

3.0 Monitoring Results

This section presents the results of the VOC Monitoring Program from January 1, 2007 to June 30, 2007.

3.1 Repository Monitoring Data

The VOC monitoring results 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)	No. of Samples > MRL
1,1-Dichloroethene	104	2.81“J”	“ND”	5	0
Methylene Chloride	104	9.14	1.23“J”	5	1
Chloroform	104	0.63“J”	“ND”	2	0
1,1,1-Trichloroethane	104	28.33	2.66 “J”	5	37
Carbon Tetrachloride	104	32.61	“2.79”	2	48
1,2-Dichloroethane	104	“ND”	“ND”	2	0
Toluene	104	2.77“J”	1.24“J”	5	0
Chlorobenzene	104	“ND”	“ND”	2	0
1,1,2,2-Tetrachloroethane	104	“ND”	“ND”	2	0

ppbv = part per billion by volume

Analytical results qualified as “J” indicate that the compound is above the Practical Quantitation Limit but below 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 will be the most conservative comparison.

Repository sample results are normalized based on airflow requirements described in the HWFP. Some values that were normalized are qualified with a “J” flag even though the final result was above the MRL. The laboratory qualification is still applicable and is treated as an estimated value. Additionally, some normalized results are not “J” flagged though they are below the MRL. These values were reported by the lab as being over the MRL, and then normalized down

3.1.2 Discussion of Repository Monitoring Results

For the reporting period, there were 104 samples analyzed for each of the 9 target compounds, representing a total of 936 data points. Eighty-six of these data points were above the individual MRL (85 at VOC-A and 1 at VOC-B). Values shown in Attachment 1 include all values reported by the analytical laboratories regardless of the associated MRL.

The running annual average of sample set differences is compared to the concentrations of concern. Table 4 shows that, during this reporting period, none of the running annual average concentrations of target VOCs exceeded the associated COC.

Table 4. Summary of Concentration Differences

Target Compound	Running Annual Average Concentration Difference Values (ppbv)	MRLs (ppbv)	COC (ppbv)
1,1-Dichloroethene	<MRL	5	100
Methylene Chloride	<MRL	5	1930
Chloroform	<MRL	2	180
1,1,1-Trichloroethane	8.17	5	590
Carbon Tetrachloride	8.67	2	165
1,2-Dichloroethane	<MRL	2	45
Toluene	<MRL	5	190
Chlorobenzene	<MRL	2	220
1,1,2,2-Tetrachloroethane	<MRL	2	50

ppbv = part per billion by volume

3.2 Disposal Room Monitoring Data

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

3.2.1 Waste Disposal Activities

Waste disposal is the determining factor in which VOC monitoring locations are activated. As soon as a room receives waste, it is subject to monitoring at one location (exhaust side). When filled it continues to be monitored, and the inlet side is added to the sampling schedule. On January 1, 2007 the active waste emplacement was in Room 1 of Panel 3. At this stage of filling a panel, each of the previous six closed rooms within Panel 3 had two active monitoring locations (exhaust and inlet) and Room 1 had one (exhaust) monitoring location. Upon filling

VOC Monitoring Program Data - Station VOC-A
For Samples Collected Between 1/1/2007 and 6/30/2007 – Concentration (ppbV)

Sample Date	Analysis Date	Lab ID	Sample ID	111TA	1122T	11DCE	12DCA	CCL4	CHBNZ	CHFRM	DCM	C7H8
1/2/2007	1/10/2007	0701050_15A	2229	9.89*	2 ND	5 ND	2 ND	8.02*	2 ND	2 ND	3.12* J	5 ND
1/3/2007	1/10/2007	0701050_17	2231	6.99*	2 ND	5 ND	2 ND	6.90*	2 ND	2 ND	2.15* J	5 ND
1/11/2007	1/24/2007	0701180_01A	2251	12.62*	2 ND	1.01* J	2 ND	12.87*	2 ND	2 ND	3.84* J	5 ND
1/12/2007	1/24/2007	0701180_04	2254	6.40* J	2 ND	5 ND	2 ND	5.44*	2 ND	2 ND	2.19* J	5 ND
1/15/2007	1/26/2007	0701190_02A	2257	9.00*	2 ND	5 ND	2 ND	6.53*	2 ND	2 ND	3.13* J	5 ND
1/16/2007	1/26/2007	0701190_04	2259	6.29* J	2 ND	5 ND	2 ND	4.92*	2 ND	2 ND	2.30* J	5 ND
1/22/2007	1/30/2007	0701250_02A	2269	8.50*	2 ND	5 ND	2 ND	6.56*	2 ND	2 ND	2.93* J	5 ND
1/23/2007	1/30/2007	0701250_04	2271	7.54* J	2 ND	5 ND	2 ND	7.05*	2 ND	2 ND	2.57* J	5 ND
1/30/2007	2/8/2007	0702020_02A	2279	10.90*	2 ND	5 ND	2 ND	8.78*	2 ND	2 ND	3.47* J	5 ND
1/31/2007	2/8/2007	0702020_04	2281	28.33*	2 ND	2.81* J	2 ND	32.61*	2 ND	2 ND	6.93* J	5 ND
2/5/2007	2/13/2007	0702080_02A	2291	12.60*	2 ND	5 ND	2 ND	10.51*	2 ND	2 ND	3.38* J	5 ND
2/5/2007	2/13/2007	0702080_04	2293	12.94*	2 ND	5 ND	2 ND	11.75*	2 ND	2 ND	3.63* J	5 ND
2/12/2007	2/21/2007	0702150_01A	2301	14.27*	2 ND	1.27* J	2 ND	14.24*	2 ND	2 ND	3.77* J	5 ND
2/13/2007	2/21/2007	0702150_04	2309	10.57*	2 ND	5 ND	2 ND	7.62*	2 ND	2 ND	3.53* J	5 ND
2/19/2007	2/28/2007	0702260_02A	2315	6.53* J	2 ND	5 ND	2 ND	9.80*	2 ND	2 ND	1.35* J	5 ND
2/20/2007	2/28/2007	0702260_04	2317	14.04*	2 ND	5 ND	2 ND	11.85*	2 ND	2 ND	4.37* J	5 ND
2/26/2007	3/9/2007	0703020_02	2325	6.40* J	2 ND	5 ND	2 ND	6.71*	2 ND	2 ND	2.02* J	5 ND
2/27/2007	3/9/2007	0703020_04	2327	10.03*	2 ND	5 ND	2 ND	9.40*	2 ND	2 ND	2.99* J	5 ND
3/5/2007	3/14/2007	0703080_01A	2339	16.36*	2 ND	1.34* J	2 ND	16.56*	2 ND	2 ND	4.42* J	5 ND
3/6/2007	3/14/2007	0703080_03	2341	13.39*	2 ND	5 ND	2 ND	13.28*	2 ND	2 ND	4.04* J	5 ND
3/12/2007	3/22/2007	0703150_01A	2349	10.64*	2 ND	0.93* J	2 ND	8.88*	2 ND	2 ND	3.27* J	5 ND
3/13/2007	3/22/2007	0703150_03	2351	10.65*	2 ND	0.90* J	2 ND	9.54*	2 ND	2 ND	2.82* J	5 ND
3/19/2007	3/28/2007	0703220_02A	2365	9.91*	2 ND	5 ND	2 ND	9.32*	2 ND	2 ND	3.07* J	5 ND
3/20/2007	3/28/2007	0703220_04	2367	10.56*	2 ND	5 ND	2 ND	9.96*	2 ND	2 ND	3.27* J	5 ND
3/26/2007	4/4/2007	0703290_02A	2375	8.31*	2 ND	0.81* J	2 ND	8.99*	2 ND	2 ND	2.29* J	5 ND
3/27/2007	4/4/2007	0703290_04	2377	6.40*	2 ND	0.58* J	2 ND	6.97*	2 ND	2 ND	1.81* J	5 ND
4/2/2007	4/12/2007	0704090_01A	2389	7.92*	2 ND	5 ND	2 ND	7.43*	2 ND	2 ND	2.35* J	5 ND
4/3/2007	4/12/2007	0704090_03	2391	12.08*	2 ND	5 ND	2 ND	10.87*	2 ND	2 ND	3.51* J	5 ND
4/9/2007	4/19/2007	0704120_01A	2399	12.75*	2 ND	1.09* J	2 ND	13.06*	2 ND	2 ND	4.01* J	5 ND
4/10/2007	4/19/2007	0704120_03	2401	7.81*	2 ND	0.61* J	2 ND	7.86*	2 ND	2 ND	2.43* J	5 ND
4/16/2007	4/23/2007	0704190_02A	2415	12.77*	2 ND	5 ND	2 ND	12.41*	2 ND	2 ND	3.91* J	5 ND
4/17/2007	4/23/2007	0704190_04	2417	10.57*	2 ND	5 ND	2 ND	9.45*	2 ND	2 ND	3.49* J	5 ND
4/23/2007	5/4/2007	0704260_01	2425	10.46*	2 ND	1.36* J	2 ND	10.15*	2 ND	2 ND	3.55* J	5 ND
4/24/2007	5/4/2007	0704260_03A	2427	8.71*	2 ND	5 ND	2 ND	6.89*	2 ND	2 ND	3.04* J	5 ND
4/30/2007	5/7/2007	0705030_14A	2441	7.75*	2 ND	1.26* J	2 ND	8.88*	2 ND	2 ND	2.46* J	5 ND
5/1/2007	5/8/2007	0705030_16A	2443	7.01* J	2 ND	0.89* J	2 ND	7.62*	2 ND	2 ND	2.84* J	5 ND
5/7/2007	5/11/2007	0705110_02A	2453	9.68*	2 ND	0.48* J	2 ND	8.05*	2 ND	2 ND	3.14* J	0.61* J
5/8/2007	5/11/2007	0705110_04	2455	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
5/14/2007	5/21/2007	0705170_01A	2467	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
5/15/2007	5/22/2007	0705170_03A	2469	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	0.16* J
5/21/2007	5/29/2007	0705240_02A	2479	5.14* J	2 ND	0.87* J	2 ND	4.93*	2 ND	2 ND	1.50* J	1.03* J
5/22/2007	5/29/2007	0705240_04	2481	5.47* J	2 ND	0.53* J	2 ND	4.63*	2 ND	2 ND	1.93* J	0.34* J
5/29/2007	6/7/2007	0706060_02	2495	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	0.80* J
5/30/2007	6/7/2007	0706060_04	2497	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	0.80* J
6/4/2007	6/11/2007	0706080_01A	2505	25.02*	2 ND	1.01* J	2 ND	21.49*	2 ND	0.63* J	8.62* J	2.77* J
6/5/2007	6/11/2007	0706080_03	2507	26.76*	2 ND	0.77* J	2 ND	23.07*	2 ND	0.60* J	9.14*	1.09* J
6/11/2007	6/20/2007	0706180_01A	2521	5.07* J	2 ND	0.30* J	2 ND	4.28*	2 ND	2 ND	2.32* J	0.40* J
6/12/2007	6/20/2007	0706180_03	2523	7.36*	2 ND	0.77* J	2 ND	7.96*	2 ND	2 ND	2.45* J	0.29* J
6/18/2007	6/25/2007	0706220_02A	2533	5.83*	2 ND	5 ND	2 ND	4.48*	2 ND	2 ND	2.79* J	0.53* J
6/19/2007	6/25/2007	0706220_04	2535	2.07* J	2 ND	0.33* J	2 ND	2.60*	2 ND	2 ND	0.70* J	0.20* J
6/25/2007	6/29/2007	0706280_02A	2549	9.32*	2 ND	0.30* J	2 ND	7.52*	2 ND	2 ND	4.05* J	0.51* J
6/26/2007	6/29/2007	0706280_04	2551	4.34*	2 ND	0.26* J	2 ND	4.42*	2 ND	2 ND	1.57* J	0.20* J

Number of Samples: 52

Detection Summary

Compound	Detection Average	Detection Count
1,1,1-Trichloroethane	10.29	47
1,1,2,2-Tetrachloroethane	0	0
1,1-Dichloroethene	0.89	23
1,2-Dichloroethane	0	0
Carbon Tetrachloride	9.64	47
Chlorobenzene	0	0
Chloroform	0.61	2
Methylene Chloride	3.24	47
Toluene	0.69	14

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.
 NJ, J = Estimated value: Below Method Reporting Limits (MRL), but above Practical Quantitation Limits (PQL)
 ND, U = Compound analyzed for, but not detected above the detection limits.
 * = Reported concentrations that have been normalized per HWFP

VOC Monitoring Program Data - Station VOC-B
For Samples Collected Between 1/1/2007 and 6/30/2007 – Concentration (ppbV)

Sample Date	Analysis Date	Lab ID	Sample ID	111TA	1122T	11DCE	12DCA	CCL4	CHBNZ	CHFRM	DCM	C7H8
1/2/2007	1/10/2007	0701050_16	2230	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
1/3/2007	1/10/2007	0701050_18	2232	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
1/11/2007	1/24/2007	0701180_02	2252	5 ND	2 ND	5 ND	2 ND	1.55* J	2 ND	2 ND	5 ND	5 ND
1/12/2007	1/24/2007	0701180_03	2253	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
1/15/2007	1/26/2007	0701190_01	2256	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
1/16/2007	1/26/2007	0701190_03	2258	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
1/22/2007	1/30/2007	0701250_01	2268	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
1/23/2007	1/30/2007	0701250_03	2270	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
1/30/2007	2/8/2007	0702020_01	2278	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
1/31/2007	2/8/2007	0702020_03	2280	1.39* J	2 ND	5 ND	2 ND	2.79* J	2 ND	2 ND	5 ND	5 ND
2/5/2007	2/13/2007	0702080_01	2290	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
2/5/2007	2/13/2007	0702080_03	2292	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
2/12/2007	2/21/2007	0702150_02	2302	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
2/13/2007	2/21/2007	0702150_03	2308	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
2/19/2007	2/28/2007	0702260_01	2314	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
2/20/2007	2/28/2007	0702260_03	2316	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
2/26/2007	3/9/2007	0703020_01	2324	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
2/27/2007	3/9/2007	0703020_03	2326	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
3/5/2007	3/14/2007	0703080_02	2340	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
3/6/2007	3/14/2007	0703080_04	2342	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
3/12/2007	3/22/2007	0703150_02	2350	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
3/13/2007	3/22/2007	0703150_04	2352	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
3/19/2007	3/28/2007	0703220_01	2364	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
3/20/2007	3/28/2007	0703220_03	2366	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
3/26/2007	4/4/2007	0703290_01	2374	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
3/27/2007	4/4/2007	0703290_03	2376	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
4/2/2007	4/12/2007	0704090_02	2390	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
4/3/2007	4/12/2007	0704090_04	2392	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
4/9/2007	4/19/2007	0704120_02	2400	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
4/10/2007	4/19/2007	0704120_04	2402	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
4/16/2007	4/23/2007	0704190_01	2414	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
4/17/2007	4/23/2007	0704190_03	2416	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
4/23/2007	5/4/2007	0704260_02	2426	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
4/24/2007	5/4/2007	0704260_04	2428	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
4/30/2007	5/7/2007	0705030_13	2440	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
5/1/2007	5/8/2007	0705030_15	2442	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
5/7/2007	5/11/2007	0705110_01	2452	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
5/8/2007	5/11/2007	0705110_03	2454	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
5/14/2007	5/21/2007	0705170_02	2468	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
5/15/2007	5/22/2007	0705170_04	2470	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
5/21/2007	5/29/2007	0705240_01	2478	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	0.41* J
5/22/2007	5/29/2007	0705240_03	2480	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
5/29/2007	6/7/2007	0706060_01	2494	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
5/30/2007	6/7/2007	0706060_03	2496	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
6/4/2007	6/11/2007	0706080_02	2506	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	1.24* J
6/5/2007	6/11/2007	0706080_04	2508	5 ND	2 ND	5 ND	2 ND	0.20* J	2 ND	2 ND	5 ND	0.27* J
6/11/2007	6/20/2007	0706180_02	2522	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
6/12/2007	6/20/2007	0706180_04	2524	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
6/18/2007	6/25/2007	0706220_01	2532	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	0.22* J
6/19/2007	6/25/2007	0706220_03	2534	5 ND	2 ND	5 ND	2 ND	2 ND	2 ND	2 ND	5 ND	5 ND
6/25/2007	6/29/2007	0706280_01	2548	2.65* J	2 ND	5 ND	2 ND	2.22* J	2 ND	2 ND	1.23* J	5 ND
6/26/2007	6/29/2007	0706280_03	2550	2.66* J	2 ND	5 ND	2 ND	2.18*	2 ND	2 ND	1.12* J	0.16* J

Number of Samples: 52

Detection Summary

Compound	Detection Average	Detection Count
1,1,1-Trichloroethane	2.23	3
1,1,2,2-Tetrachloroethane	0	0
1,1-Dichloroethene	0	0
1,2-Dichloroethane	0	0
Carbon Tetrachloride	1.78	5
Chlorobenzene	0	0
Chloroform	0	0
Methylene Chloride	1.17	2
Toluene	0.46	5

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.
 NJ, J = Estimated value: Below Method Reporting Limits (MRL), but above Practical Quantitation Limits (PQL)
 ND, U = Compound analyzed for, but not detected above the detection limits.
 * = Reported concentrations that have been normalized per HWFP