium	µg/L	222		261		243		254		184		172		173		459		390				123		248		193		120	
Cadmium	µg/L	0		0		0		0		0		0		0		0		0				0		0		0		0	
Chromium	µg/L	0		0		1.5	J	0		0		0		0		0		0				1.8	J	2.1	J	0		0	
Copper	µg/L	0		2.7	J	4.2	J	46.6		0		1.2	J	0		8	B	23.6	B			8.1		5.0		49.2	B	50	B
Lead	µg/L	0		0		0		0		0		0		0		0		2.8	J			4.3	J	0		1.7	J	0	
Mercury	µg/L	0		0.15	J	0		0.17	BJ	0		0.17	BJ	0		0		0				0.14	J	0		0		0.12	J
Nickel	µg/L	3.3	J	4.6	J	4.0	J	3.3	J	3.5	J	1	J	0.45	J	1.7	J	3.0	J			6.8		4.1	J	5.6		4.9	J
Zinc	µg/L	18.2	J	16.4	J	18.3	J	33.5	J	19.8	J	7.3	J	313		62.5		67.8	B			27	J	23.8	J	42.4	J	67.5	
		Month 29		Month 30		Month 30		Month 31		Month 32		Month 33		Month 34		Month 35		Month 36		Month 29		Month 30		Month 30		Month 31		Month 31	

Note: 0 sample indicates a non-detect analyte value

Sump ID		B3-T4-1		B3-T5-1												B3-T5-2				B3-T6-1						B3-T6-2							
Sample Date		**11/17/2009**		**9/16/2009**		**9/24/2009**		**9/30/2009**		**10/7/2009**		**10/20/2009**		**11/17/2009**		**10/7/2009**		**11/17/2009**		**9/24/2009**		**10/20/2009**		**11/17/2009**		**9/24/2009**		**10/20/2009**		**11/17/2009**		**12/15/2009**	
Compound	**Units**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**
Dissolved Organic Carbon	mg/L	9.1		4.5		1.5				5.6		0.92		2.7		60.9		12.5		0.48	J	1.5		2.4		4.8		6.6		2.5					
Total Organic Carbon	mg/L	17.9		4.7	B	1.5				6.6		3.1		3.8		93.2		16.4		0.67		1.9		0.93		5.6		7.1		2.3					
Methane	µg/L	0				25.6				14.5		4.7		9.2		1,680		1,930		10.6		0.70	J	0		213		230		47					
Ethene	µg/L	0				0				0		0		0		0		0		0		0		0		0		0		0					
Ethane	µg/L	0				0				0		0		0		0		0		0		0		0		0		0		0					
Carbon Dioxide	µg/L	26,800				46,300				60,600		20,800		19,100		376,000		61,600		20,800		16,400		16,900		47,400		58,500		22,300					
Alkalinity, Total (as CACO3)	mg/L	339		310		289				292		264		236		673		406		236		234		248		262		290		272					
Nitrate/Nitrite	mg/L	0.030	J	0.97		0.87				0.46		0.78		1.0		0		0		1.2		1.1		1.1		0.042	J	0		0.040	J				
Sulfate	mg/L	1.0		17.6		16.8				15.2		17.1		19.8		5.2		0.76	J	14		17.7		19.2		12.9		12.4		17					
Chloride	mg/L	13.8		11.8		12.2				11.7		12.5		13.6		5.9		14		11.5		12.8		13.6		12.9		12.4		13.2					
Ferrous Iron	mg/L	0.95	J	0		0				0		0		0.25	J	4.8		3.5		0		0		0		1.2		2.0		0.29	J				
Manganese	µg/L	826		38.3		45.3				69.4		30.1		1.5	J	1,050		1,530		2.0	J	2.0	J	0		101		171		102					
Hydrogen	nM/L	6.9										0.82		1.1								0.85		1.3								5.7			
Total Dissolved Solids	mg/L	401		355		366				303		370		302		766		493		332		370		313		351		421		319					
Benzene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0					
Bromodichloromethane	µg/L	0		0		0		0		0		0		0		0.40		0		0		0		0		0		0		0					
Bromoform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0					
Chloroform	µg/L	0		0		0.15	J	0		0		0.13	J	0		0		0		0.15	J	0.15	J	0.079	J	0.079	J	0.090	J	0					
Dibromochloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0					
Dichlorodifluoromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0					
Dichloroethene, 1,1-	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0					
Dichloroethene, cis-1,2-	µg/L	0.20	J	0.72	J	0.82	BJ	0.39	J	0		0.52	J	0		0		0.45	J	0.28	BJ	0.25	J	0		0.43	BJ	0.41	J	0					
Dichloroethene, trans-1,2-	µg/L	0		0.78		0		0		0		0		0		0		0		0		0		0		0		0		0					
Methylene chloride	µg/L	0		0		0		0		0		0		0		0		0		0.40	J	0		0		0.45	J	0		0					
Naphthalene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0					
Tetrachloroethene	µg/L	0		0		0		0.46	J	0		0		0		0		0.21	J	0.15	J	0		0		0		0.16	J	0					
Toluene	µg/L	0		0		0		0		0		0		0		0		0.42	J	0		0		0		0		0		0					
Trichloroethene	µg/L	0.30	J	0		0		0		0		0.22	J	0		0		0.36	J	0		0.16	J	0		0		0		0					
Vinyl chloride	µg/L	0		3.2		0.87	J	0		0		0		0		0		0		0.40	J	0		0		0.89	J	0		0					
Arsenic	µg/L	5.7		0		0				0		0		0		9.8		20.2		0		0		0		3.9	J	2.9	J	0					
Barium	µg/L	125		87.1		70.6				65.3		57.6		57		178		247		51.6		32.9		37.2		88.2		98.4		85					
Cadmium	µg/L	0		0		0				0		0		0		0		0		0		0		0		0		0		0					
Chromium	µg/L	0		0		0				0		0		0		0		0		0		0		0		0		0		0					
Copper	µg/L	51.6	B	5		0				0		2	J	48.9	B	7.4		49.8	B	0		2.4	J	48.8	B	1.6	J	2.1	J	48.3	B				
Lead	µg/L	0		4.8	J	0				0		0		0		18.6		1.6	J	1.6	J	0		0		2.3	J	0		0					
Mercury	µg/L	0		0		0				0.12	J	0		0		0.15	J	0		0		0		0		0		0.068	J	0					
Nickel	µg/L	3.6	J	0.91	J	0				0		0		0.70	J	3.5	J	4.8	J	0		5.1		4.8	J	0		0.51	J	0.94	J				
Zinc	µg/L	42	J	9.1	J	15.9	J			11.8	J	5.2	J	43.5	J	19.2	J	52.7		59.9		349		269		15.4	J	4.7	J	42.5	J				
		Month 31		Month 29		Month 29		Month 29		Month 30		Month 30		Month 31		Month 30		Month 31		Month 29		Month 30		Month 31		Month 29		Month 30		Month 31		Month 32			

Note: 0 sample indicates a non-detect analyte value

Table 12.2.2

SWMU B-3 Westbay Monitoring Well Upper Saturated Zone (LGR03B) Analytical Result Summary
May 2009 - April 2010

Q12	CS-WB05-LGR03B										CS-WB06-LGR03B											
Date	**5/18/09**	**6/15/09**	**7/20/09**	**10/26/09**	**11/16/09**	**12/14/09**	**1/20/10**	**2/22/10**	**3/22/10**	**4/19/10**	**5/19/09**	**6/15/09**	**7/20/09**	**8/17/09**	**10/5/09**	**10/22/09**	**11/16/09**	**12/14/09**	**1/27/10**	**2/22/10**	**3/22/10**	**4/19/10**
PCE (µg/L)	0	0	0	0.27	6.5	0.50	7.0	11	0.78	0.53	79	120	150	190	190	180	170	140	120	150	190	52
TCE (µg/L)	0.2	0.23	0.22	4.2	26	41	26	51	59	17	100	130	170	200	190	200	170	170	160	180	200	81
cis-1,2-DCE (µg/L)	77	85	98	100	120	120	130	110	140	100	180	180	230	200	260	250	270	270	230	260	220	160
trans-1,2-DCE (µg/L)	9.3	11	26	5.4	9.1	8.3	10	7.0	15	9.3	3.5	2.3	26	11	0	0.38	3.5	2.4	2.3	2.0	4.8	0.90
Vinyl Chloride (µg/L)	0	0	0	0	0.38	0	0.24	0	0.63	0.48	0	0	0	0	0	0	0	0	0	0	0	0
Ethene (µg/L)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PCE (nM/L)	0.000	0.000	0.000	1.628	39.197	3.015	42.212	66.333	4.704	3.196	476.391	723.633	904.541	1145.752	1145.752	1085.449	1025.146	844.238	723.633	904.541	1145.752	313.574
TCE (nM/L)	1.522	1.751	1.674	31.966	197.884	312.048	197.884	388.157	449.045	129.386	761.093	989.421	1293.858	1522.186	1446.077	1522.186	1293.858	1293.858	1217.749	1369.967	1522.186	616.485
cis-1,2-DCE (nM/L)	794.224	876.741	1010.830	1031.460	1237.751	1237.751	1340.897	1134.605	1444.043	1031.460	1856.627	1856.627	2372.357	2062.919	2681.795	2578.649	2784.941	2784.941	2372.357	2681.795	2269.211	1650.335
trans-1,2-DCE (nM/L)	95.926	113.461	268.179	55.699	93.863	85.611	103.146	72.202	154.719	95.926	36.101	23.724	268.179	113.461	0.000	3.920	36.101	24.755	23.724	20.629	49.510	9.283
Vinyl Chloride (nM/L)	0.000	0.000	0.000	0.000	6.079	0.000	3.839	0.000	10.078	7.679	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ethene (nM/L)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Molar Conc. (nM/L)	891.67	991.95	1,280.68	1,120.75	1,574.77	1,638.43	1,687.98	1,661.30	2,062.59	1,267.65	3,130.21	3,593.40	4,838.94	4,844.32	5,273.62	5,190.20	5,140.05	4,947.79	4,337.46	4,976.93	4,986.66	2,589.68
% moles PCE	0.000%	0.000%	0.000%	0.145%	2.489%	0.184%	2.501%	3.993%	0.228%	0.252%	15.219%	20.138%	18.693%	23.651%	21.726%	20.913%	19.944%	17.063%	16.683%	18.175%	22.976%	12.109%
% moles TCE	0.171%	0.176%	0.131%	2.852%	12.566%	19.046%	11.723%	23.365%	21.771%	10.207%	24.314%	27.534%	26.738%	31.422%	27.421%	29.328%	25.172%	26.150%	28.075%	27.526%	30.525%	23.805%
% moles cis-1,2-DCE	89.071%	88.385%	78.929%	92.033%	78.599%	75.545%	79.438%	68.296%	70.011%	81.368%	59.313%	51.668%	49.026%	42.584%	50.853%	49.683%	54.181%	56.287%	54.695%	53.884%	45.506%	63.727%
% moles trans-1,2-DCE	10.758%	11.438%	20.940%	4.970%	5.960%	5.225%	6.111%	4.346%	7.501%	7.567%	1.153%	0.660%	5.542%	2.342%	0.000%	0.076%	0.702%	0.500%	0.547%	0.414%	0.993%	0.358%
% moles Vinyl Chloride	0.000%	0.000%	0.000%	0.000%	0.386%	0.000%	0.227%	0.000%	0.489%	0.606%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
% moles Ethene	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
	Month 25	Month 26	Month 27	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35	Month 36	Month 25	Month 26	Month 27	Month 28	Month 30	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35	Month 36

	CS-WB07-LGR03B										CS-WB08-LGR03B									
Date	**5/18/09**	**6/16/09**	**7/20/09**	**8/17/09**	**10/22/09**	**11/16/09**	**12/14/09**	**1/25/10**	**2/22/10**	**3/22/10**	**4/19/10**	**5/18/09**	**6/15/09**	**9/24/09**	**10/21/09**	**11/16/09**	**12/14/09**	**1/26/10**	**2/22/10**	**3/22/10**	**4/19/10**
PCE (µg/L)	1.2	0	0.29	0	7.1	0.79	0	2.4	1.2	0	0	60	68	73	180	130	140	19	62	73	14
TCE (µg/L)	4.1	2	2.6	1.9	5.9	4.4	3.0	4.4	4.4	2.4	1.5	70	72	57	210	170	160	19	65	66	16
cis-1,2-DCE (µg/L)	21	14	22	14	26	30	31	23	22	29	33	90	86	49	200	190	180	49	100	89	45
trans-1,2-DCE (µg/L)	0.81	0.73	1.7	1.4	0	0.94	0.61	0.32	0.44	0.67	0.59	3.4	1.6	2.2	0	2.5	1.4	0.40	1.3	1.8	0.34
Vinyl Chloride (µg/L)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ethene (µg/L)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PCE (nM/L)	7.236	0.000	1.749	0.000	42.815	4.764	0.000	14.473	7.236	0.000	0.000	361.816	410.058	440.210	1085.449	783.935	844.238	114.575	373.877	440.210	84.424
TCE (nM/L)	31.205	15.222	19.788	14.461	44.904	33.488	22.833	33.488	33.488	18.266	11.416	532.765	547.987	433.823	1598.295	1293.858	1217.749	144.608	494.710	502.321	121.775
cis-1,2-DCE (nM/L)	216.606	144.404	226.921	144.404	268.179	309.438	319.752	237.236	226.921	299.123	340.382	928.314	887.055	505.415	2062.919	1959.773	1856.627	505.415	1031.460	917.999	464.157
trans-1,2-DCE (nM/L)	8.355	7.530	17.535	14.440	0.000	9.696	6.292	3.301	4.538	6.911	6.086	35.070	16.503	22.692	0.000	25.786	14.440	4.126	13.409	18.566	3.507
Vinyl Chloride (nM/L)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ethene (nM/L)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Molar Conc. (nM/L)	263.40	167.16	265.99	173.31	355.90	357.39	348.88	288.50	272.18	324.30	357.88	1,857.96	1,861.60	1,402.14	4,746.66	4,063.35	3,933.05	768.72	1,913.46	1,879.10	673.86
% moles PCE	2.747%	0.000%	0.657%	0.000%	12.030%	1.333%	0.000%	5.017%	2.659%	0.000%	0.000%	19.474%	22.027%	31.396%	22.868%	19.293%	21.465%	14.905%	19.539%	23.427%	12.528%
% moles TCE	11.847%	9.106%	7.439%	8.344%	12.617%	9.370%	6.545%	11.608%	12.303%	5.633%	3.190%	28.675%	29.436%	30.940%	33.672%	31.842%	30.962%	18.811%	25.854%	26.732%	18.071%
% moles cis-1,2-DCE	82.234%	86.389%	85.311%	83.324%	75.353%	86.584%	91.652%	82.232%	83.370%	92.237%	95.110%	49.964%	47.650%	36.046%	43.460%	48.230%	47.206%	65.747%	53.906%	48.853%	68.880%
% moles trans-1,2-DCE	3.172%	4.505%	6.592%	8.332%	0.000%	2.713%	1.803%	1.144%	1.667%	2.131%	1.700%	1.888%	0.887%	1.618%	0.000%	0.635%	0.367%	0.537%	0.701%	0.988%	0.520%
% moles Vinyl Chloride	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
% moles Ethene	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
	Month 25	Month 26	Month 27	Month 28	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35	Month 36	Month 25	Month 26	Month 29	Month 30	Month 31	Month 32	Month 32	Month 34	Month 35	Month 36

Note: 0 sample indicates a non-detect analyte value

Table 12.2.3a

SWMU B-3 Bioreactor Multi-port Well CS-WB05
May 2009 - April 2010

Q12																																					
Well ID		**CS-WB05-LGR01**								**CS-WB05-LGR02**						**CS-WB05-LGR03A**						**CS-WB05-LGR03B**																	
Sample Date		**7/29/2009**		**10/15/2009**		**1/20/2010**		**4/22/2010**		**11/2/2009**		**1/20/2010**		**4/22/2010**		**10/15/2009**		**1/20/2010**		**4/22/2010**		**5/18/2009**		**6/15/2009**		**7/20/2009**		**10/26/2009**		**11/16/2009**		**12/14/2009**		**1/20/2010**		**2/22/2010**		**3/22/2010**		**4/19/2010**	
Compound	**Units**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**
Dissolved Organic Carbon	mg/L	0		2.0		0.23	J	0.49	J	0.84		0.30	J	0.56		2.3		0.18	J	0.47	J	1.8		0.83	B	1.2		0.65		10.6		0.59		0.14	J	0.54		0.72		0.85	
Total Organic Carbon	mg/L	1.3		1.4		0.77		0.40	J	1.9		1		1.0		1.9		0.91		1.5		1.5		0.80		1.3		0.45	J	2.5		1.3		0.86		0.57		0.93		0.87	
Methane	µg/L	4.3		12.5		0.8	J	2.0		296		176		506		188		644		375		297		1010		1,110		1,960		285		928		288		507		73		111	
Ethene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Ethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Carbon Dioxide	µg/L	49,900		11,600		11,800		36,500		29,200		12,700		72,800		13,000		42,900		37,200		9,380		23,000		29,000		55,700		10,900		40,200		20,400		45,700		8,400		12,900	
Alkalinity, Total (as CACO3)	mg/L	389		378		370		392		325		333		329		304		289		321		322		318		332		317		324		308		327		302		328		308	
Nitrate/Nitrite	mg/L	0		0		0		0		0.08	BJ	0		0.066	J	0.29		0.039	J	0.064	J	0		0	J	0		0.069	BJ	0		0		0		0		0		0	
Sulfate	mg/L	99.6		92		94.4		97.3		85.6		80.4		88.5		37.5		42.5		41.9		47.6		48.7		47		47.6		47.1		43.7		44.1		40.4		43.3		42	
Chloride	mg/L	13.3		14		13.8		13.9		12.8		11.7		12.1		10.4		10.9		11.1		12.3		12.3		12		12.5		12.2		11.3		11.1		10.8		11.4		11	
Ferrous Iron	mg/L	0		0		0		0		0.35	J	0		0		0		0		0		0		0.24	J	0.17	J	0		0.27	J	0		0		0		0		0.17	J
Manganese	µg/L	2.5	J	3.4	J	1.8	J	0		0		0		0		1.3	J	0		0		0		1.5	J	6.0		0		0		0		1.3	J	0		0		0	
Hydrogen	nM																																								
Total Dissolved Solids	mg/L	494		568		549		562		464		480		513		394		398		404		415		412		382		410		390		366		405		413		390		366	
Benzene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromodichloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromoform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Chloroform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dibromochloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichlorodifluoromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, 1,1-	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, cis-1,2-	µg/L	1.0	J	1.9		1.5		1.5		26		11		28		56		74		85		77		85		98		100		120		120		130		110		140		100	
Dichloroethene, trans-1,2-	µg/L	0.31	J	0		0		0		0		2.0		5.2		0		4		6.3		9.3		11		26		5.4		9.1		8.3		10		7.0		15		9.3	
Methylene chloride	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Naphthalene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0.52		0		0		0		0		0		0	
Tetrachloroethene	µg/L	0.28	BJ	1.2	J	0		0		0		0		0		25		11		2.6		0		0		0		0.27	J	6.5		0.50	J	7.0		11		0.78	J	0.53	J
Toluene	µg/L	0.18	J	0		0		0		0		0		0		0		0		0		0		0		0.2	J	0		0		0		0		0		0		0	
Trichloroethene	µg/L	1.3		2.3		2.2		2.3		0.99	BJ	0.35	J	0.75	J	46		22		18		0.20	J	0.23	J	0.22	J	4.2		26		41		26		51		59		17	
Vinyl chloride	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0.38	J	0		0.24	J	0		0.63	J	0.48	J
Arsenic	µg/L	0		0		0		0		25.4		0		0		0		0		0		0		0		0		4.9	J	0		2.5	J	0		0		0		0	
Barium	µg/L	30.1		32.6		34.5		31.6		34.2		45.1		50.3		32.1		34.5		28.6		30.4		37.5		31.9		28.9		34		30.1		34.1		29.3		32.3		30.6	
Cadmium	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Chromium	µg/L	20		4.2	J	3.5	J	5.8		0		2.0	J	2.8	J	2	J	2.1	J	0		16.2		5.8		5.1		0		0		0		1.4	J	1.4	J	1.9	J	0	
Copper	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		48.6	B	1.6	J	0		0		13.5	B	11.5	B
Lead	µg/L	0		0		0		0		0		0		0		0		0		0		0		2.0	J	0		0		0		0		0		0		0		0	
Mercury	µg/L	0.089	J	0		0.09	J	0		0.065	BJ	0.078	J	0		0		0.060	J	0		0		0		0.07	J	0.098	B J	0		0		0.083	J	0		0.067	J	0	
Nickel	µg/L	13.8		6.9		4.5	J	4.8	J	1.9	J	3.9	J	5.2		4.0	J	4.1	J	2.7	J	7.8		1.7	J	1.4	J	3.0	J	3.7	J	4.7	J	3.2	J	2.4	J	2.9	J	3.2	J
Zinc	µg/L	6.4	J	18.4	J	29.8	J	5.3	J	3.8	J	47.2	J	0		12.2	J	24.6	J	4.8	J	0		10.9	J	23.6	J	19.4	J	55.8		22	J	15.7	J	0		40	J	53.8	B
		Q9- Month 27		Q10- Month 30		Q11- Month 33		Q12- Month 36		Q10- Month 31		Q11- Month 33		Q12- Month 36		Q10- Month 30		Q11- Month 33		Q12- Month 36		Quarter 9						Quarter 10		Quarter 11						Quarter 12					

Note: 0 sample value indicates a non-detect analyte value

Well ID		CS-WB05-LGR04A								CS-WB05-LGR04B								CS-WB05-BS-01								CS-WB05-CC-01								CS-WB05-CC-02							
Sample Date		**7/28/2009**		**10/26/2009**		**1/20/2010**		**4/22/2010**		**7/28/2009**		**10/26/2009**		**1/21/2010**		**4/21/2010**		**7/28/2009**		**10/26/2009**		**1/21/2010**		**4/21/2010**		**7/27/2009**		**10/27/2009**		**1/21/2010**		**4/21/2010**		**7/27/2009**		**10/27/2009**		**1/21/2010**		**4/21/2010**	
Compound	**Units**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**
Dissolved Organic Carbon	mg/L	0.35	J	1.4		0.49	J	0.66		1.0		1.7		0.75		1.2		0		0.78		0.24	J	0.40	J	0		1.1		0		0.37	J	0.30	J	1.3		0.19	J	0.39	J
Total Organic Carbon	mg/L	1.3		1.0		1.3		1.6		0.94		1.5		2.9		1.3		0		1.2		0.56		1.4		0		0.98		0.54		1.1		0		0.97		0.74		0.62	
Methane	µg/L	1,210		1,450		5,590		470		1,230		5,980		3,000		6,240		23.4		103		54.9		34.7		3.1		8.6		5.3		1.3		34.9		14		5.0		18.9	
Ethene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Ethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Carbon Dioxide	µg/L	11,000		50,100		64,200		10,500		22,700		158,000		45,500		82,300		24,100		21,800		16,300		10,000		24,300		30,300		53,500		8,430		25,800		22,400		9,680		34,500	
Alkalinity, Total (as CACO3)	mg/L	355		328		321		331		384		347		315		351		282		285		290		297		284		266		283		289		285		271		276		288	
Nitrate/Nitrite	mg/L	0.11		0.047	BJ	0.21		0.066	J	0.11		0.048	BJ	0		0.085	J	0		0.048	BJ	0		0.055	J	0		0.058	BJ	0		0.049	J	0.078	J	0.050	BJ	0		0.055	J
Sulfate	mg/L	21		22.4		18.9		17.1		5.1		6.6		6.8		4.9		33.9		32.3		30.5		27.9		88.8		84.8		79.1		81.4		92.1		90.2		89.9		90.7	
Chloride	mg/L	11.6		12.7		11.9		11.9		12.4		13.9		12.6		12.4		11.8		12.5		11.7		11.5		17		18.3		17.2		17.2		17.7		19.5		17.9		17.8	
Ferrous Iron	mg/L	0.17	J	0		0		0		0.16	J	5.2		4.5		3.6		0		0		0		0		0		0		0		0.24	J	0.16	J	0.26	J	0		0.31	J
Manganese	µg/L	10.5		7.4		10.4		8.4		41.5		49.7		51.6		56		0		0		0		0		0		0		0		0		0		0		0		0		0	
Hydrogen	nM																																									
Hydrogen Sulfide																																										
Total Dissolved Solids	mg/L	394		366		367		385		376		391		360		344		361		337		335		336		415		410		416		419		566		441		444		441	
Benzene	µg/L	0.18	J	0		0		0		0.22	J	0.16	J	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromodichloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromoform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Chloroform	µg/L	0		0		0		0		0.11	J	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dibromochloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichlorodifluoromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, 1,1-	µg/L	0.58	J	0.44	BJ	0		0		1.3		1.6	B	0.32	J	0.54	J	0		0.52	BJ	0		0		0		0		0		0		0.63	J	0.47	BJ	0.38	J	0	
Dichloroethene, cis-1,2-	µg/L	570		490		400		570		640		860		630		820		48		59		48		59		4.8		5.6		3.2		4.3		63		71		69		63	
Dichloroethene, trans-1,2-	µg/L	80		5.6		4.8		7.7		61		1.5		0		5.2		7.3		0.3	J	0		0.39	J	0.84		0		0		0.26	J	9.0		2.6		3.1		2.5	
Methylene chloride	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Naphthalene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Tetrachloroethene	µg/L	0.34	BJ	34		90		55		160		64		150		51		0.19	BJ	1.5		0		0		4.5		0.31	J	0.84	J	0.92	J	1.1	BJ	0.42	J	0.26	J	0.22	J
Toluene	µg/L	0.26	J	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Trichloroethene	µg/L	110		140		190		250		160		240		270		160		2.5		8.8		3.9		1.5		14		19		11		9.2		130		92		81		52	
Vinyl chloride	µg/L	0.62	J	0.66	J	2.4		28		2.6		2.3		0.95	J	3.1		0		0		0.84	J	0.99	J	0		0		0		0		0		0		6.5		10		4.8	
Arsenic	µg/L	0		3.8	J	0		0		21.6		60.1		27.1		54.1		0		3.1	J	0		0		0		4.5	J	0		0		0		4.9	J	0		0	
Barium	µg/L	35.1		32.1		36.5		35.9		21.9		21.9		25		22.6		26.2		26.3		30.2		26.3		19.9		21.8		23.6		26.1		20.5		19.3		22.7		21.4	
Cadmium	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Chromium	µg/L	27		0		0		0		2.3	J	0		0		0		3	J	0		0		1.9	J	5.6		0		0		1.7	J	2.3	J	0		0		1.6	J
Copper	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Lead	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Mercury	µg/L	0.068	J	0.11	BJ	0.081	J	0		0		0.14	BJ	0.069	J	0.071	J	0		0.13	BJ	0.073	J	0		0.11	J	0.11	BJ	0.076	J	0		0.12	J	0.11	BJ	0.065	J	0	
Nickel	µg/L	16.8		1.8	J	1.2	J	1.6	J	73.2		75.2		73.7		83.6		0.78	J	0.54	J	0		0		5.6		2.6	J	2.1	J	2.8	J	0.59	J	0		0		0	
Zinc	µg/L	21.3	J	9.5	J	17.8	J	8.7	J	8.0	J	29.3	J	38.2	J	11.6	J	9.2	J	16.3	J	24	J	2.9	J	48.8	J	19.9	J	13.2	J	13.7	J	22.5	J	10.1	J	12.8	J	7.9	J
		Q9- Month 27		Q10- Month 30		Q11- Month 33		Q12- Month 36		Q9- Month 27		Q10- Month 30		Q11- Month 33		Q12- Month 36		Q9- Month 27		Q10- Month 30		Q11- Month 33		Q12- Month 36		Q9- Month 27		Q10- Month 30		Q11- Month 33		Q12- Month 36		Q9- Month 27		Q10- Month 30		Q11- Month 33		Q12- Month 36	

Table 12.2.3b

SWMU B-3 Bioreactor Multi-port Well CS-WB06
May 2009 - April 2010

Q12																																			
Well ID		**CS-WB06-UGR01**										**CS-WB06-LGR01**										**CS-WB06-LGR02**										**CS-WB06-LGR03A**					
Sample Date		**7/22/2009**		**10/5/2009**		**10/15/2009**		**1/27/2010**		**4/29/2010**		**7/22/2009**		**10/5/2009**		**10/15/2009**		**1/27/2010**		**4/29/2010**		**7/22/2009**		**10/5/2009**		**10/15/2009**		**1/27/2010**		**4/29/2010**		**7/22/2009**		**10/5/2009**		**10/22/2009**		**1/27/2010**		**4/29/2010**	
Compound	**Units**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**
Dissolved Organic Carbon	mg/L	1.9	B	6.3	B	2.5		1.3		1.3		1.6	B	0.82	B	0.54		0.79		0.91		0.48	BJ	0		1.0		0.23	J	0.59		0.17	BJ	1.7	B	2.1		0.57		0.57	
Total Organic Carbon	mg/L	2.1	B	0		2.8		1.5		0.65		1.2	B	10.4		1.2		1.1		0.32	J	1.2	B	1.8		0.56		0.93		0		0.17	BJ	1.4		0.50		0.52		0	
Methane	µg/L	913		57.8		24.9		14.5		0.70	J	5		0		0		0		0		0		0		0.50	J	2.2		0.90	J	0		0		1.4		0			
Ethene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Ethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Carbon Dioxide	µg/L	123,000		31,000		16,900		16,200		54,600		59,400		64,000		13,300		11,600		43,800		7,950		14,400		16,200		36,900		30,800		27,300		48,200		8,990		14,400		7,730	
Alkalinity, Total (as CACO3)	mg/L	462		313		305		274		320		353		341		325		336		332		285		295		302		293		295		284		288		283		284		301	
Nitrate/Nitrite	mg/L	0		0.17	B	0.053	J	0.066	J	1.4		0.41		0.44	B	0.45		0.13		0.48		0.14		0.028	B J	0		0		0.052	J	0.083	J	0.24	B	0.23	B	0		0.057	J
Sulfate	mg/L	4		16.9		18.8		22.6		21.3		17.6		16.5		16.5		24.5		20		24.7		24.1		24.5		25.7		24.6		17.5		16.4		17.3		19		17.7	
Chloride	mg/L	15.6		13		13		13.7		17.7		12.2		12.2		11.9		12.6		12.3		9.8		10.5		10.2		10		9.9		11.4		11.8		12.4		12.1		11.8	
Ferrous Iron	mg/L	0.27	J	0.21	J	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Manganese	µg/L	1,260		645		576		201		10.5		0		0		0		2.4	J	1.9	J	1.6	J	0		0		0		0		0		0		0		0		0	
Hydrogen	nM																																									
Total Dissolved Solids	mg/L	497		395		361		364		401		383		412		371		413		382		339		373		370		348		343		334		366		311		351		346	
Benzene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromodichloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromoform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Chloroform	µg/L	0		0		0		0		0		0.09	J	0		0.085	J	0		0		0		0		0		0		0		0.097	J	0		0.12	J	0		0	
Dibromochloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichlorodifluoromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, 1,1-	µg/L	0		0.60	J	0		0		0		0		0		0		0		0		0		0		0		0		0		0.50	J	0		0		0		0	
Dichloroethene, cis-1,2-	µg/L	14		220		84		80		36		33		30		26		21		13		28		49		21		16		19		300		240		270		230		260	
Dichloroethene, trans-1,2-	µg/L	11		0		0		0.19	J	0		2.8		0		0.62		0.74		0		4		0		0.96		0.85		0		20		0		0		2.3		0.38	J
Methylene chloride	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Naphthalene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Tetrachloroethene	µg/L	0.28	J	190		120		150		21		49		48		32		20		4.4		9.7		12		5		8.4		7.5		190		180		180		150		170	
Toluene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Trichloroethene	µg/L	1.2		63		31		37		6.3		42		41		32		19		6.6		12		16		7.4		8		8.3		200		170		200		170		180	
Vinyl chloride	µg/L	12		16		5.5		3.9		0		2.2		0		0		0.43	J	0		0		0.44	J	0		0.30	J	0		0		0		0		0		0	
Arsenic	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Barium	µg/L	82.9		68.4		60.9		36.5		44.2		48.6		60		79		69.4		65.2		69.3		67.5		49.8		64.8		87.7		28.2		30.2		30.6		24.4		30.9	
Cadmium	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Chromium	µg/L	7.9		2.3	J	4.7	J	0		5.9		5		2	J	4.5	J	0		2.1	J	8.3		1.8	J	0		0		1.4	J	2.1	J	1.7	J	1.7	J	0		2.4	J
Copper	µg/L	0		0		0		0		5.2	B	0		0		1.3	J	0		3.6	BJ	0		0		1.8	J	0		4.0	BJ	0		1.3	J	0		0		4.3	BJ
Lead	µg/L	0		1.6	J	0		4	J	0		0		0		0		3.2	J	0		0		0		0		2.4	J	0		0		0		0		4.4	J	0	
Mercury	µg/L	0		0.1	J	0		0.14	J	0.085	J	0		0.096	J	0		0.14	J	0.061	J	0		0.099	J	0		0.13	J	0		0		0.079	J	0		0.19	J	0	
Nickel	µg/L	27.7		10.7		11.4		3.6	J	4.7	J	3.4	J	1.5	J	4.9	J	0.58	J	2.2	J	7.3		2.8	J	1.3	J	1.7	J	2.1	J	3.4	J	3.7	J	3.5	J	2.0	J	3.5	J
Zinc	µg/L	0		16.3	J	11.2	J	5.5	J	15.9	J	0		18.1	J	17.8	J	6.5	J	12.5	J	0		17.3	J	9.8	J	15.9	J	13.4	J	7.5	J	24.9	J	23.1	J	9.5	J	20.6	J
		Q9 - Month 27		Q10 - Month 30		Q10 - Month 30		Q11 - Month 33		Q12- Month 36		Q9 - Month 27		Q10 - Month 30		Q10 - Month 30		Q11 - Month 33		Q12- Month 36		Q9 - Month 27		Q10 - Month 30		Q10 - Month 30		Q11 - Month 33		Q12- Month 36		Q9 - Month 27		Q10 - Month 30		Q10 - Month 30		Q11 - Month 33		Q12- Month 36	

Note: 0 sample value indicates a non-detect analyte value

Well ID		**CS-WB06-LGR03B**																						**CS-WB06-LGR04**									
Sample Date		**5/19/2009**		**6/15/2009**		**7/20/2009**		**8/17/2009**		**10/5/2009**		**10/22/2009**		**11/16/2009**		**12/14/2009**		**1/27/2010**		**2/22/2010**		**3/22/2010**		**4/29/2010**		**7/21/2009**		**10/5/2009**		**10/22/2009**		**1/27/2010**		**4/29/2010**	
Compound	**Units**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**
Dissolved Organic Carbon	mg/L					0.95				1.4	B	0.81						0						0.80		0.78		1.0	B	0.21	J	0.51		0.97	
Total Organic Carbon	mg/L					1.3	B			2.6		1.1						0.28	J					0.84		0.47	J	21.6		0.52		1.7		0	
Methane	µg/L					0				0		0.30	J					4.7						2.2		0		0		0		0		0	
Ethene	µg/L					0				0		0						0						0		0		0		0		0		0	
Ethane	µg/L					0				0		0						0						0		0		0		0		0		0	
Carbon Dioxide	µg/L					48,600				53,400		15,000						37,100						26,200		15,000		51,000		73,800		29,200		62,800	
Alkalinity, Total (as CACO3)	mg/L					312				316		301						293						289		298		307		285		274		304	
Nitrate/Nitrite	mg/L					0.21				0.18	B	0.22	B					0						0		1.1		0.96	B	0.98	B	0.75		0.78	
Sulfate	mg/L					17.9				17.2		17.6						19.6						18.3		10.3		10.2		11.1		11.1		10.6	
Chloride	mg/L					11.6				12.1		12.8						12						11.9		12.5		13.2		13.7		13.2		12.7	
Ferrous Iron	mg/L					0				0		0						0						0		0		0		0		0		0	
Manganese	µg/L					39				0		0						0						0		2.7	J	0		0		2.2	J	6.8	
Hydrogen	nM																																		
Hydrogen Sulfide																																			
Total Dissolved Solids	mg/L	345		321		359		336		363		315		334		347		365		358		335		341		354		373		319		362		349	
Benzene	µg/L	0		0		0.16	J	0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromodichloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromoform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Chloroform	µg/L	0		0		0.12	J	0.11	J	0.13	J	0.11	J	0.12	J	0		0		0.11	J	0		0		0.18	J	0.13	J	0.15	J	0.11	J	0	
Dibromochloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichlorodifluoromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, 1,1-	µg/L	0		0		0		0.37	J	0		0.32	J	0.36	J	0		0		0		0.40	J	0		1.0	J	0.59	J	0		0.36	J	0	
Dichloroethene, cis-1,2-	µg/L	180		180		230		200		260		250		270		270		230		260		220		160		440		450		310		380		320	
Dichloroethene, trans-1,2-	µg/L	3.5		2.3		26		11		0		0.38	J	3.5		2.4		2.3		2.0		4.8		0.90		37		0		0		2.6		0	
Methylene chloride	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Naphthalene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Tetrachloroethene	µg/L	79		120		150		190		190		180		170		140		120		150		190		52		360		220		190		210		110	
Toluene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Trichloroethene	µg/L	100		130		170		200		190		200		170		170		160		180		200		81		240		180		160		140		80	
Vinyl chloride	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Arsenic	µg/L					0				2.5	J	0						0						0		0		0		0		0		0	
Barium	µg/L					38.2				29.8		30.2						23.9						29.4		34.6		28.4		29.9		26.2		30.4	
Cadmium	µg/L					0.52	J			0		0						0						0		0		0		0		0		0	
Chromium	µg/L					5.2				1.6	J	0						0						2.5	J	10.1		0		0		0		0	
Copper	µg/L					1.9	J			0		0						0						13.1	B	0		0		0		0		4	BJ
Lead	µg/L					0				0		0						3.9	J					0		0		0		0		5.2		0	
Mercury	µg/L					0.061	J			0.11	J	0						0.19	J					0		0.061	J	0.090	J	0		0.17	J	0.060	J
Nickel	µg/L					4.9	J			3.5	J	3.5	J					2.2	J					3.5	J	5.3		1.8	J	1.1	J	0.58	J	0	
Zinc	µg/L					162				30.1	J	18.1	J					8.0	J					60.5	B	9.2	J	19.3	J	15.3	J	41.9	J	13.2	J
		Quarter 9						Quarter 10						Quarter 11						Quarter 12						Q9 - Month 27		Q10 - Month 30		Q10 - Month 30		Q11 - Month 33		Q12- Month 36	

Table 12.2.3c

SWMU B-3 Bioreactor Multi-port Well CS-WB07
May 2009 - April 2010

Q12																															
Well ID		**CS-WB07-UGR01**				**CS-WB07-LGR01**								**CS-WB07-LGR-02**								**CS-WB07-LGR-03A**									
Sample Date		**1/25/2010**		**4/28/2010**		**7/27/2009**		**10/14/2009**		**1/25/2010**		**4/28/2010**		**7/23/2009**		**10/14/2009**		**1/25/2010**		**4/28/2010**		**7/23/2009**		**10/27/2009**		**1/25/2010**		**4/28/2010**			
Compound	**Units**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**		
Dissolved Organic Carbon	mg/L	4.5		5.0		0		2.9	B	1.1		0.82		0.52		2.3	B	0.60		0.66		0.52		0.99		0.35	J	0.75			
Total Organic Carbon	mg/L	5.1		5.0		0		2.5		0.70		0.20	J	1.3		2.3		1.4		0.24	J	0.31	J	0.69		0.41	J	0.39	J		
Methane	µg/L	985		1,890		1.3		4.3		23.8		0		1.6		0.5	J	3.8		1.2		0		3.3		8.3		0.90	J		
Ethene	µg/L	5.2		6.2		0		0		0		0		0		0		0		0		0		0		0		0			
Ethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Carbon Dioxide	µg/L	44,400		101,000		73,700		17,900		111,000		40,200		42,900		11,200		31,000		22,900		17,900		24,000		41,900		5,790			
Alkalinity, Total (as CACO3)	mg/L	396		487		431		421		408		430		304		291		293		310		300		286		282		303			
Nitrate/Nitrite	mg/L	0		0		0.047	J	0.18	B	0		0.036	J	0.26		0.43	B	0		0		0		0.035	BJ	0		0			
Sulfate	mg/L	18.2		18.3		81.7		79.9		78.3		84.8		37.3		37.5		37.8		36.3		19.5		20.1		19.8		19.2			
Chloride	mg/L	28.7		24		15.3		16.4		16.1		15.7		12.5		12.5		13.2		13.2		10		10.4		10.4		10.2			
Ferrous Iron	mg/L	4.5		5.0		0		0		0		0		0		0		0		0.17	J	0		0		0		0			
Manganese	µg/L	1,190		1,530		11.5		7.4		3.0	J	0		0		2.0	J	0		0		0		0		0		0			
Hydrogen	nM																														
Total Dissolved Solids	mg/L	534		551		504		577		571		522		380		381		397		374		333		334		333		318			
Benzene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Bromodichloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Bromoform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Chloroform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Dibromochloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Dichlorodifluoromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Dichloroethene, 1,1-	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Dichloroethene, cis-1,2-	µg/L	42		8.7		1.5		3		2.9		0.28	J	0.40	J	0.89	J	0.18	J	0.26	J	26		27		30		31			
Dichloroethene, trans-1,2-	µg/L	3.3		0		0.49	J	0.58	J	0.43	J	0		0		0		0		0		2.7		0		0.64		0			
Methylene chloride	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Naphthalene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Tetrachloroethene	µg/L	0		0		0.32	BJ	0.22	J	0		0.29	J	0.62	J	0.83	J	0.21	J	0		0.69	J	0.33	BJ	0.64	J	4.2			
Toluene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Trichloroethene	µg/L	0.77	J	0.50	J	1.1		1.7		1.3		0.89	J	1.6		2.4		0.57	J	0.18	J	5.2		4.8		4.6		5.8			
Vinyl chloride	µg/L	56		21		0		2.3		3		0		0		0		0		0		0		0		0		0			
Arsenic	µg/L	4.0	J	0		0		0		0		0		0		0		0		0		0		3.5	J	0		0			
Barium	µg/L	87		108		106		116		105		107		80.2		88.9		80.8		104		35.2		31.7		33.2		36.4			
Cadmium	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Chromium	µg/L	1.4	J	2.0	J	4.6	J	0		0		1.4	J	4.2	J	1.7	J	0		1.8	J	2.5	J	0		0		1.8	J		
Copper	µg/L	0		3.4	BJ	0		0		0		4.0	BJ	0		0		1.5	BJ	6.2	B	0		0		0		5.7	B		
Lead	µg/L	1.7	J	0		0		0		0		0		0		0		2.4	J	0		0		0		2.7	J	0			
Mercury	µg/L	0		0		0.078	J	0		0		0		0		0		0		0.071	J	0		0.12	BJ	0		0.076	J		
Nickel	µg/L	1.9	J	2.2	J	5.9		5.3		3.3	J	4.3	J	2.3	J	2.1	J	0		0.55	J	1.5	J	0.86	J	0		0.78	J		
Zinc	µg/L	3.9	J	12.5	J	5.2	J	11.9	J	4.7	J	11.7	J	0		13.3	J	6.6	J	13.1	J	0		7.2	J	10.6	J	14.8	J		
		Q11 - Month 33		Q12 - Month 36		Q9 - Month 27		Q10- Month 30		Q11 - Month 33		Q12 - Month 36		Q9 - Month 27		Q10- Month 30		Q11 - Month 33		Q12 - Month 36		Q9 - Month 27		Q10 - Month 30		Q11 - Month 33		Q12 - Month 36			

Note: 0 sample value indicates a non-detect analyte value

Note: Dry zones including UGR-01 were not sampled during the quarterly sampling event.

Well ID		**CS-WB07-LGR-03B**																						**CS-WB07-LGR-04**							
Sample Date		**5/18/2009**		**6/16/2009**		**7/20/2009**		**8/172009**		**10/22/2009**		**11/16/2009**		**12/14/2009**		**1/25/2010**		**2/22/2010**		**3/22/2010**		**4/19/2010**		**7/23/2009**		**10/22/2009**		**1/25/2010**		**4/28/2010**	
Compound	**Units**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**
Dissolved Organic Carbon	mg/L	1.3		0.57	B	0.85		1.4		0.43	J	3.6		0		0.39	J	0.44	J	2.4		0.82		0.48	BJ	1.1		0.40	J	0.51	
Total Organic Carbon	mg/L	1.0		0.4	J	1.6		1.0		2.3		2.2		0.62		0.68		0		0.74		0.72		0.48	J	1.9		0		0.89	
Methane	µg/L	2.2		4.4		4.2		155		7.6		2.0		3.1		7.2		8.1		7.4		3.1		0		0		0		0	
Ethene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Ethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Carbon Dioxide	µg/L	9,310		25,500		39,800		30,000		27,700		8,820		9,810		44,200		35,300		35,100		10,700		48,200		20,800		66,800		10,400	
Alkalinity, Total (as CACO3)	mg/L	294		282		301		311		290		286		283		288		317		333		291		299		274		277		293	
Nitrate/Nitrite	mg/L	0.034	BJ	0.000		0.049	J	0.036	J	0.13	B	0		0		0		0		0		0		0.96		1.05	B	1.1		1.1	
Sulfate	mg/L	19.4		19.7		19.6		21.9		20.5		20.8		19.5		19.9		19.1		19.8		19.2		10		10.1		9.3		9.1	
Chloride	mg/L	10.3		10.1		9.9		11.1		10.7		10.9		10.4		10.4		10.1		10.5		10.4		11.8		12.2		11.9		12.2	
Ferrous Iron	mg/L	0		0.21	J	0		3.8		0		0.22	J	0		0		0		0		0		0		0		0		0	
Manganese	µg/L	0		0		2.4	J	0		0		0		0		0		0		0		0		9.5		0		0		0	
Hydrogen	nM																														
Total Dissolved Solids	mg/L	359		340		315		336		307		331		362		343		349		342		331		339		328		341		329	
Benzene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0.17	J	0		0		0	
Bromodichloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromoform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Chloroform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0.24	J	0.22	J	0.17	J	0.21	J
Dibromochloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichlorodifluoromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, 1,1-	µg/L	0		0		0		0		0		0		0		0		0		0		0		1.1	J	0		0		0	
Dichloroethene, cis-1,2-	µg/L	21		14		22		14		26		30		31		23		22		29		33		430		250		250		410	
Dichloroethene, trans-1,2-	µg/L	0.81		0.73		1.7		1.4		0		0.94		0.61		0.32	J	0.44	J	0.67		0.59	J	36		0		0.55	J	0.31	J
Methylene chloride	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Naphthalene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Tetrachloroethene	µg/L	1.2	J	0		0.29	J	0		7.1		0.79	J	0		2.4		1.2	J	0		0		360		210		140		280	
Toluene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Trichloroethene	µg/L	4.1		2.0		2.6		1.9		5.9		4.4		3.0		4.4		4.4		2.4		1.5		340		220		170		310	
Vinyl chloride	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Arsenic	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Barium	µg/L	35.1		37.7		37.6		35.3		32.4		36.6		32.8		29.1		34.8		36.1		37.1		27.5		28.6		26		29	
Cadmium	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Chromium	µg/L	16		3.7	J	3.9	J	1.7	J	0		0		0		0		4.3	J	0		1.7	J	3.4	J	0		0		0	
Copper	µg/L	0		0		0		0		0		44.5	B	1.6	J	1.0	BJ	0		15.3	B	9.7	B	0		0		2.0	BJ	4.8	BJ
Lead	µg/L	0		0		0		0		0		0		0		3.8	J	0		0		0		0		0		3.0	J	0	
Mercury	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Nickel	µg/L	8.9		1.4	J	1.5	J	0.85	J	1.3	J	1.5	J	1.6	J	0		1.2	J	0		0.8	J	2.7	J	1.2	J	0		0	
Zinc	µg/L	0		0		15.6	J	2.6	BJ	8.8	J	42.3	J	15.5	J	9.7	J	0		44.2	J	53	B	0		8.2	J	5.7	J	17.5	J
		Quarter 9						Quarter 10				Quarter 11						Quarter 12						Q9 - Month 27		Q10- Month 30		Q11 - Month 33		Q12 - Month 36	

Table 12.2.3d

SWMU B-3 Bioreactor Multi-port Well CS-WB08
May 2009 - April 2010

Q12

Well ID		CS-WB08-UGR01								CS-WB08-LGR01										CS-WB08-LGR02										CS-WB08-LGR03A			
Sample Date		9/24/2009		10/14/2009		1/26/2010		4/27/2010		7/21/2009		9/24/2009		10/14/2009		1/26/2010		4/27/2010		7/21/2009		9/24/2009		10/14/2009		1/26/2010		4/27/2010		1/26/2010		4/27/2010	
Compound	**Units**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**
Dissolved Organic Carbon	mg/L	0.88		3.3	B	0.55		2.1		0.71		0.65		2.0	B	0.40	J	0.66		0.92		0.44	J	1.9	B	1.1		0.53		0.68		1.4	
Total Organic Carbon	mg/L	1.2		2.3		1.3		0.61		0.45	J	0.20	J	1.5		1.1		1.3		0.93		0.56		1.1		1.2		0.60		0.84		1.5	
Methane	µg/L	117		159		110		0		0.40	J	0.40	J	0.70	J	0		0.5	J	5.9		8.7		9.4		2.3		1.5		0		0	
Ethene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Ethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Carbon Dioxide	µg/L	12,000		22,100		33,100		8,290		31,300		55,900		48,500		10,400		25,500		24,400		34,300		29,200		29,600		26,700		42,300		10,300	
Alkalinity, Total (as CACO3)	mg/L	257		270		277		301		339		315		319		357		362		337		336		344		343		368		329		330	
Nitrate/Nitrite	mg/L	0		0.064	B J	0.089	J	0.84		0.092	J	0.26		0.38	B	0		0		0.091	J	0		0.045	B J	0		0		0.44		0.55	
Sulfate	mg/L	14.3		15.3		19.4		14.2		90.3		87.1		91.8		90		88.8		85.9		79		85		109		103		16.2		16.6	
Chloride	mg/L	12		12.4		12.2		10.7		10.2		10.5		10.9		12.9		11.3		10.7		12.1		11.2		11.8		11.7		14.6		13.9	
Ferrous Iron	mg/L	0		0		0		0		0		0		0		0		0		0.21	J	0		0		0		0.19	J	0		0	
Manganese	µg/L	272		321		408		1.5	J	2.1	J	5.6		6.2		0		0		1.6	J	0		3.5	J	0		0		0		0	
Hydrogen	nM																																
Total Dissolved Solids	mg/L	336		327		366		355		498		467		492		521		527		470		535		487		573		561		400		375	
Benzene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromodichloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromoform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Chloroform	µg/L	0.081	J	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dibromochloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichlorodifluoromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, 1,1-	µg/L	0.43	J	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, cis-1,2-	µg/L	320		170		83		45		22		18		16		110		45		29		25		33		2.4		2.1		96		49	
Dichloroethene, trans-1,2-	µg/L	3.1		0.59	J	0.39	J	0.27	J	7.8		2.7		3.2		9.8		3.4		1.7		0.81		0.41	J	0		0		1.4		0.56	J
Methylene chloride	µg/L	0.47	BJ	0		0		0		0		0.46	BJ	0		0		0		0		0.38	BJ	0		0		0		0		0	
Naphthalene	µg/L	0		0.43		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Tetrachloroethene	µg/L	25		8.7		3.7		41		2		2.2		0		0.42	J	0.20	J	0		0		0		0.22	J	0.50	J	56		25	
Toluene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Trichloroethene	µg/L	22		15		1.5		16		5.8		7.0		0.63	J	4.3		0.23	J	0		0.23	J	0		0.49	J	0.73	J	55		28	
Vinyl chloride	µg/L	21		11		7.3		0		0		0		0		1.3		0		0		0		0		0		0		0		0	
Arsenic	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Barium	µg/L	37.8		39		28.1		29.6		102		107		112		104		97.8		56.5		53.3		53		64.2		73		35.5		35.3	
Cadmium	µg/L	0		0		0		0		1.2	J	0		0		0		0		0.90	J	0		0		0		0		0		0	
Chromium	µg/L	1.7	J	7.2		1.6	J	11.9		8.7		3.0	J	8.8		2.4	J	2.4	J	10.7		3.4	J	3.1	J	1.4	J	1.7	J	0		0	
Copper	µg/L	0		0		0		0		0		0		1.5	J	0		0		0		0		1.7	J	0		0		0		0	
Lead	µg/L	0		0		3.3	J	0		0		0		0		2.0	J	0		0		0		0		0		0		3.2	J	0	
Mercury	µg/L	0		0.061	J	0		0.067	J	0		0		0		0		0.061	J	0.065	J	0		0		0		0.070	J	0		0.076	J
Nickel	µg/L	6.9		12.2		7.7		7.6		4.8	J	1.7	J	7.7		2.0	J	0.93	J	4.7	J	1.6	J	2.3	J	0		0.77	J	1.4	J	3.2	J
Zinc	µg/L	20.3	J	10.8	J	7.9	J	12.2	J	4.0	J	17.5	J	25.4	J	6.4	J	4.4	J	6.9	J	20.7	J	23.7	J	3.0	J	5.4	J	8.3	J	8.7	J
		Q10 - Month 29		Q10 - Month 30		Q11 - Month 33		Q12- Month 36		Q9 - Month 27		Q10 - Month 29		Q10 - Month 30		Q11 - Month 33		Q12- Month 36		Q9 - Month 27		Q10 - Month 29		Q10 - Month 30		Q11 - Month 33		Q12- Month 36		Q11 - Month 33		Q12- Month 36	

Note: 0 sample value indicates a non-detect analyte value

Note: Dry zones were not sampled.

Well ID		CS-WB08-LGR03B																		CS-WB08-LGR04									
Sample Date		5/18/2009		6/15/2009		9/24/2009		10/21/2009		11/162009		12/14/2009		1/26/2010		2/22/2010		3/22/2010		4/19/2010		7/21/2009		9/24/2009		10/21/2009		1/26/2010		4/27/2010	
Compound	**Units**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**
Dissolved Organic Carbon	mg/L					0.30	J	0.19	J					1.4						1.0		1.5	B	1.4		2.6		1.4		1.4	
Total Organic Carbon	mg/L					0.37	J	1.9						1						1.2		1.6		2.1		2.6		2.2		0.76	
Methane	µg/L					0		0						0						0		0		0		0		0.3	J	0	
Ethene	µg/L					0		0						0						0		0		0		0		0		0	
Ethane	µg/L					0		0						0						0		0		0		0		0		0	
Carbon Dioxide	µg/L					20,900		38,600						78,900						29,300		263,000		294,000		77,900		52,800		124,000	
Alkalinity, Total (as CACO3)	mg/L					298		290						330						314		453		360		332		284		319	
Nitrate/Nitrite	mg/L					0.053	J	0.64	B					0.44						0.59		0.25		0.099	J	0.17	B	0.80		0.55	
Sulfate	mg/L					26.8		15.5						16.5						15.6		6.4		15.4		18.7		19.3		18	
Chloride	mg/L					10.4		12.8						15						14.1		15.8		14.3		15		16.1		14	
Ferrous Iron	mg/L					0		0						0						0		0		0		0		0		0	
Manganese	µg/L					0		3.2	J					0						0		3.6	J	0		133		11.1		8.4	
Hydrogen	nM																														
Total Dissolved Solids	mg/L	346		371		361		313		360		338		398		404		382		356		509		439		376		371		375	
Benzene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromodichloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromoform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Chloroform	µg/L	0		0		0		0.19	J	0.17	J	0.16	J	0		0.11	J	0		0		0		0		0		0		0	
Dibromochloromethane	µg/L	0		0		0		0		0		0		16		0		0		0		0		0		0		0		0	
Dichlorodifluoromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, 1,1-	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, cis-1,2-	µg/L	90		86		49		200		190		180		49		100		89		45		38		140		57		23		15	
Dichloroethene, trans-1,2-	µg/L	3.4		1.6		2.2		0		2.5		1.4		0.40	J	1.3		1.8		0.34	J	8.3		2.3		0		0		0	
Methylene chloride	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Naphthalene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Tetrachloroethene	µg/L	60		68		73		180		130		140		19		62		73		14		2.4		80		25		16		4.4	
Toluene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Trichloroethene	µg/L	70		72		57		210		170		160		19		65		66		16		3.2		39		16		9.6		2.5	
Vinyl chloride	µg/L	0		0		0		0		0		0		0		0		0		0		0		0.76	J	0		0		0	
Arsenic	µg/L					0		0						0						0		0		0		0		0		0	
Barium	µg/L					27.2		34.2						33.9						39.1		63		52.1		50.7		32.6		37.6	
Cadmium	µg/L					0		0						0						0		0		0		0		0		0	
Chromium	µg/L					2.3	J	1.8	J					0						0		4.8	J	4.2	J	0		0		0	
Copper	µg/L					0		0						0						13.6	B	0		0		0		0		1.4	J
Lead	µg/L					0		0						3.3	J					0		0		0		0		2.6	J	0	
Mercury	µg/L					0		0						0						0		0		0		0		0		0.067	J
Nickel	µg/L					9.5		4.0	J					1.3	J					0.76	J	2.8	J	3.6	J	3.4	J	0.61	J	0	
Zinc	µg/L					29.4	J	13.8	J					4.1	J					63.7	B	15.5	J	39.3	J	7.3	J	4.1	J	9.3	J
		Quarter 9				Quarter 10				Quarter 11						Quarter 12						Q9 - Month 27		Q10 - Month 29		Q10 - Month 30		Q11 - Month 33		Q12- Month 36	

Table 12.3.3

B-3 Bioreactor Monitoring Well Analytical Summary
May 2009 - April 2010

Q12		Monitoring Wells																													
Well ID		CS-MW16-LGR										CS-MW1-LGR								CS-D						CS-B3-MW01					
Sample Date		7/20/2009		9/28/2009		10/29/2009		1/18/2010		4/26/2010		7/20/2009		10/29/2009		1/18/2010		4/26/2010		10/29/2009		1/18/2010		4/26/2010		7/20/2009		10/29/2009		1/18/2010		4/26/2010	
Compound	**Units**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**
Dissolved Organic Carbon	mg/L	0.40	J	0.77		1.0		0		0.56		0.46	J	0.63		0		0.51		0.56		0		0.40	J	14.1		9.8		10.7		12.2	
Total Organic Carbon	mg/L	0.52		0.74		1.3		0.81		0.48	J	0.5	B	0.36	J	0.85		1.6		0.70		0.18	J	0.45	J	16.8		9.9		10.8		10.8	
Methane	µg/L	0		33.2		0		32.3		0		0		0		0		0		0		0		0		536		97,600		85,000		113,000	
Ethene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Ethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Carbon Dioxide	µg/L	40,400		35,000		35,000		36,100		35,400		49,900		36,100		26,100		33,800		34,200		27,800		32,000		119,000		1,270,000		573,000		812,000	
Alkalinity, Total (as CACO3)	mg/L	278		292		271		279		281		269		256		284		268		252		269		267		1,160		622		503		605	
Nitrate/Nitrite	mg/L	1.2		0.01	J	0.81	B	1.1		1.2		0.85		1.233	B	1.4		1.4		1.23	B	1.2		1.0		0		0.033	BJ	0.019	J	0	
Sulfate	mg/L	17.8		20.3		18.8		17.5		16.8		13.3		14.4		13.8		13.8		16.8		15.1		14.6		2.5		1.0		2.4		0.88	J
Chloride	mg/L	10.3		10.4		11.4		10.6		10.5		8.8		10.6		10.2		10		10.9		10.8		10.9		13.8		13.9		12.8		13.1	
Ferrous Iron	mg/L	0		1.8		4.5		0.19	J	0.2	J	0		0		0.21	J	0		0		0.18	J	0		2.5		4.5		4.1		5.6	
Manganese	µg/L	0		270		13.1		0		0		0		0		0		0		0		0		0		307		128		125		149	
Hydrogen	nM	2.7				2.9		5.6		5.3		2.8		1.4		2.1		7.9		4.1		5.1		4.9		2.1		1.4		5.1		4.5	
Total Dissolved Solids	mg/L	335		329		333		341		333		311		302		317		305		314		325		322		1,300		692		611		663	
Benzene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromodichloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromoform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Chloroform	µg/L	0.15	J	0		0		0.16	J	0.15	J	0.18	J	0.14	J	0		0.11	J	0.13	J	0.17	J	0.15	J	0		0		0		0	
Dibromochloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichlorodifluoromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, 1,1-	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, cis-1,2-	µg/L	160		140		160		150		120		18		46		51		48		71		120		88		180		510		470		360	
Dichloroethene, trans-1,2-	µg/L	12		0.98		0		0.39	J	0.31	J	1.2		0		0.76		0.73		0		0.55	J	0.56	J	17		0		3.4		2.3	
Methylene chloride	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Naphthalene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Tetrachloroethene	µg/L	180		140		170		150		150		16		33		43		45		65		120		94		0		0		0		0.43	J
Toluene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Trichloroethene	µg/L	190		150		180		170		160		36		47		54		49		93		150		120		0		1.5	B	3.2		0.44	J
Vinyl chloride	µg/L	0		0		0		0		0		0		0		0		0		0.24	J	0		0		2.7		5.0		5.1		14	
Arsenic	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		7.3		0		0		0	
Barium	µg/L	38.2		46		45.1		34		37.5		35.4		37.9		30.9		32		38.9		28.9		32.1		592		126		88.5		97.8	
Cadmium	µg/L	0.54	J	0		0		0		0		0		0		0		0		0		0		0		0.77	J	0		0		0	
Chromium	µg/L	0		0		0		0		0		2.9	J	14.6		0		1.7	J	0		0		0		3.4	J	0		0		0	
Copper	µg/L	27.1		4.7	J	33.6		1.7	J	14.5		0		0		0		0		0		0		3.7	J	0		0		0		0	
Lead	µg/L	3.6	J	0		2.3	J	0		0		0		0		0		0		0		0		0		33.6		0		0		0	
Mercury	µg/L	0.099	J	0		0		0		0.10	J	0.088	J	0		0		0.060	J	0		0		0.076	J	0.076	J	0		0.18	BJ	0.075	J
Nickel	µg/L	0		2.9	J	1.6	J	0		0		12.3		7.3		4	J	8.7		1.8	J	0.49	J	0		20.4		4.3	J	0.76	J	1.4	J
Zinc	µg/L	213		77.4		780		63.6		142		7.9	J	4.6	J	2.9	J	0		16	J	13.1	J	11.3	J	83.9		5.8	J	31.4	J	4.7	J
		Quarter 9 - Month 27		Quarter 10 - Month 29		Quarter 10 - Month 30		Quarter 11 - Month 33		Quarter 12- Month 36		Quarter 9 - Month 27		Quarter 10 - Month 30		Quarter 11 - Month 33		Quarter 12- Month 36		Quarter 10 - Month 30		Quarter 11 - Month 33		Quarter 12- Month 36		Quarter 9 - Month 27		Quarter 10 - Month 30		Quarter 11 - Month 33		Quarter 12- Month 36	

Note : 0 sample value indicates a non-detect analyte value

Note: Dry monitoring wells were not sampled.

Well ID		CS-MW16-CC										B3-EXW01										CS-4				CS-MW27-UGR					
Sample Date		7/20/2009		9/28/2009		10/29/2009		1/18/2010		4/26/2010		7/20/2009		9/24/2009		10/29/2009		1/18/2010		4/26/2010		2/24/2010		4/26/2010		2/24/2010		3/23/2010		4/20/2010	
Compound	**Units**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**
Dissolved Organic Carbon	mg/L	0.44	J	0.26	J	1.7		0		0.97		0.66		0.49	J	3.6		0.17	J	0.84		2.3		1.7		1.8		3.2		2.8			
Total Organic Carbon	mg/L	0		0.63		1.9		0.23	J	0.31	J	0.84		0.53		4.3		0.71		0.44	J	2.0		2.3		1.6		2.7		3.0			
Methane	µg/L	7.6		10.9		10.5		6.9		6.7		19.4		8.7		0.40	J	0.50	J	12.4		0		1.2		4,200		6,940		3,240			
Ethene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		2.4	J	4.6		2.6	J		
Ethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Carbon Dioxide	µg/L	34,400		24,800		31,000		24,800		24,800		59,400		30,400		45,800		29,300		36,300		23,700		18,100		166,000		261,000		136,000			
Alkalinity, Total (as CACO3)	mg/L	285		284		270		302		285		354		282		293		271		297		235		240		393		447		402			
Nitrate/Nitrite	mg/L	0.18		0.044	J	0.033	BJ	0		0		0.48		0.06	J	1.03	B	0.455		0.82		2.2		1.2		0		0.10		0.035	J		
Sulfate	mg/L	61.6		62.7		61.2		61.9		62.3		12.2		17		10.9		12.7		10.6		38.7		28.5		13.1		15		13.8			
Chloride	mg/L	16.5		17.1		18.1		17.1		17		13.1		11.2		12		11.4		11.5		28.8		20.8		21.5		23.8		23.8			
Ferrous Iron	mg/L	2.1		1.2		3.0		0.33	J	0.51	J	0		0		0		0.29	J	0.20	J	0		0		0		0		0			
Manganese	µg/L	0		5.2		26.3		0		1.4	J	92.3		106		5.5		19.5		42.1		0		0		38.8		33.3		25			
Hydrogen	nM	2.9				7.5		3.9		4.7		4.8				12		12		120										5.0			
Total Dissolved Solids	mg/L	410		398		395		420		389		425		347		317		345		337		364		328		499		490		480			
Benzene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Bromodichloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Bromoform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Chloroform	µg/L	0		0		0		0		0		0.14	J	0		0.19	J	0.19	J	0.20	J	0.092	J	0		0		0		0			
Dibromochloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Dichlorodifluoromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Dichloroethene, 1,1-	µg/L	0.7	J	0.32	J	0		0.37	J	0		0.5	J	0		0		0		0		0		0		0		0		0			
Dichloroethene, cis-1,2-	µg/L	45		41		39		29		31		180		160		180		230		190		2.5		2.8		17		26		23			
Dichloroethene, trans-1,2-	µg/L	7.5		5.2		0		3.8		5.1		22		5.4		0		1.7		1.2		0		0		1.6		1.4		1.0			
Methylene chloride	µg/L	0		0		0		0		0		0		0.58	BJ	0		0		0		0		0		0		0		0			
Naphthalene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Tetrachloroethene	µg/L	9.4		2.7		5.3		4.6		2.7		88		62		130		170		150		3.0		3.8		0		0.44	J	0.83	J		
Toluene	µg/L	0		0		0		0		0		0		0		0		0.54	J	0.39	J	0		0		0		0		0			
Trichloroethene	µg/L	61		43		41		38		34		140		160		180		210		210		4.0		5.4		0.68	J	1.4		2.1			
Vinyl chloride	µg/L	0		0		0		0		0		15		1.3		0.81	J	0		0.74	J	0		0		23		32		23			
Arsenic	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Barium	µg/L	24.5		24.1		25.2		21.8		23.4		46.2		37.9		34.6		28		32.3		32.3		31.4		70.5		80.4		77.1			
Cadmium	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Chromium	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Copper	µg/L	1.2	J	2.4	J	11.8		4.5	J	7.7		0		5.9		0		23		3.8	J	0		1.0	J	0		5.8	B	11.9	B		
Lead	µg/L	0		1.7	J	3.8	J	0		0		0		5.5		0		30.6		0		0		0		0		0		0			
Mercury	µg/L	0.095	J	0		0		0		0.077	J	0.079	J	0		0		0		0.072	J	0		0.061	J	0		0		0			
Nickel	µg/L	2.9	J	4.4	J	4.9	J	2.8	J	2.4	J	4.2	J	8.2		2.4	J	1.5	J	2.1	J	0		0		0		0		0			
Zinc	µg/L	43.2	J	533		451		17.6	J	39.5	J	181		10,500		419		3,250		3,110		0		3.4	J	0		21.7	J	45.4	BJ		
		Quarter 9 - Month 27		Quarter 10 - Month 29		Quarter 10 - Month 30		Quarter 11- Month 33		Quarter 12- Month 36		Quarter 9 - Month 27		Quarter 10 - Month 29		Quarter 10- Month 30		Quarter 11- Month 33		Quarter 12- Month 36		Quarter 12-Month 34		Quarter 12-Month 36		Quarter 12-Month 34		Quarter 12-Month 35		Quarter 12-Month 36			

Table 12.4.4

SWMU B-3 Sump and Monitoring Well Microbial Data Summary
May 2009 - April 2010

Trench Sump	Sample date:	5/19/2009	6/17/2009	7/21/2009	9/23/2009	10/19/2009	1/19/2010	4/22/2010
B3 T1-1								
Dechlorinating Bacteria	units							
Dehalococcoides spp (1)	(cells/mL)							
Functional Genes	units							
TCE R-Dase (1)	(cells/mL)							
BAV1 VC R-Dase (1)	(cells/mL)							
VC R-Dase	(cells/mL)							
B3 T1-2								
Dechlorinating Bacteria	units							
Dehalococcoides spp (1)	(cells/mL)	8.36E+02	1.18E+03	6.16E+02	1.62E+03	1.32E+01	1.53E+03	2.20E+02
Functional Genes	units							
TCE R-Dase (1)	(cells/mL)	1.71E+02	2.47E+02	1.28E+01	7.22E+02	1.20E+00	2.75E+02	4.03E+01
BAV1 VC R-Dase (1)	(cells/mL)	<5.00E-01	<5.00E-02	<3.00E-01	<5.00E-01	9.00E-01	1.40E+00	<5.00E-01
VC R-Dase	(cells/mL)	1.93E+02	6.51E+02	2.07E+02	1.12E+03	9.00E-01	6.68E+01	1.18E+02
B3 T1-3								
Dechlorinating Bacteria	units							
Dehalococcoides spp (1)	(cells/mL)							
Functional Genes	units							
TCE R-Dase (1)	(cells/mL)							
BAV1 VC R-Dase (1)	(cells/mL)							
VC R-Dase	(cells/mL)							
B3 T2-1								
Dechlorinating Bacteria	units							
Dehalococcoides spp (1)	(cells/mL)	4.26E+02	2.58E+01	4.35E+01		4.84E+01		
Functional Genes	units							
TCE R-Dase (1)	(cells/mL)	1.49E+02	9.60E+00	6.70E+00		1.34E+01		
BAV1 VC R-Dase (1)	(cells/mL)	<5.00E-01	<5.00E-01	<3.00E-1		3.20E+00		
VC R-Dase	(cells/mL)	8.00E-01	1.00E-01 (J)	<3.00E-01		1.50E+00		
B3 T2-2								
Dechlorinating Bacteria	units							
Dehalococcoides spp (1)	(cells/mL)							
Functional Genes	units							
TCE R-Dase (1)	(cells/mL)							
BAV1 VC R-Dase (1)	(cells/mL)							
VC R-Dase	(cells/mL)							
B3 T3-1								
Dechlorinating Bacteria	units							
Dehalococcoides spp (1)	(cells/mL)					2.88E+01		
Functional Genes	units							
TCE R-Dase (1)	(cells/mL)					<5.00E-01		
BAV1 VC R-Dase (1)	(cells/mL)					9.00E-01		
VC R-Dase	(cells/mL)					1.00E-01 (J)		
B3 T5-1								
Dechlorinating Bacteria	units							
Dehalococcoides spp (1)	(cells/mL)					5.80E+00		
Functional Genes	units							
TCE R-Dase (1)	(cells/mL)					<5.00E-01		
BAV1 VC R-Dase (1)	(cells/mL)					5.00E-01 (J)		
VC R-Dase	(cells/mL)					<5.00E-01		
B3 T6-1								
Dechlorinating Bacteria	units							
Dehalococcoides spp (1)	(cells/mL)				6.90E+00	1.10E+00		
Functional Genes	units							
TCE R-Dase (1)	(cells/mL)				<5.00E-01	<5.00E-01		
BAV1 VC R-Dase (1)	(cells/mL)				<5.00E-01	1.00E-01 (J)		
VC R-Dase	(cells/mL)				2.70E+00	<5.00E-01		

Monitoring wells		10/29/2009
CS-D		
Dechlorinating Bacteria	units	
Dehalococcoides spp (1)	(cells/mL)	8.00E-01 (J)
Functional Genes	units	
TCE R-Dase (1)	(cells/mL)	<5.00E-01
BAV1 VC R-Dase (1)	(cells/mL)	<5.00E-01
VC R-Dase	(cells/mL)	1.00E-01 (J)
B3-EXW01		
Dechlorinating Bacteria	units	
Dehalococcoides spp (1)	(cells/mL)	4.00E-01 (J)
Functional Genes	units	
TCE R-Dase (1)	(cells/mL)	<5.00E-01
BAV1 VC R-Dase (1)	(cells/mL)	<5.00E-01
VC R-Dase	(cells/mL)	<5.00E-01
CS-MW01-LGR		
Dechlorinating Bacteria	units	
Dehalococcoides spp (1)	(cells/mL)	5.00E-01 (J)
Functional Genes	units	
TCE R-Dase (1)	(cells/mL)	<5.00E-01
BAV1 VC R-Dase (1)	(cells/mL)	<5.00E-01
VC R-Dase	(cells/mL)	<5.00E-01
CS-MW16-LGR		
Dechlorinating Bacteria	units	
Dehalococcoides spp (1)	(cells/mL)	3.00E-01 (J)
Functional Genes	units	
TCE R-Dase (1)	(cells/mL)	<5.00E-01
BAV1 VC R-Dase (1)	(cells/mL)	<5.00E-01
VC R-Dase	(cells/mL)	2.00E-01 (J)
CS-MW16-CC		
Dechlorinating Bacteria	units	
Dehalococcoides spp (1)	(cells/mL)	<5.00E-01
Functional Genes	units	
TCE R-Dase (1)	(cells/mL)	<5.00E-01
BAV1 VC R-Dase (1)	(cells/mL)	<5.00E-01
VC R-Dase	(cells/mL)	2.00E-01 (J)
CS-B3-MW01		
Dechlorinating Bacteria	units	
Dehalococcoides spp (1)	(cells/mL)	2.62E+01
Functional Genes	units	
TCE R-Dase (1)	(cells/mL)	<4.44E+00
BAV1 VC R-Dase (1)	(cells/mL)	<4.44E+00
VC R-Dase	(cells/mL)	<4.44E+00

Table 12.7.3

B3 - UIC Analytical Results
May 2009 - April 2010

			Sample ID	B3-UIC			B3-UIC			B3-UIC			B3-UIC			B3-UIC			B3-UIC			B3-UIC			B3-UIC			B3-UIC			B3-UIC		
			Sample Date	05/19/09			06/17/09			07/21/09			08/18/09			10/07/09			11/18/09			12/15/09			01/26/10			02/23/10			03/23/10			04/20/10		
			Sample Type	N1			N1			N1			N1			N1			N1			N1			N1			N1			N1			N1		
			Sampling Method	Grab			Grab			Grab			Grab			Grab			Grab			Grab			Grab			Grab			Grab			Grab		
			Lab ID	AX97001			AX98386			AY00242			AY01721			AY05449			AY08028			AY09058			AY10228			AY11832			AY13402			AY14479		
	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	Results	Flags	Dilution	Results	Flags	Dilution	Results	Flags	Dilution	Results	Flags	Dilution	Results	Flags	Dilution
SW8260B (µg/L)																																				
Cis-DCE	0.16	1.2	--	58		1	70		1	120		1	87		1	32		1	150		1	180		5	70		1	92		1	29		1	73		1
Trans-DCE	0.19	0.6	--	2		1	1.6		1	16		1	6.3		1	2.5		1	3.1		1	1.4		1	2.4		1	2.2		1	4.0		1	2.3		1
TCE	0.16	1.0	500.	72		1	80		1	110		1	93		1	39		1	150		1	160		5	78		1	100		1	32		1	89		1
PCE	0.15	1.4	700.	49		1	54		1	66		1	60		1	3.4		1	110		1	150		1	52		1	68		1	2.9		1	50		1
Toluene	0.17	1.1	--	0.17	U	1	0.17	U	1	0.17	U	1	0.17	U	1	0.17	U	1	0.17	U	1	0.17	U	1	0.17	U	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	4.6		1	0.89	J	1	0.23	U	1	0.23	U	1	0.31	J	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.	--	389		1	372		1	378		1	365		1	359		1	353		1	315		1	364		1	397		1	393		1	350		1
Field measured																																				
pH				7.21			7.07			7.15			*			7.37			7.43			6.98			** 7.22			7.06			7.40			7.30		

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

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

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.

Notes:
No UIC sample was collected in September, 2009 as normal bioreactor operations were interrupted for a month-long bioreactor flood test.

* pH was not collected as the meter was being repaired.
** pH was derived from pHs and contributing volumes from extraction wells CS-MW16-LGR and CS-MW16-CC

Table 12.5.3

SWMU B3-UIC Analytical Summary Table
May 2009 - April 2010

Q12		B3																			
Well ID		**B3-UIC**		**B3-UIC**		**B3-UIC**		**B3-UIC**		**B3-UIC**		**B3-UIC**		**B3-UIC**		**B3-UIC**		**B3-UIC**		**B3-UIC**	
Sample Date		**5/19/2009**		**6/172009**		**7/21/2009**		**8/18/2009**		**10/7/2009**		**11/18/2009**		**12/15/2009**		**1/26/2010**		**2/23/2010**		**3/23/2010**		**4/20/2010**	
Compound	**Units**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**	**Value**	**Flag**
Total Dissolved Solids	mg/L	389		372		378		365		359		353		315		364		397		393		350	
Benzene	µg/L	0		0		0		0		0		0		0		0		0		0		0	
Bromodichloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0	
Bromoform	µg/L	0		0		0		0		0		0		0		0		0		0		0	
Chloroform	µg/L	0		0		0.10	J	0		0		0.15	J	0.19	J	0		0.086	J	0		0	
Dibromochloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0	
Dichlorodifluoromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, 1,1-	µg/L	0		0		0.50	J	0		0		0		0		0		0		0		0	
Dichloroethene, cis-1,2-	µg/L	58		70		120		87		32		150		180		70		92		29		73	
Dichloroethene, trans-1,2-	µg/L	1.8		1.6		16		6.3		2.5		3.1		1.4		2.4		2.2		4.0		2.3	
Methylene chloride	µg/L	0		0		0		0		0		0		0		0		0		0		0	
Naphthalene	µg/L	0		0		0		0		0		0		0		0		0		0		0	
Tetrachloroethene	µg/L	49		54		66		60		3.4		110		150		52		68		2.9		50	
Toluene	µg/L	0		0		0		0		0		0		0		0		0		0		0	
Trichloroethene	µg/L	72		80		110		93		39		150		160		78		100		32		89	
Vinyl chloride	µg/L	0		0		4.6		0.89	J	0		0		0.31	J	0		0		0		0	

Note: 0 sample value indicates a non-detect analyte value.

No sample collected in September 2009 as injection was suspended for flood test.

Table 12.7.1 UIC Field Parameter Summary May 2009 - April 2010

	Date	Time	pH	Temperature	Specific Conductivity	ORP	Dissolved Oxygen
				(°C)	*(m-mho/cm)*	*(eV)*	*(mg/L)*
B3-UIC	5/19/09	1120	7.21	23.26	0.796	-106.1	4.55
	6/17/09	1105	7.07	24.52	0.639	-84.8	3.44
	7/21/09	1020	7.15	24.30	0.651	-120.7	3.79
	Aug.	Probe malfunction. Waiting on parts.					
	Sept.	System shut down for flood test. Bioreactor operations suspended.					
	10/7/09	1445	7.37	24.94	0.690	-87.4	5.37
	11/18/09	1120	7.43	22.64	0.597	-65.7	5.77
	12/15/09	1405	6.98	19.88	0.543	-52.4	4.16
	Jan.	No water in the system. System down.					
	2/5/10	1100	7.06	21.35	0.510	-97.0	6.57
	3/23/10	1400	7.40	24.16	0.653	-97.7	4.89
	4/20/10	1115	7.30	22.87	0.623	-82.4	5.58
	5/19/09	1120	7.21	23.26	0.796	-106.1	4.55

Figures

Figure 12.1.2T1-1

B-3 Bioreactor Trench 1 Sump 1 VOC Summary
May 2009 - April 2010

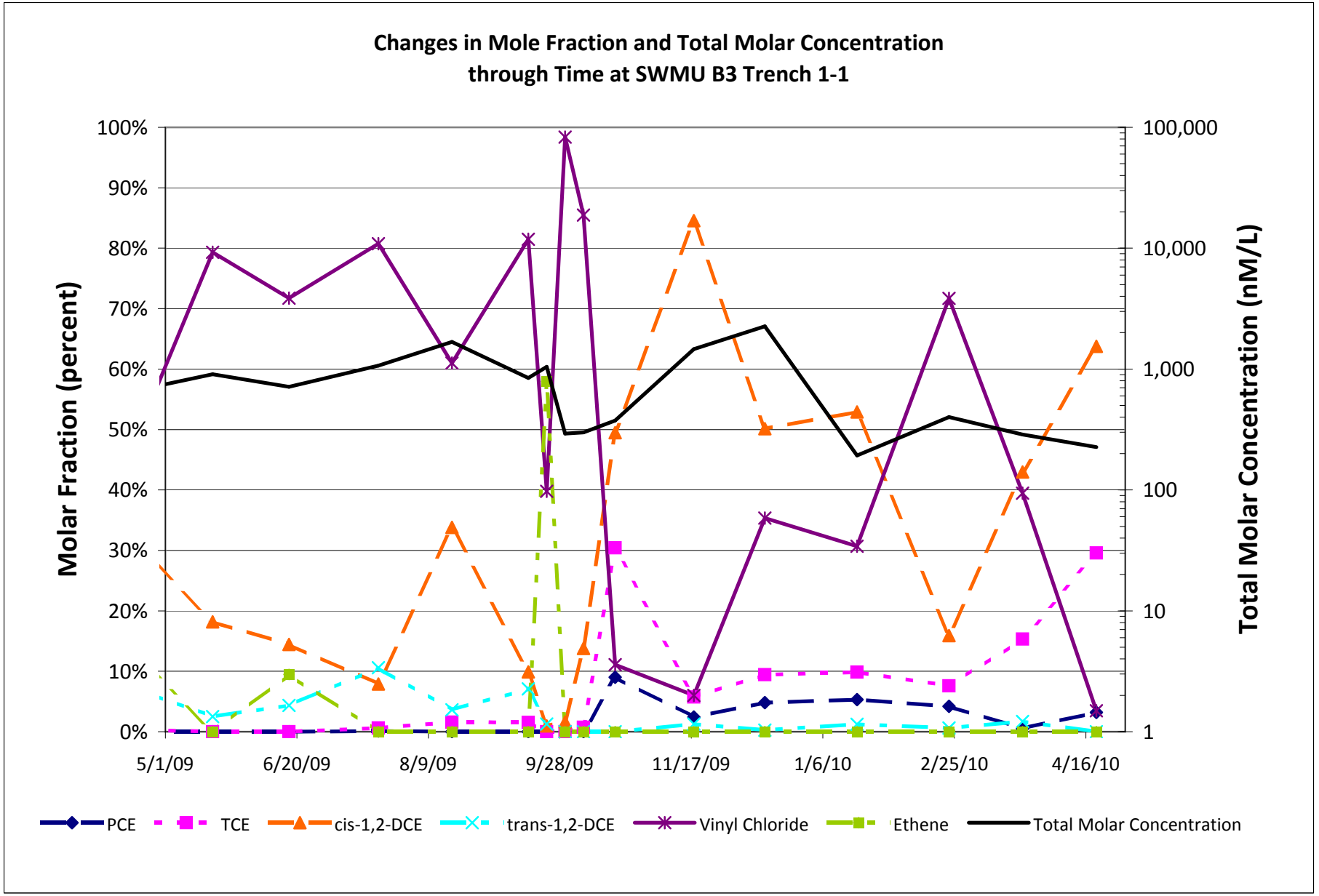


Figure 12.1.2T1-2

B-3 Bioreactor Trench 1 Sump 2 VOC Summary
May 2009 - April 2010

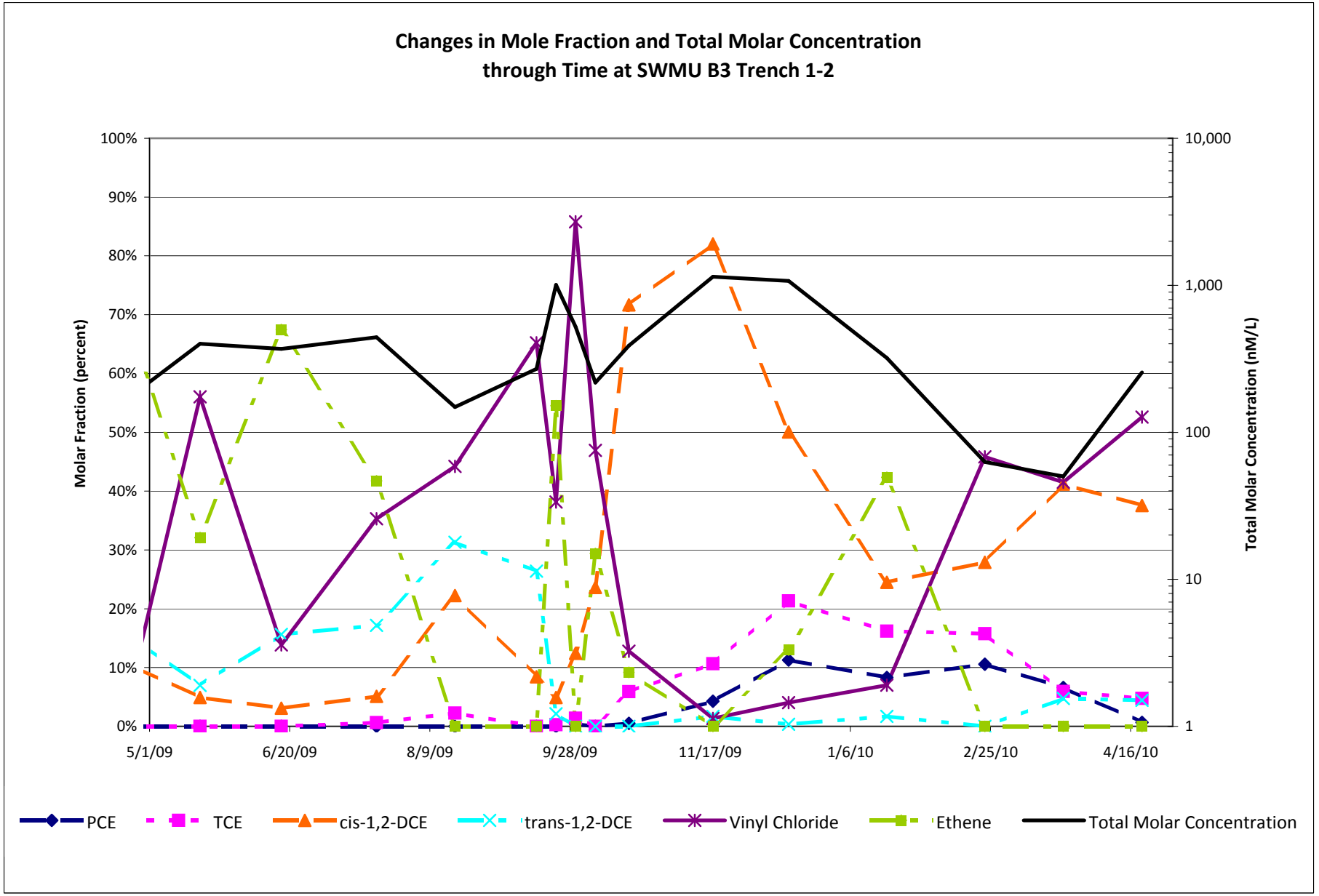


Figure 12.1.2T1-3

B-3 Bioreactor Trench 1 Sump 3 VOC Summary
May 2009 - April 2010

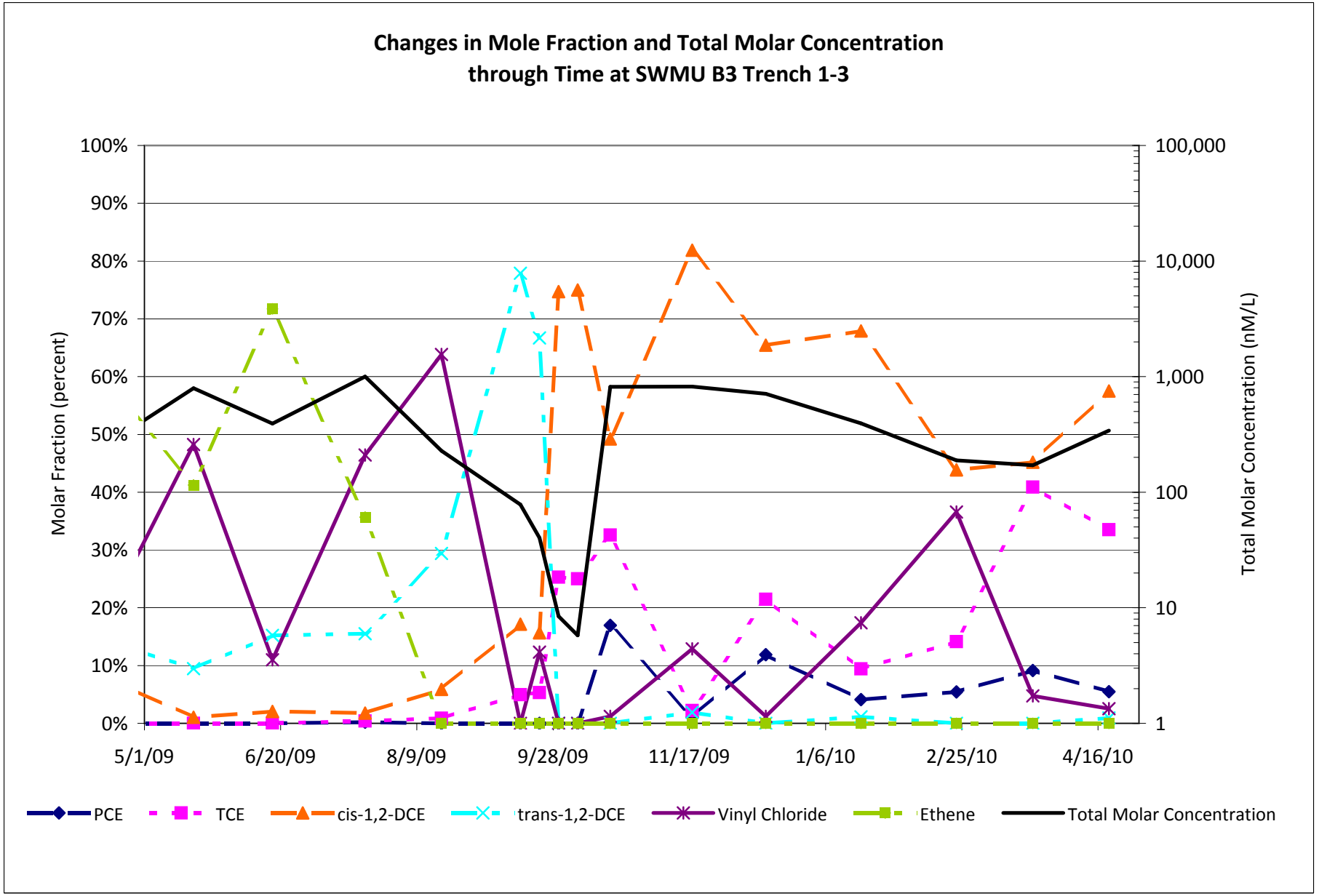


Figure 12.1.2T2-1

B-3 Bioreactor Trench 2 Sump 1 VOC Summary
May 2009 - April 2010

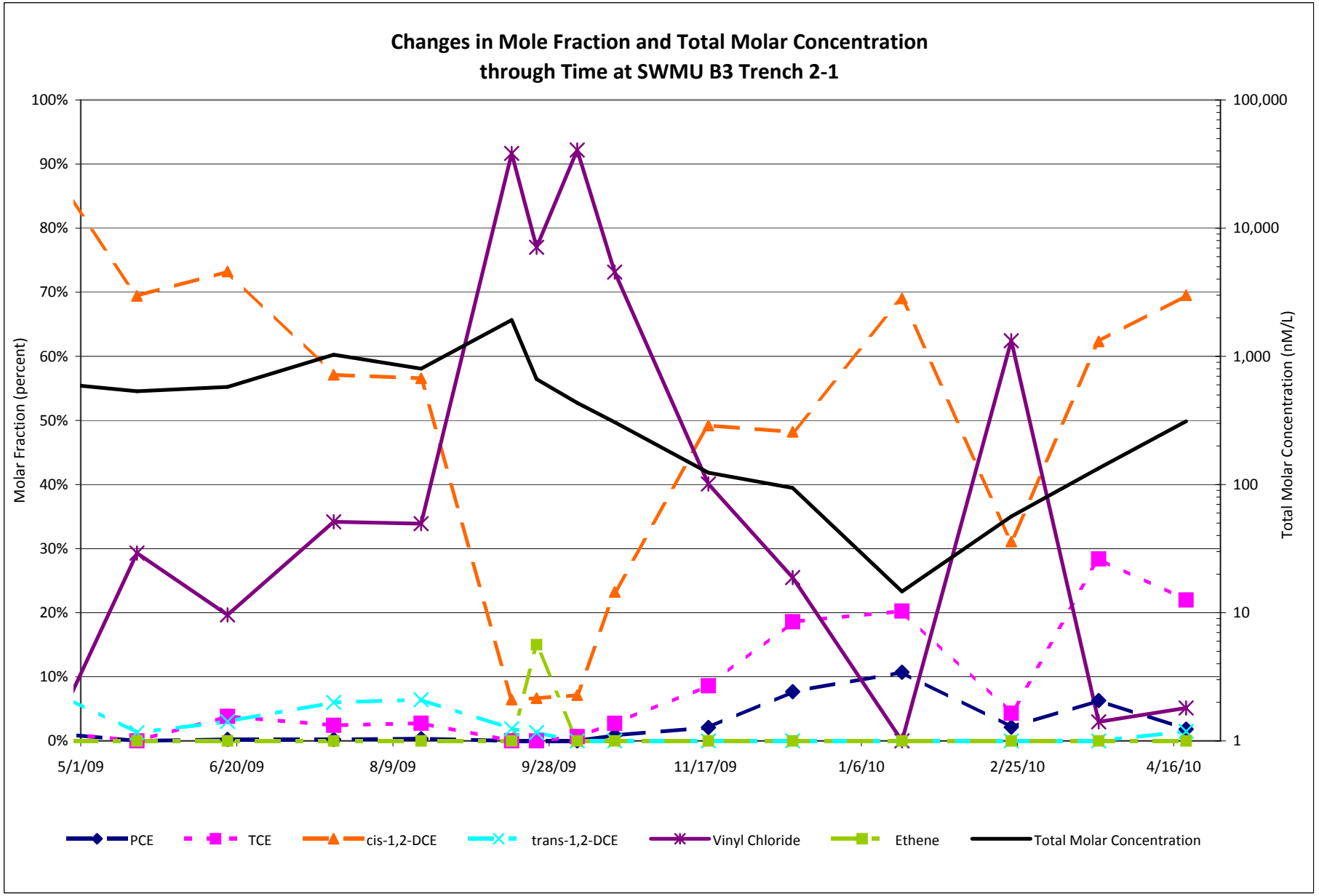


Figure 12.1.2T2-2

B-3 Bioreactor Trench 2 Sump 2 VOC Summary
May 2009 - April 2010

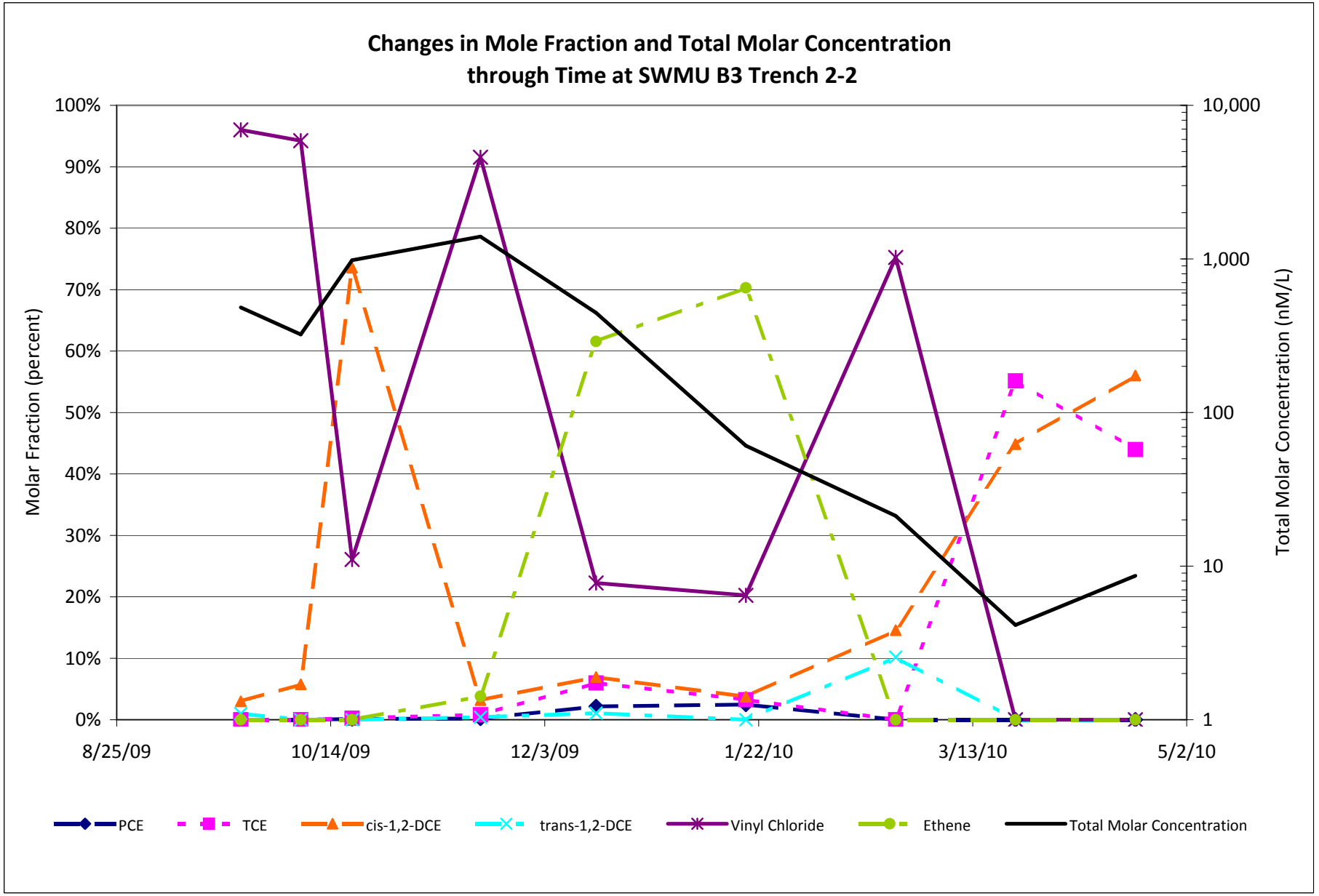


Figure 12.2.2a

CS-WB05-LGR03B VOC Summary
May 2009 - April 2010

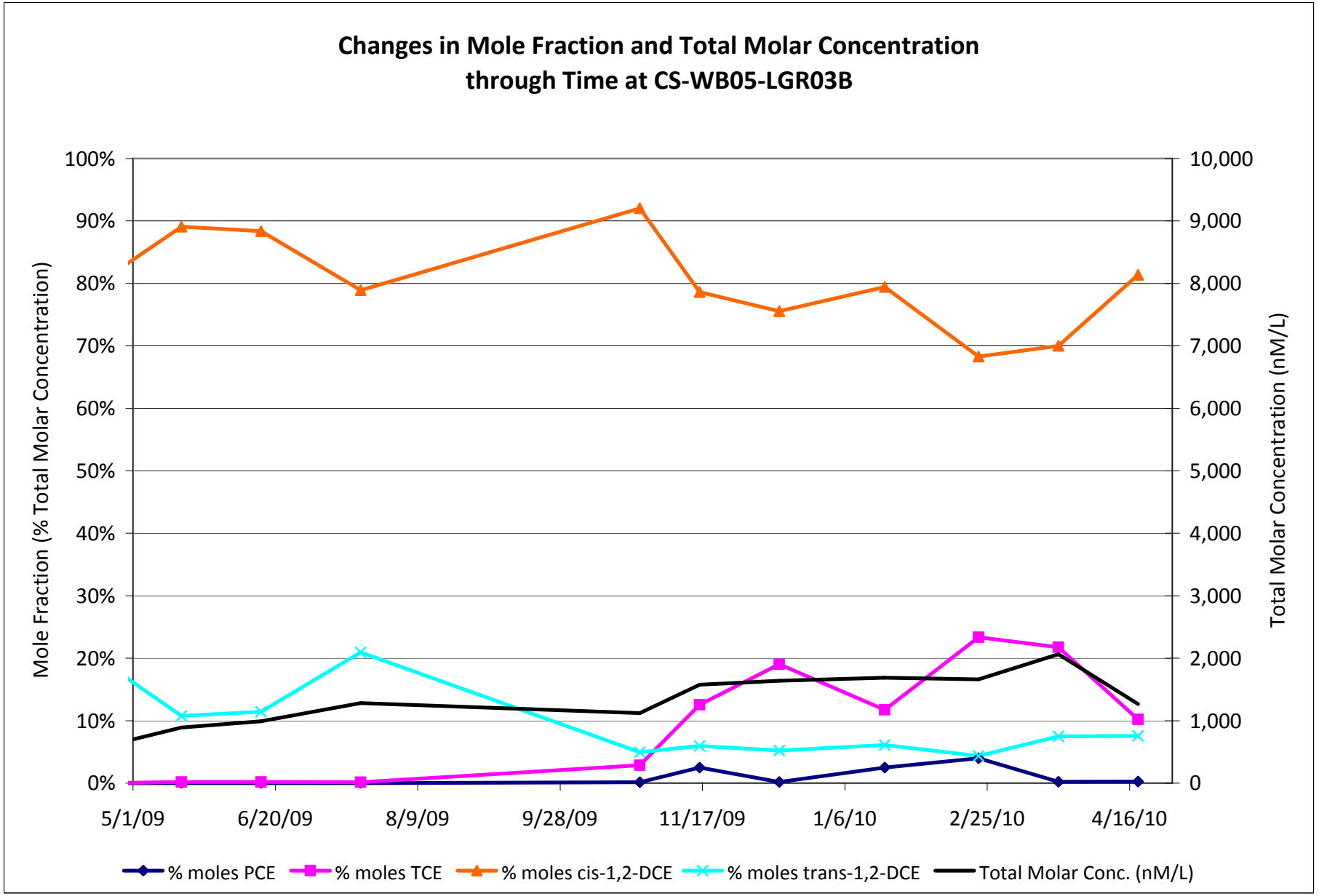


Figure 12.2.2b

CS-WB06-LGR03B VOC Summary
May 2009 - April 2010

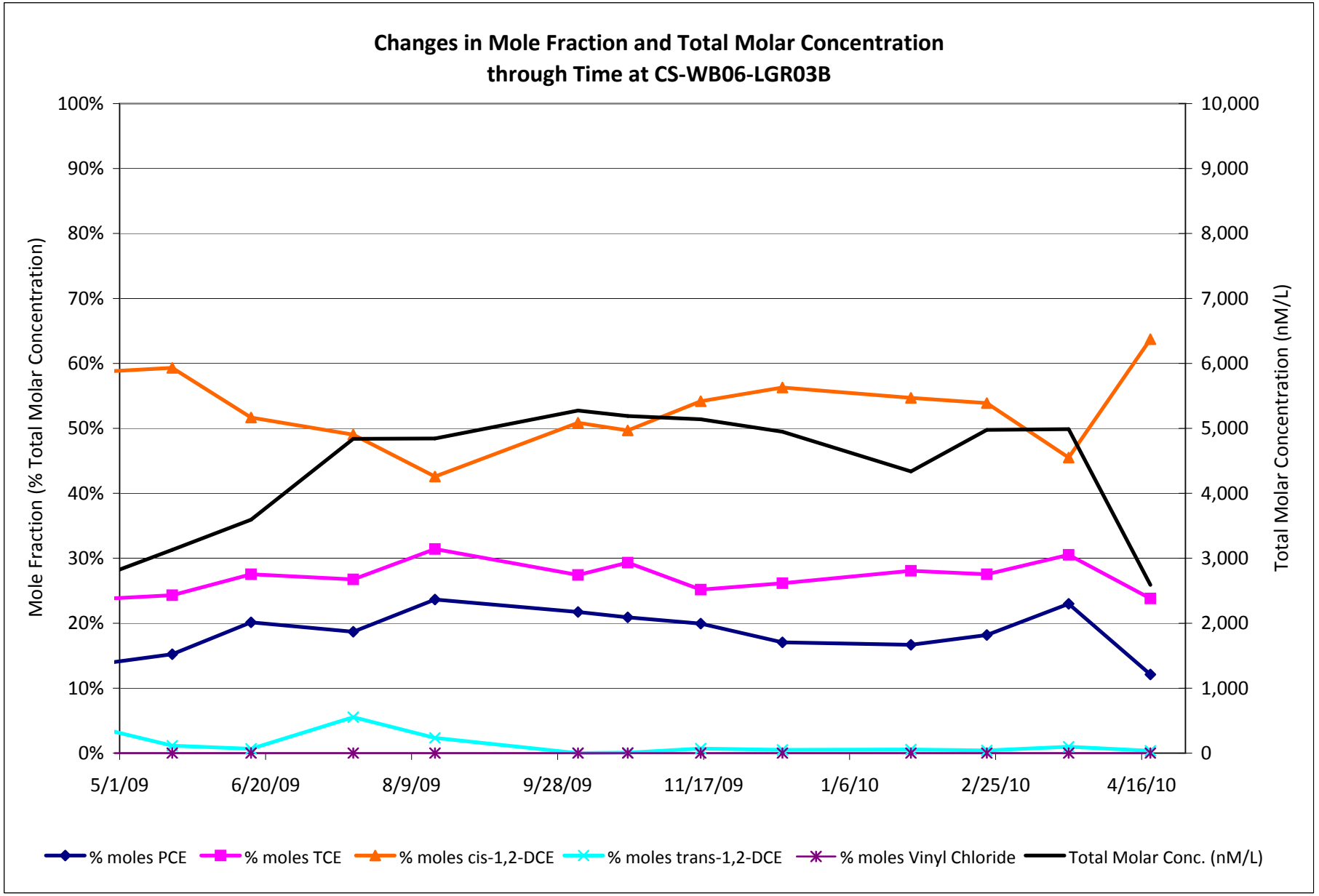


Figure 12.2.2c

CS-WB07-LGR03B VOC Summary
May 2009 - April 2010

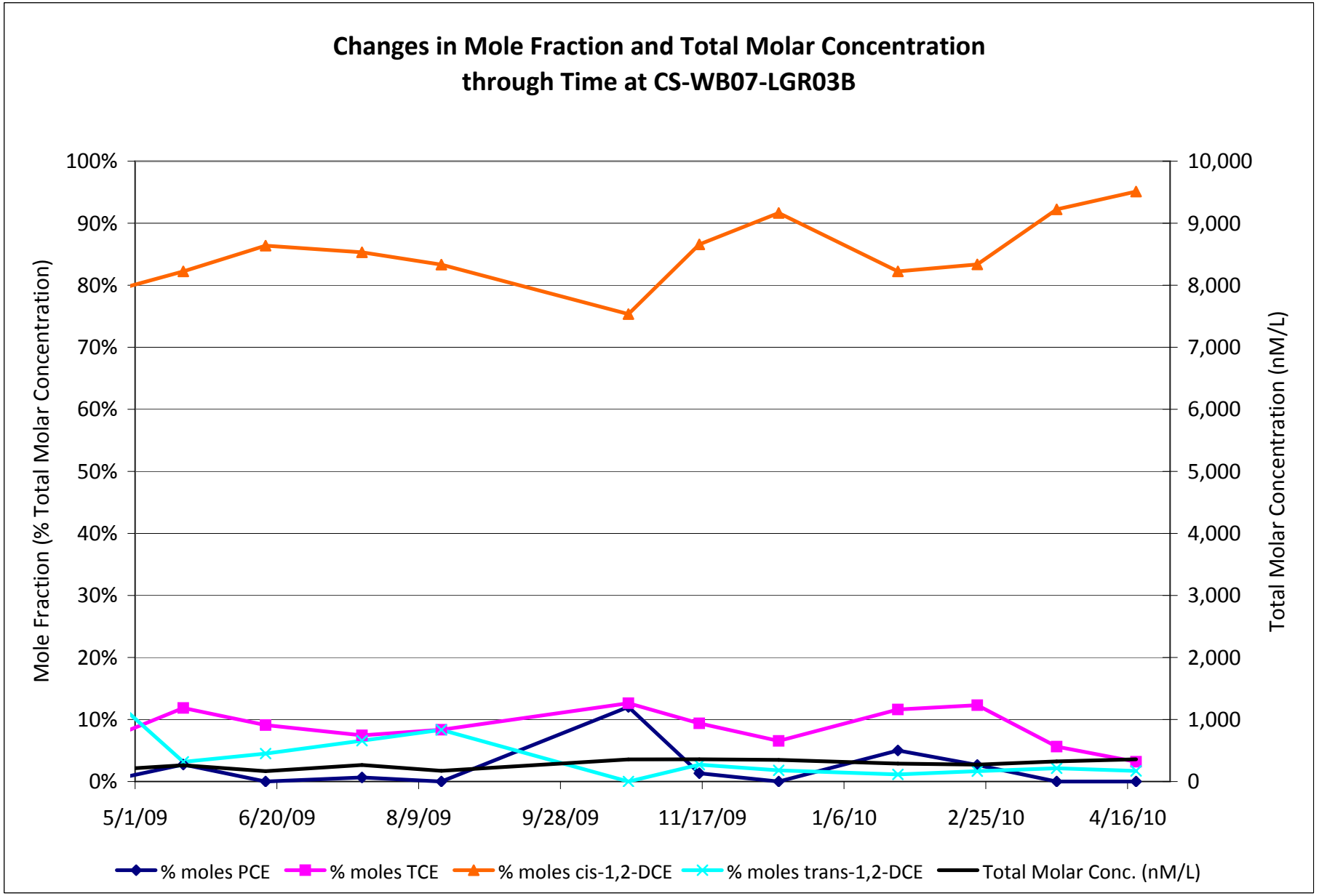


Figure 12.2.2d

CS-WB08-LGR03B VOC Summary
May 2009 - April 2010

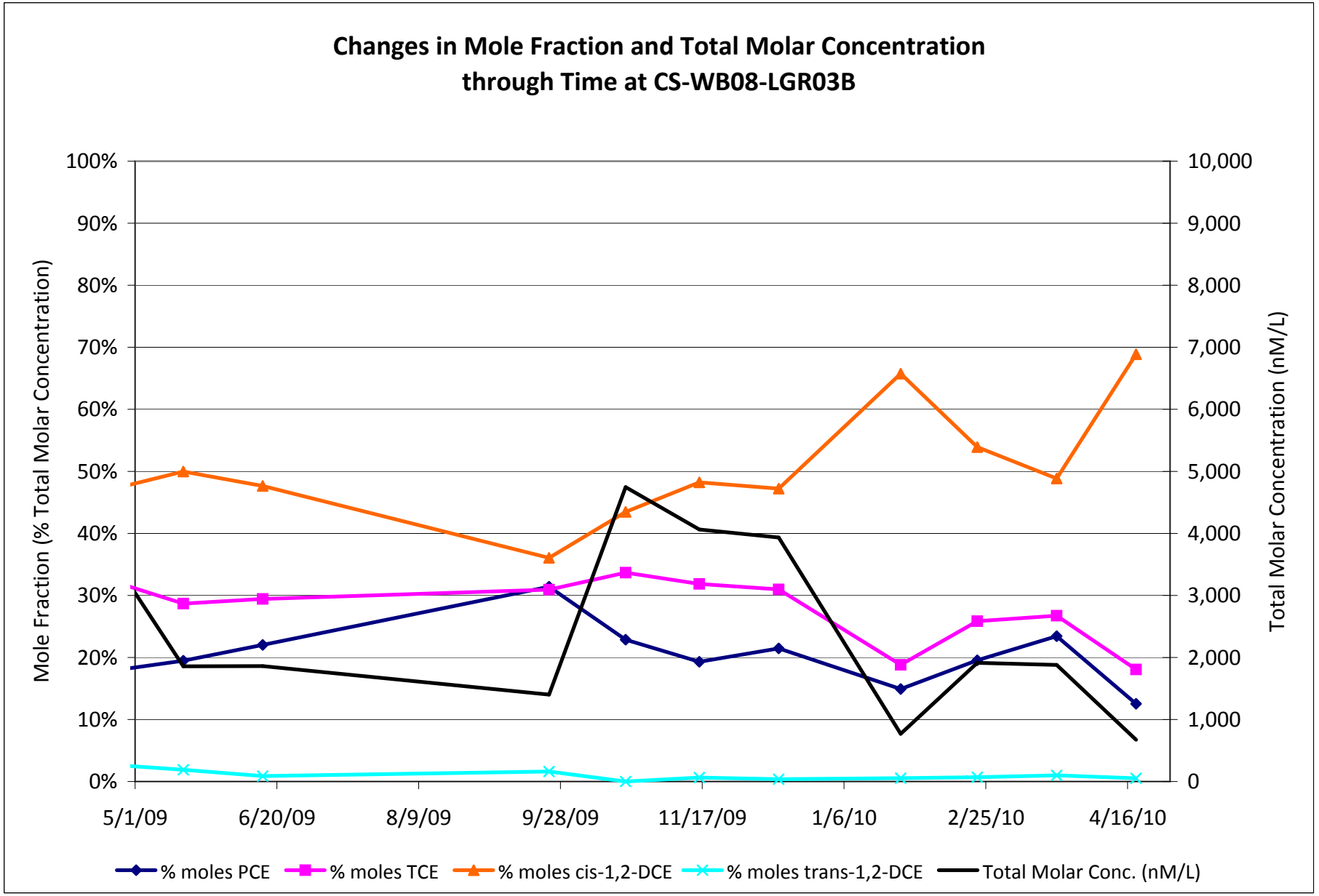


Figure 12.2.5

Lower Glen Rose Groundwater Elevations (feet above MSL) Measured in Westbay Wells
May 2009 - April 2010

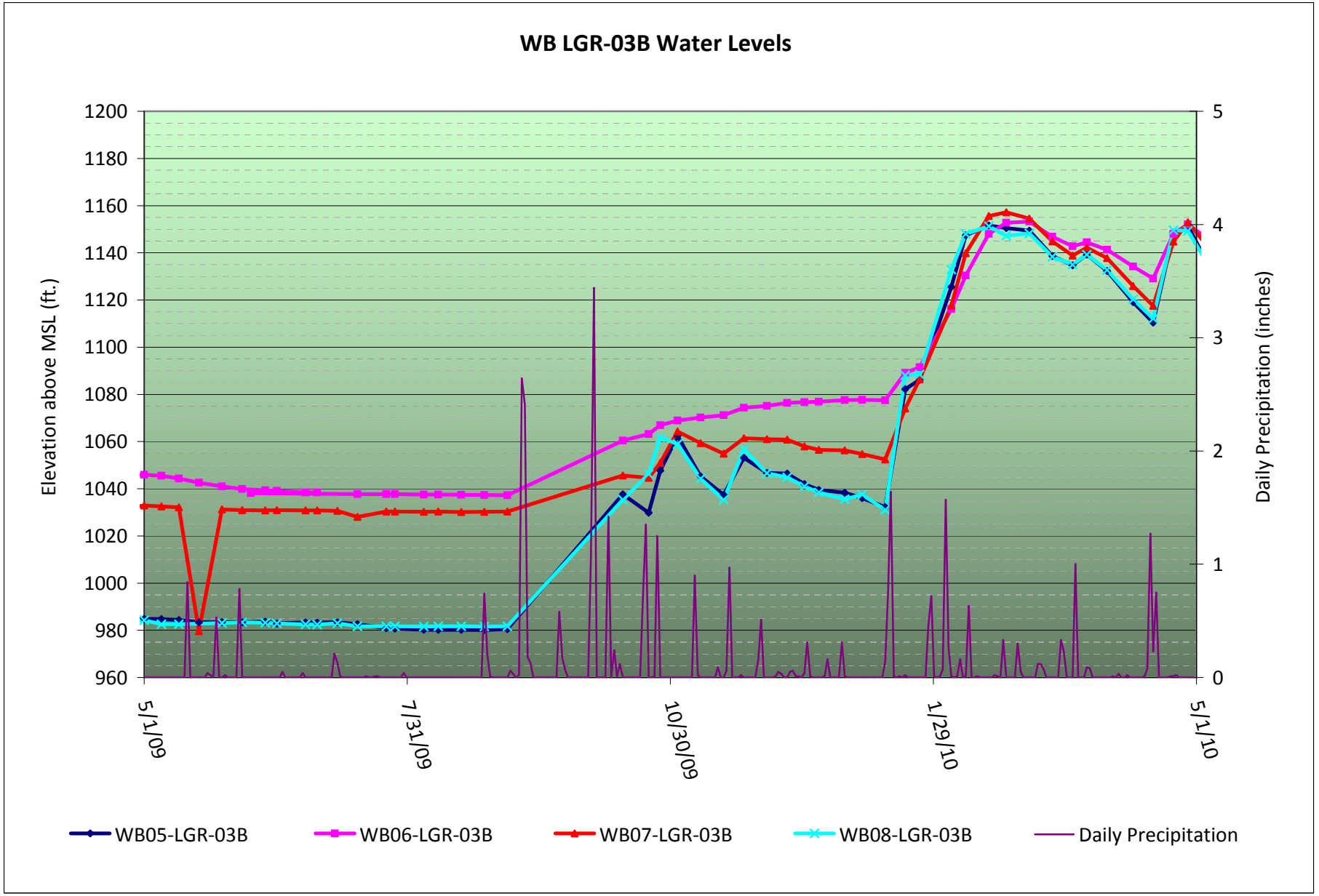


Figure 12.5.2

Storage Tank (UIC) VOC summary
May 2009 - April 2010

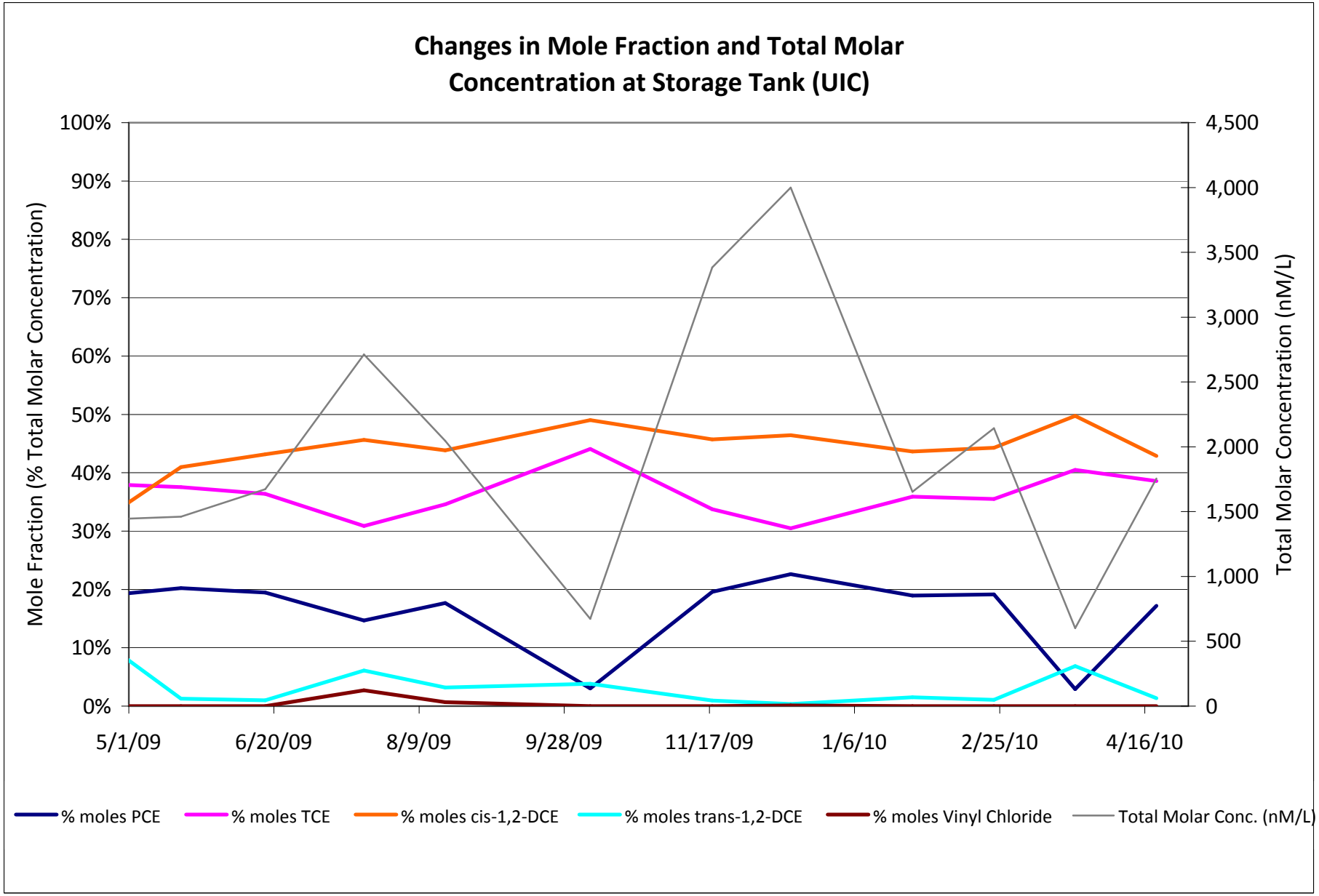


Figure 12.5.5

Cumulative Total Groundwater Applied to SWMU B-3 Trenches 1 and 2
May 2009 - April 2010

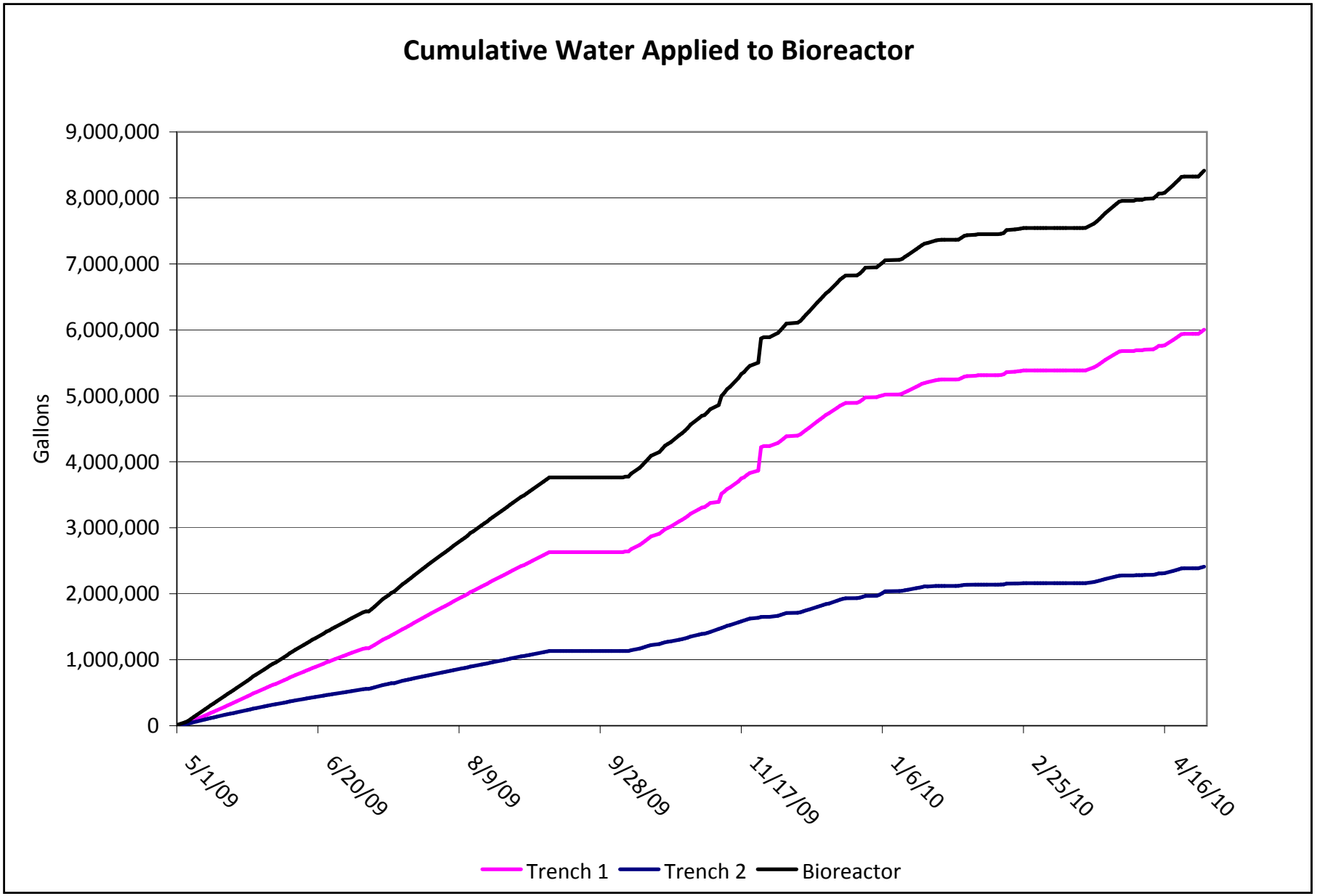
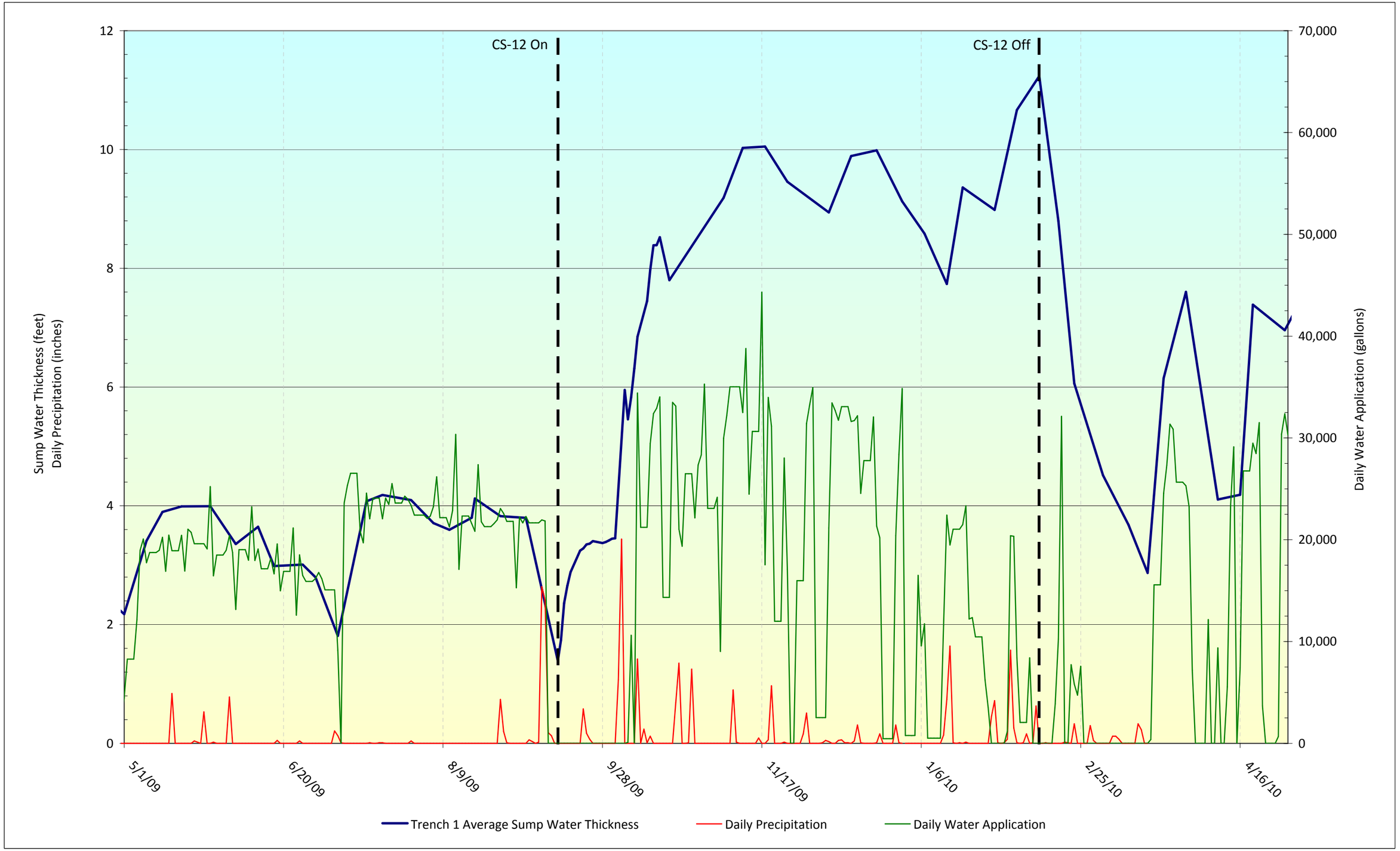


Figure 12.5.6

SWMU B-3 Bioreactor - Trench 1
Average Water Thickness, CS-16 and CS-B3EXW01 Water Application, and Daily Precipitation



Note: CS-12 extracted groundwater used for flood test operations

Figure 12.6.2LGR

CS-MW16-LGR VOC Summary
May 2009 - April 2010

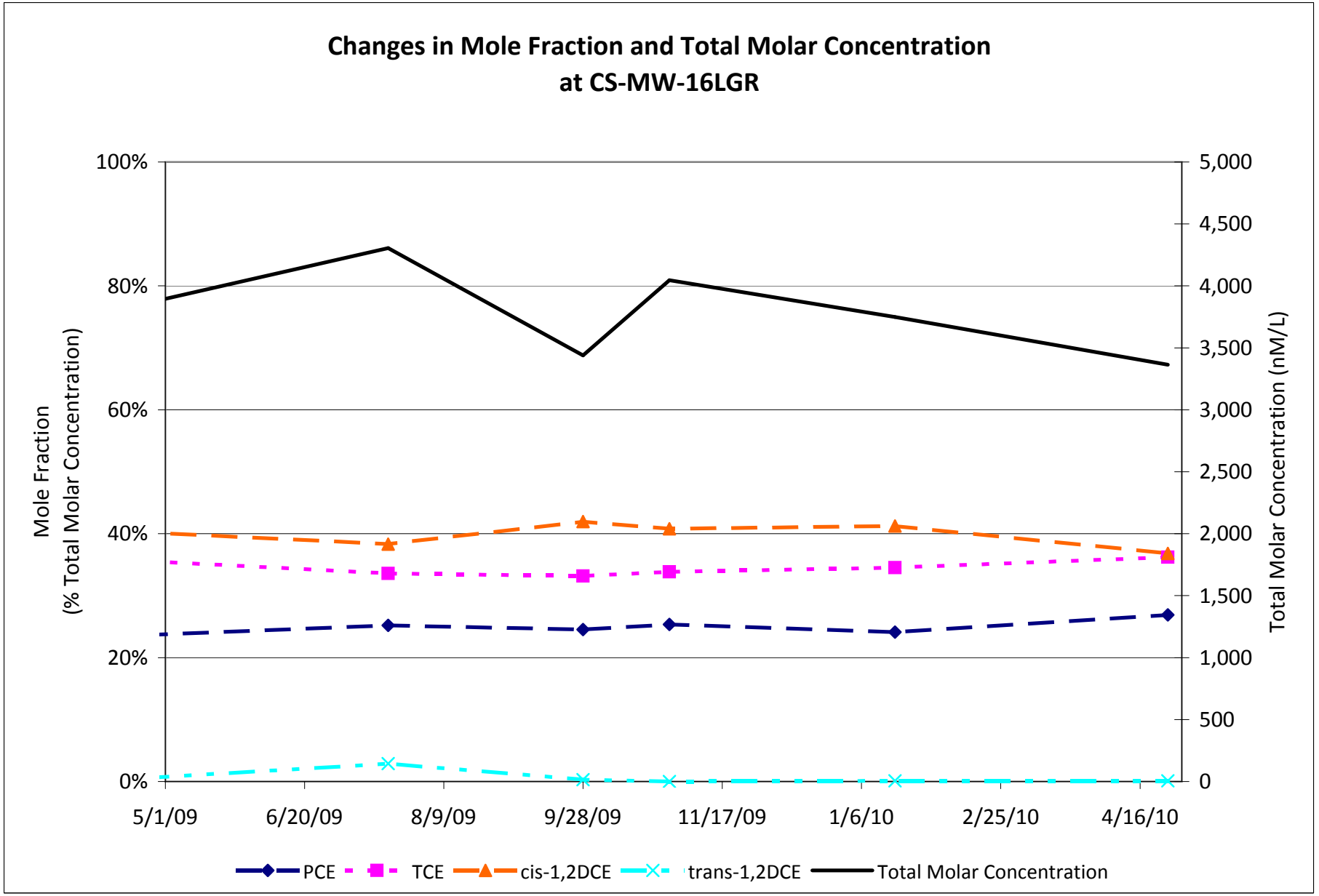


Figure 12.6.2EX1

CS-B3-EXW01 VOC Summary
May 2009 - April 2010

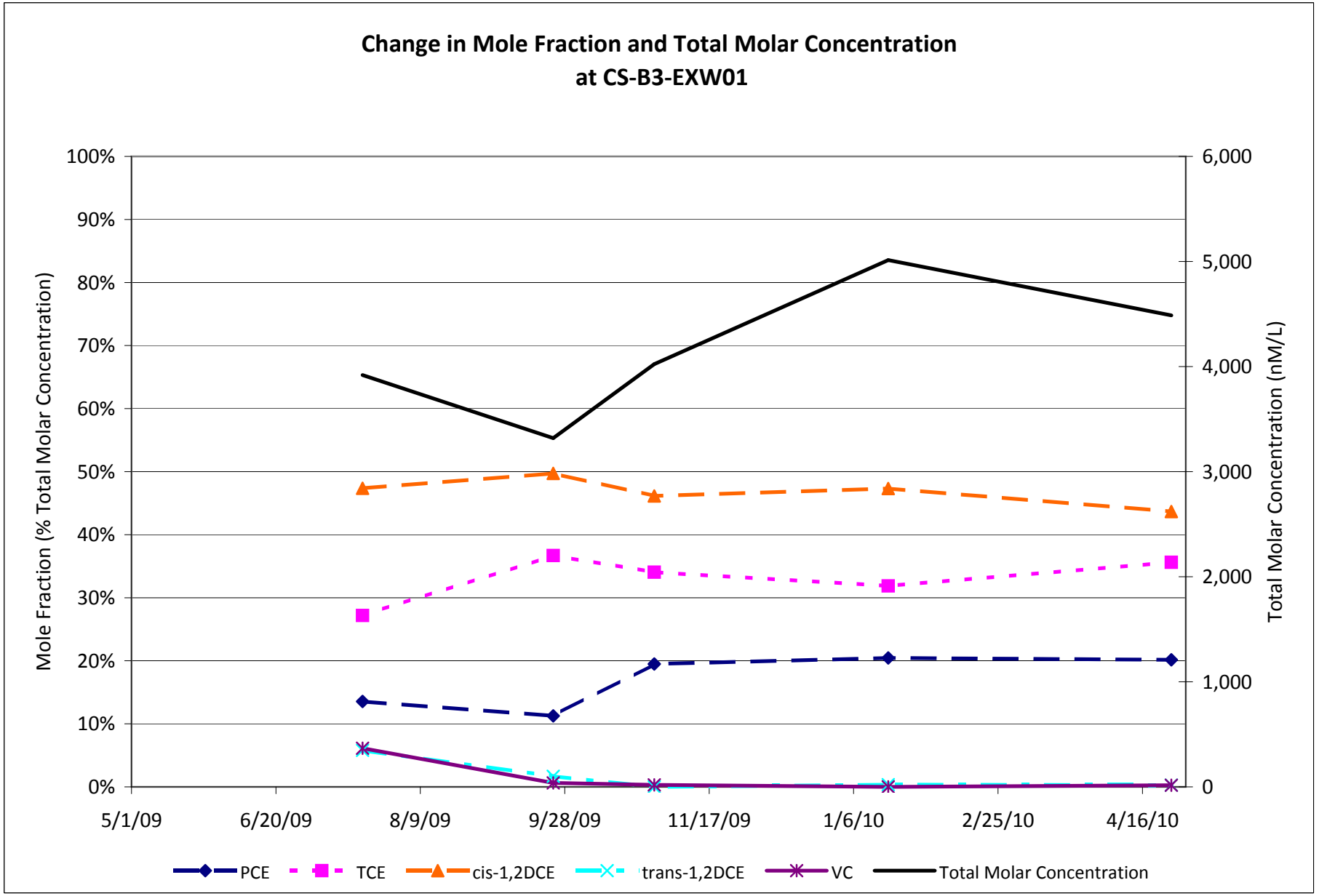


Figure 12.6.2CC

CS-MW16-CC VOC Summary
May 2009 - April 2010

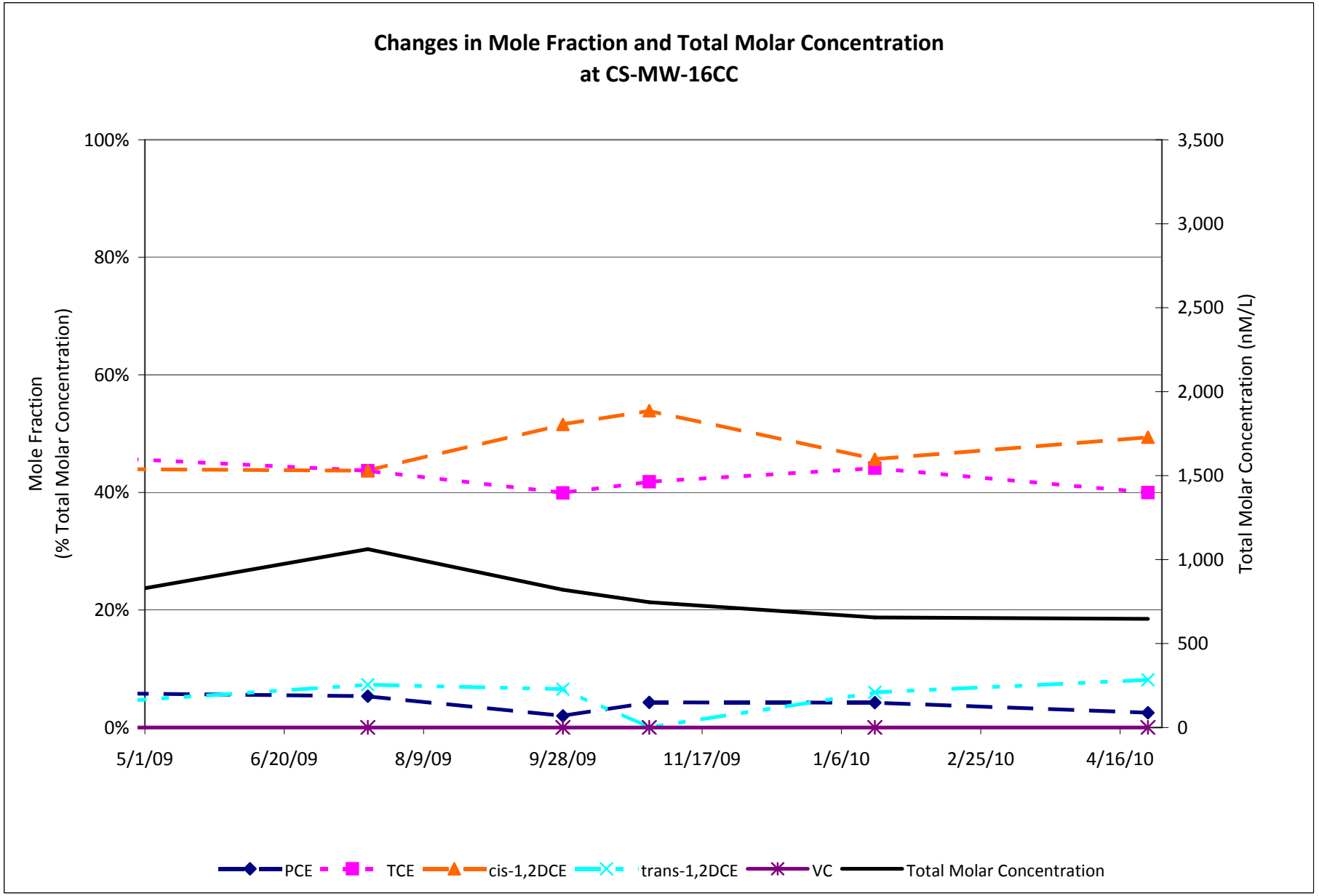


Figure 12.8.7

CSSA Precipitation
May 2009 - April 2010