3.0 Monitoring Results

This section presents the VOC sampling results from July 1, 2008 to December 31, 2008 and the hydrogen and methane sampling results from April 1, 2008 through December 31, 2008.

3.1 Repository Monitoring Data

The repository VOC monitoring results for this reporting period are summarized in Table 3. The individual monitoring results for all nine target analytes for each sample collected at location VOC-A and VOC-B are provided in Attachment 1.

Table 3. Summary of Repository VOC Monitoring Results

Target Compound	No. of Samples	Maximum Detected Value VOC-A (ppbv)	Maximum Detected Value VOC-B (ppbv)	MRLs (ppbv) Per Permit Attachment N Table N-2	No. of Samples > MRL
Carbon Tetrachloride	108	315.06	1.24 J	2	54
Chlorobenzene	108	U	U	2	0
Chloroform	108	15.72	U	2	15
1,1-Dichloroethene	108	7.34 J	U	5	0
1,2-Dichloroethane	108	U	U	2	0
Methylene Chloride	108	27.89	U	5	15
1,1,2,2-Tetrachloroethane	108	U	U	2	0
Toluene	108	3.52 J	0.99 J	5	0
1,1,1-Trichloroethane	108	105.55	0.62J	5	52

ppbv = part per billion by volume

Analytical results qualified as "J" were detected at a concentration greater than the MDL but less than the MRL. Since these results are below the MRL, they are not used to evaluate concentration differences between VOC-A and VOC-B. Only VOC-A values above the MRL are used to evaluate concentration differences between VOC-A and VOC-B. If VOC-A results are above the MRL, those results are compared to the VOC-B reported results. If the corresponding VOC-B sample is a Non Detect (ND) or an estimated value (J), it will be assigned a value of zero. This comparison assumes that there is no concentration of the target compound in the background.

Repository sample results are normalized based on airflow requirements described in the Permit. Some values that were normalized are qualified by the laboratory with a "J" flag even though the final results were above the MRL. The laboratory qualification is still applicable and the normalized concentrations are treated as estimated values. Additionally, some normalized results are not "J" flagged though they are below the MRL. These values were reported by the contract laboratory as being over the MRL, and then normalized down to the reported level (which was below the MRL). These results are not treated as estimated values.

Table 4. Summary of Annual Average Concentration Differences (January 1, 2008 through December 31, 2008)

Target Compound	Running Annual Average Concentration Difference Value (ppbv)	MRLs (ppbv)	COC (ppbv)
Carbon Tetrachloride	38.9	2	165
Chlorobenzene	<MRL	2	220
Chloroform	<MRL	2	180
1,1-Dichloroethene	<MRL	5	100
1,2-Dichloroethane	<MRL	2	45
Methylene Chloride	<MRL	5	1930
1,1,2,2-Tetrachloroethane	<MRL	2	50
Toluene	<MRL	5	190
1,1,1-Trichloroethane	19.0	5	590

ppbv = part per billion by volume
MRL= Method Reporting Limit
COC= Concentration of Concern

3.2 *Disposal Room Monitoring Data*

The following summarizes disposal room monitoring results for the reporting period. Associated data are reported in Attachment 2A.

3.2.1 *Waste Disposal Activities*

Waste disposal determine which VOC monitoring locations are sampled. As soon as a room receives waste, it is subject to monitoring at one location (exhaust side). When waste disposal activities are complete in the disposal room, the exhaust side continues to be monitored, and the inlet side is added to the sampling schedule. On July 1, 2008 the active CH waste emplacement was in Room 3 of Panel 4, the active RH emplacement was in Room 2 of Panel 4. At this stage of filling a panel, Rooms 7, 6, 5, and 4 had two active monitoring locations (exhaust and inlet) and Rooms 3, and 2 had one (exhaust) monitoring location. On December 31, 2008, the active CH waste emplacement was in Room 2 of Panel 4, the active RH emplacement was in Room 1 of Panel 4. At this stage of filling a panel, Rooms 7, 6, 5, 4, and 3 had two active monitoring locations (exhaust and inlet) and Rooms 2, and 1 had one (exhaust) monitoring location.

VOC Monitoring Program Data - Station VOC-A

For Samples Collected Between 7/1/2008 and 12/31/2008 – Concentration (ppbV)

Sample Date	Analysis Date	Lab ID	Sample ID	111TA	1122T	11DCE	12DCA	CCL4	CHBNZ	CHFRM	DCM	C7H8
7/1/2008	7/21/2008	0807030_01A	3303	12.25*	U	0.82* J	U	18.88*	U	0.61* J	3.99* J	0.40* J
7/2/2008	7/21/2008	0807030_03	3305	11.42*	U	0.39* J	U	16.13*	U	0.56* J	4.25* J	0.30* J
7/8/2008	7/28/2008	0807100_02A	3315	15.33*	U	0.71* J	U	22.99*	U	0.94* J	6.09*	0.40* J
7/9/2008	7/28/2008	0807100_04	3317	9.83*	U	0.41* J	U	14.74*	U	0.54* J	3.66* J	0.25* J
7/15/2008	7/29/2008	0807170_01A	3323	11.35*	U	0.36* J	U	16.42*	U	0.61* J	4.00* J	0.32* J
7/16/2008	7/29/2008	0807170_03	3325	10.22*	U	0.37* J	U	15.18*	U	0.57* J	3.47* J	0.36* J
7/22/2008	7/30/2008	0807280_03A	3353	12.12*	U	0.61* J	U	21.50*	U	0.79* J	3.82* J	0.34* J
7/23/2008	7/30/2008	0807280_05	3355	11.05*	U	U	U	17.67*	U	0.74* J	3.75* J	0.40* J
7/30/2008	8/1/2008	0808010_01A	3359	12.09*	U	0.49* J	U	22.84*	U	0.89* J	3.44* J	0.66* J
7/31/2008	8/1/2008	0808010_03	3361	16.50*	U	0.64* J	U	29.00*	U	1.10* J	4.84* J	0.62* J
8/6/2008	8/18/2008	0808140_02A	3371	21.36*	U	0.56* J	U	36.90*	U	1.43* J	5.60* J	0.57* J
8/7/2008	8/18/2008	0808140_04	3373	18.34*	U	0.39* J	U	30.05*	U	1.17* J	5.22* J	0.49* J
8/12/2008	8/18/2008	0808140_14A	3379	15.11*	U	0.34* J	U	27.14*	U	1.08* J	4.36* J	0.48* J
8/13/2008	8/19/2008	0808140_16A	3381	12.56*	U	0.28* J	U	23.16*	U	0.93* J	3.54* J	0.45* J
8/19/2008	8/22/2008	0808210_02A	3391	14.14*	U	U	U	25.63*	U	1.02* J	3.94* J	0.46* J
8/20/2008	8/22/2008	0808210_04	3393	12.85*	U	0.33* J	U	23.40*	U	0.92* J	3.47* J	0.43* J
8/26/2008	8/28/2008	0808270_01A	3415	17.88*	U	0.62* J	U	34.07*	U	1.24* J	4.92* J	0.44* J
8/27/2008	8/28/2008	0808270_03	3417	16.90*	U	0.45* J	U	30.61*	U	1.16* J	4.45* J	0.40* J
9/3/2008	9/8/2008	0809040_01A	3427	15.55*	U	U	U	29.07*	U	1.22* J	4.46* J	0.42* J
9/4/2008	9/8/2008	0809040_03	3429	18.50*	U	0.58* J	U	36.66*	U	1.36* J	4.73* J	0.51* J
9/9/2008	9/15/2008	0809110_02A	3437	18.75*	U	U	U	38.06*	U	1.40* J	5.09* J	0.46* J
9/10/2008	9/15/2008	0809110_04	3439	22.53*	U	0.86* J	U	48.22*	U	1.58* J	5.57* J	0.57* J
9/16/2008	9/19/2008	0809180_01A	3463	22.86*	U	0.51* J	U	43.71*	U	1.47* J	5.37*	0.52* J
9/17/2008	9/19/2008	0809180_03	3465	23.19*	U	0.53* J	U	43.97*	U	1.42* J	5.52*	0.57* J
9/23/2008	10/1/2008	0809260_02A	3473	12.39*	U	0.45* J	U	22.03*	U	1.20* J	4.28* J	0.63* J
9/24/2008	10/1/2008	0809260_04	3475	10.35*	U	0.34* J	U	18.09*	U	1.07* J	3.91* J	0.67* J
9/30/2008	10/2/2008	0810020_01A	3483	12.13*	U	0.42* J	U	21.98*	U	1.11* J	4.39* J	0.77* J
10/1/2008	10/2/2008	0810020_03	3485	5.66* J	U	0.25* J	U	9.45*	U	0.53* J	2.09* J	0.55* J
10/7/2008	10/10/2008	0810090_02A	3493	7.14* J	U	U	U	10.60*	U	0.60* J	2.70* J	0.54* J
10/8/2008	10/10/2008	0810090_04	3495	9.46*	U	0.47* J	U	17.48*	U	0.79* J	2.93* J	0.69* J
10/14/2008	10/17/2008	0810160_02A	3521	9.30*	U	U	U	21.60*	U	0.94* J	2.41* J	0.35* J
10/15/2008	10/17/2008	0810160_04	3523	8.60*	U	0.48* J	U	19.67*	U	0.74* J	2.20* J	0.32* J
10/21/2008	10/24/2008	0810230_01A	3531	7.90*	U	U	U	19.37*	U	0.85* J	1.93* J	0.66* J
10/22/2008	10/24/2008	0810230_03	3533	8.67*	U	0.33* J	U	20.92*	U	0.87* J	2.09* J	0.35* J
10/28/2008	11/3/2008	0810300_01A	3543	14.17*	U	1.30* J	U	34.37*	U	1.19* J	2.97* J	0.40* J
10/29/2008	11/3/2008	0810300_03	3545	28.04*	U	0.85* J	U	71.22*	U	2.93*	6.09* J	0.66* J
11/4/2008	11/6/2008	0811050_01A	3553	23.73*	U	1.10* J	U	66.21*	U	2.70* J	4.91* J	0.66* J
11/5/2008	11/6/2008	0811050_03	3555	25.12*	U	1.30* J	U	67.77*	U	2.82* J	5.30* J	1.32* J
11/11/2008	11/18/2008	0811170_01A	3565	10.60*	U	0.15* J	U	40.72*	U	2.26*	2.28* J	0.38* J
11/12/2008	11/18/2008	0811170_03	3567	30.62*	U	1.13* J	U	75.15*	U	3.20* J	7.14* J	0.96* J
11/18/2008	11/20/2008	0811200_02A	3593	22.49*	U	0.54* J	U	59.11*	U	2.71* J	5.41* J	0.76* J
11/19/2008	11/20/2008	0811200_04	3595	31.37*	U	1.68* J	U	87.77*	U	3.55*	6.23* J	0.91* J
11/24/2008	12/5/2008	0812010_02A	3605	56.89*	U	1.13* J	U	141.71*	U	7.60*	15.20*	1.71* J
11/25/2008	12/5/2008	0812010_04	3607	34.68*	U	0.50* J	U	103.33*	U	6.49*	9.09*	1.16* J
12/2/2008	12/7/2008	0812050_01A	3631	40.57*	U	0.77* J	U	111.31*	U	6.47*	9.67*	1.28* J
12/3/2008	12/7/2008	0812050_03	3633	36.35*	U	0.40* J	U	100.63*	U	5.78*	8.86*	0.89* J
12/9/2008	12/15/2008	0812110_01A	3643	58.40*	U	0.53* J	U	159.42*	U	8.79*	14.51*	0.91* J
12/10/2008	12/15/2008	0812110_03	3645	36.63*	U	U	U	111.04*	U	7.30*	10.39*	0.99* J
12/15/2008	12/18/2008	0812180_01A	3653	54.46*	U	1.00* J	U	144.03*	U	7.83*	13.94*	1.24* J
12/16/2008	12/18/2008	0812180_03	3655	51.91*	U	3.48* J	U	150.52*	U	7.40*	12.36*	0.81* J
12/22/2008	1/7/2009	0901060_01A	3665	62.03*	U	7.02* J	U	!!! 186.62*	U	7.86*	16.40*	1.24* J
12/23/2008	1/7/2009	0901060_03	3667	105.55*	U	7.34* J	U	!!! 315.06*	U	15.72*	27.89*	3.52* J
12/29/2008	1/9/2009	0901060_15A	3675	78.40*	U	3.06* J	U	!!! 220.24*	U	11.19*	21.17*	2.65* J
12/30/2008	1/9/2009	0901060_17	3677	75.65*	U	3.69* J	U	!!! 224.93*	U	11.47*	19.38*	2.32* J

Number of Samples: 54

Detection Summary

Compound	Detection Average	Detection Count
1,1,1-Trichloroethane	24.85	54
1,1,2,2-Tetrachloroethane	0	0
1,1-Dichloroethene	0.92	46
1,2-Dichloroethane	0	0
Carbon Tetrachloride	61.45	54
Chlorobenzene	0	0
Chloroform	2.93	54
Methylene Chloride	6.58	54
Toluene	0.76	54

Legend

111TA = 1,1,1-Trichloroethane

1122T = 1,1,2,2-Tetrachloroethane

11DCE = 1,1-Dichloroethene

12DCA = 1,2-Dichloroethane

CCL4 = Carbon tetrachloride

CHBNZ = Chlorobenzene

CHFRM = Chloroform

DCM = Methylene chloride

C7H8 = Toluene

Flags

B = Compound present in the laboratory blank, background subtraction not performed.

J = Estimated value: Below Method Reporting Limits (MRL), but above Practical Quantitation Limits (PQL).

* = Normalized concentration

ND/U = Compound not detected above Method Detection Limit (MDL)

!!! = Compound exceeds concentration of concern

VOC Monitoring Program Data - Station VOC-B

For Samples Collected Between 7/1/2008 and 12/31/2008 – Concentration (ppbV)

Sample Date	Analysis Date	Lab ID	Sample ID	111TA	1122T	11DCE	12DCA	CCL4	CHBNZ	CHFRM	DCM	C7H8
7/1/2008	7/21/2008	0807030_02	3304	U	U	U	U	0.24* J	U	U	U	U
7/2/2008	7/21/2008	0807030_04	3306	U	U	U	U	U	U	U	U	U
7/8/2008	7/28/2008	0807100_01	3314	U	U	U	U	U	U	U	U	U
7/9/2008	7/28/2008	0807100_03	3316	U	U	U	U	U	U	U	U	U
7/15/2008	7/29/2008	0807170_02	3324	U	U	U	U	U	U	U	U	U
7/16/2008	7/29/2008	0807170_04	3326	U	U	U	U	U	U	U	U	U
7/22/2008	7/30/2008	0807280_02	3352	U	U	U	U	U	U	U	U	U
7/23/2008	7/30/2008	0807280_04	3354	U	U	U	U	U	U	U	U	U
7/30/2008	8/1/2008	0808010_02	3360	U	U	U	U	U	U	U	U	0.24* J
7/31/2008	8/1/2008	0808010_04	3362	U	U	U	U	U	U	U	U	U
8/6/2008	8/18/2008	0808140_01	3370	U	U	U	U	U	U	U	U	U
8/7/2008	8/18/2008	0808140_03	3372	U	U	U	U	U	U	U	U	U
8/12/2008	8/19/2008	0808140_15	3380	U	U	U	U	U	U	U	U	U
8/13/2008	8/19/2008	0808140_17	3382	U	U	U	U	U	U	U	U	0.22* J
8/19/2008	8/22/2008	0808210_01	3390	U	U	U	U	U	U	U	U	U
8/20/2008	8/22/2008	0808210_03	3392	U	U	U	U	U	U	U	U	U
8/26/2008	8/28/2008	0808270_02	3416	U	U	U	U	U	U	U	U	U
8/27/2008	8/28/2008	0808270_04	3418	U	U	U	U	U	U	U	U	U
9/3/2008	9/8/2008	0809040_02	3428	U	U	U	U	U	U	U	U	U
9/4/2008	9/8/2008	0809040_04	3430	U	U	U	U	U	U	U	U	U
9/9/2008	9/15/2008	0809110_01	3436	U	U	U	U	U	U	U	U	U
9/10/2008	9/15/2008	0809110_03	3438	U	U	U	U	U	U	U	U	U
9/16/2008	9/19/2008	0809180_02	3464	U	U	U	U	U	U	U	U	U
9/17/2008	9/19/2008	0809180_04	3466	U	U	U	U	U	U	U	U	0.21* J
9/23/2008	10/1/2008	0809260_01	3472	U	U	U	U	U	U	U	U	U
9/24/2008	10/1/2008	0809260_03	3474	U	U	U	U	U	U	U	U	0.23* J
9/30/2008	10/2/2008	0810020_02	3484	U	U	U	U	U	U	U	U	0.29* J
10/1/2008	10/2/2008	0810020_04	3486	U	U	U	U	U	U	U	U	0.38* J
10/7/2008	10/10/2008	0810090_01	3492	U	U	U	U	U	U	U	U	0.33* J
10/8/2008	10/10/2008	0810090_03	3494	U	U	U	U	U	U	U	U	0.43* J
10/14/2008	10/17/2008	0810160_01	3520	U	U	U	U	U	U	U	U	U
10/15/2008	10/17/2008	0810160_03	3522	U	U	U	U	U	U	U	U	U
10/21/2008	10/24/2008	0810230_02	3532	U	U	U	U	U	U	U	U	0.50* J
10/22/2008	10/24/2008	0810230_04	3534	U	U	U	U	U	U	U	U	U
10/28/2008	11/3/2008	0810300_02	3544	U	U	U	U	U	U	U	U	U
10/29/2008	11/3/2008	0810300_04	3546	U	U	U	U	U	U	U	U	U
11/4/2008	11/6/2008	0811050_02	3554	U	U	U	U	U	U	U	U	U
11/5/2008	11/6/2008	0811050_04	3556	U	U	U	U	U	U	U	U	0.68* J
11/11/2008	11/18/2008	0811170_02	3566	U	U	U	U	U	U	U	U	0.20* J
11/12/2008	11/18/2008	0811170_04	3568	U	U	U	U	U	U	U	U	0.37* J
11/18/2008	11/20/2008	0811200_01	3592	U	U	U	U	U	U	U	U	U
11/19/2008	11/20/2008	0811200_03	3594	U	U	U	U	U	U	U	U	U
11/24/2008	12/5/2008	0812010_01	3604	U	U	U	U	U	U	U	U	U
11/25/2008	12/5/2008	0812010_03	3606	U	U	U	U	0.22* J	U	U	U	0.29* J
12/2/2008	12/7/2008	0812050_02	3632	0.42* J	U	U	U	1.07* J	U	U	U	0.36* J
12/3/2008	12/7/2008	0812050_04	3634	U	U	U	U	U	U	U	U	0.23* J
12/9/2008	12/15/2008	0812110_02	3644	U	U	U	U	U	U	U	U	U
12/10/2008	12/15/2008	0812110_04	3646	U	U	U	U	U	U	U	U	U
12/15/2008	12/18/2008	0812180_02	3654	U	U	U	U	U	U	U	U	U
12/16/2008	12/18/2008	0812180_04	3656	0.29* J	U	U	U	0.78* J	U	U	U	0.28* J
12/22/2008	1/7/2009	0901060_02	3666	0.31* J	U	U	U	0.71* J	U	U	U	U
12/23/2008	1/7/2009	0901060_04	3668	0.62* J	U	U	U	1.24* J	U	U	U	0.77* J
12/29/2008	1/9/2009	0901060_16	3676	U	U	U	U	U	U	U	U	0.99* J
12/30/2008	1/9/2009	0901060_18	3678	U	U	U	U	U	U	U	U	0.71* J

Number of Samples: 54

Detection Summary

Compound	Detection Average	Detection Count
1,1,1-Trichloroethane	0.03	4
1,1,2,2-Tetrachloroethane	0	0
1,1-Dichloroethene	0	0
1,2-Dichloroethane	0	0
Carbon Tetrachloride	0.08	6
Chlorobenzene	0	0
Chloroform	0	0
Methylene Chloride	0	0
Toluene	0.14	19

Legend

111TA = 1,1,1-Trichloroethane

1122T = 1,1,2,2-Tetrachloroethane

11DCE = 1,1-Dichloroethene

12DCA = 1,2-Dichloroethane

CCL4 = Carbon tetrachloride

CHBNZ = Chlorobenzene

CHFRM = Chloroform

DCM = Methylene chloride

C7H8 = Toluene

Flags

B = Compound present in the laboratory blank, background subtraction not performed.

J = Estimated value: Below Method Reporting Limits (MRL), but above Practical Quantitation Limits (PQL).

* = Normalized concentration

ND/U = Compound not detected above Method Detection Limit (MDL)

!!! = Compound exceeds concentration of concern