- CRQL - Contract Required Quantitation Limit – Defined as the MRL for the purposes of the VOC Monitoring Plan.

Qualifiers are used for data in sample analysis data packages and are reflected in reports. These qualifiers are described as follows:

QUALIFIER DESCRIPTION

U, ND — Compound was analyzed for, but not detected at a concentration above the MDL. The associated numerical value is the sample MRL.

J — Estimated value; the compound was detected at a concentration below the MRL but above the MDL.

B — Compound was present in the laboratory blank.

Q — Results useable, but were not associated with quality control analyses that met all requirements for precision, accuracy, or completeness.

3.0 MONITORING RESULTS

This section presents the VOC analysis results and the hydrogen / methane analysis results from January 1, 2009, to June 30, 2009.

3.1 Repository Monitoring Data

The repository VOC monitoring results for this reporting period are summarized in Table 4. 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. Analytical results are normalized in accordance with Attachment N Section N-3e(1). All repository monitoring results contained within this report have been normalized.

Table 4. Summary of Repository VOC Monitoring Results

Target Compound	No. of Samples	Maximum Detected Value VOC-A (ppbv)	Maximum Detected Value VOC-B (ppbv)	MRL (ppbv) Per Permit Attachment N Table N-2	No. of Samples > MRL
Carbon Tetrachloride	102	207.9	0.55 J	2	38
Chlorobenzene	102	U	U	2	0
Chloroform	102	18.0	U	2	23
1,1-Dichloroethene	102	2.1 J	U	5	0
1,2-Dichloroethane	102	U	U	2	0
Methylene Chloride	102	20.4	U	5	5
1,1,2,2-Tetrachloroethane	102	U	U	2	0
Toluene	102	9.4	7.4	5	2
1,1,1-Trichloroethane	102	75.9	U	5	25

ppbv = part per billion by volume

individual MRL (92 at VOC-A and one at VOC-B). Of the 93 data points 38 were carbon tetrachloride, 25 were 1,1,1 trichloroethane, 23 were chloroform, 5 were methylene chloride, and 2 were toluene. Four sample sets had a concentration difference greater than the COC for carbon tetrachloride (January 6, 2009, at 207.9 ppbv; April 28, 2009, at 175.1 ppbv, April 29, 2009, at 190.3 ppbv, and June 30, 2009, at 167.2 ppbv). Values shown in Attachment 1A and Attachment 1B include all values reported by the analytical laboratory.

The running annual average of sample set differences is compared to the COC. Carbon tetrachloride, 1,1,1-trichlorethane, chloroform, methylene chloride, and toluene each had values reported above the individual MRL from sampling at VOC A. Table 5 shows that, for the period of July 1, 2008, through June 30, 2009, none of the running annual average concentrations of target VOCs exceeded the associated COC and the running annual average concentrations for seven of the target compounds were less than the MRL.

Table 5. Summary of Annual Average Concentration Differences (July 1, 2008, through June 30, 2009)

Target Compound	Running Annual Average Concentration Difference Value (ppbv)	MRL (ppbv)	COC (ppbv)
Carbon Tetrachloride	54.3	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	18.2	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

The waste disposal progress determines 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 January 1, 2009, 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. On June 30,

VOC Monitoring Program Data - Station VOC-A

For Samples Collected Between 1/1/2009 and 6/30/2009 – Concentration (ppbV)

Sample Date	Analysis Date	Lab ID	Sample ID	111TA	1122T	11DCE	12DCA	CCL4	CHBNZ	CHFRM	DCM	C7H8
1/6/2009	1/13/2009	0901080_01A	3687	75.88*	U	1.17* J	U	!!! 207.94*	U	10.11*	20.39*	1.92* J
1/7/2009	1/13/2009	0901080_07	3693	2.31* J	U	U	U	6.40*	U	0.39* J	0.71* J	1.15* J
1/13/2009	1/26/2009	0901190_01	3697	U	U	U	U	U	U	U	U	U
1/14/2009	1/26/2009	0901190_03	3699	U	U	U	U	0.54* J	U	U	U	0.56* J
1/20/2009	2/2/2009	0901260_02	3727	1.09* J	U	U	U	2.84* J	U	U	0.36* J	U
1/21/2009	2/2/2009	0901260_04	3729	U	U	U	U	U	U	U	U	0.59* J
1/27/2009	2/3/2009	0901290_02	3737	U	U	U	U	U	U	U	U	U
1/28/2009	2/3/2009	0901290_04	3739	U	U	U	U	U	U	U	U	U
2/3/2009	2/6/2009	0902050_02	3749	17.94*	U	0.65* J	U	47.94*	U	2.46* J	4.96* J	0.55* J
2/4/2009	2/6/2009	0902050_04	3751	18.55*	U	0.86* J	U	52.72*	U	2.77* J	4.78* J	0.67* J
2/10/2009	2/13/2009	0902120_02	3759	1.57* J	U	U	U	4.09*	U	U	0.44* J	U
2/11/2009	2/13/2009	0902120_04	3761	0.69* J	U	U	U	1.87* J	U	U	0.32* J	U
2/17/2009	2/24/2009	0902230_01	3787	3.28* J	U	U	U	9.33*	U	0.51* J	0.74* J	U
2/18/2009	2/24/2009	0902230_03	3789	2.13* J	U	U	U	5.75*	U	0.38* J	0.69* J	U
2/24/2009	3/5/2009	0902270_01	3797	16.63*	U	0.71* J	U	47.89*	U	2.75*	3.87* J	0.47* J
2/25/2009	3/5/2009	0902270_03	3799	19.28*	U	0.42* J	U	58.75*	U	3.82*	5.28* J	0.67* J
3/3/2009	3/10/2009	0903090_01A	3809	24.68*	U	0.66* J	U	71.95*	U	4.08*	5.57* J	0.56* J
3/4/2009	3/10/2009	0903090_03	3811	22.41*	U	0.75* J	U	67.04*	U	4.23*	5.12* J	0.78* J
3/9/2009	3/27/2009	0903130_01A	3819	14.35*	U	0.78* J	U	37.64*	U	2.27* J	3.41* J	0.35* J
3/10/2009	3/27/2009	0903130_03	3821	18.55*	U	0.51* J	U	61.28*	U	4.01*	4.00* J	0.50* J
3/17/2009	3/29/2009	0903270_02	3851	18.19*	U	0.56* J	U	58.79*	U	3.64*	4.04* J	0.43* J
3/18/2009	3/29/2009	0903270_04	3853	17.75*	U	0.43* J	U	59.61*	U	4.15*	4.16* J	0.45* J
3/23/2009	3/28/2009	0903270_16A	3861	22.71*	U	0.80* J	U	81.80*	U	5.87*	5.00* J	0.46* J
3/24/2009	3/28/2009	0903270_18	3863	28.63*	U	U	U	104.27*	U	7.76*	6.81*	0.39* J
3/30/2009	4/6/2009	0904020_02A	3875	20.30*	U	0.37* J	U	83.04*	U	6.62*	5.01* J	0.28* J
3/31/2009	4/6/2009	0904020_04	3877	U	U	U	U	0.69* J	U	U	U	U
4/7/2009	4/13/2009	0904090_02	3885	U	U	U	U	U	U	U	U	U
4/8/2009	4/13/2009	0904090_04	3887	U	U	U	U	U	U	U	U	U
4/14/2009	4/23/2009	0904210_02A	3899	23.56*	U	0.75* J	U	80.98*	U	6.08*	5.61* J	0.43* J
4/15/2009	4/23/2009	0904210_04	3901	20.16*	U	0.38* J	U	73.32*	U	5.84*	5.11* J	0.42* J
4/21/2009	5/7/2009	0904230_01A	3925	25.40*	U	0.68* J	U	93.48*	U	7.40*	7.08*	0.95* J
4/22/2009	5/7/2009	0904230_03	3927	25.40*	U	0.82* J	U	95.53*	U	7.47*	6.94* J	0.96* J
4/28/2009	5/12/2009	0904300_01A	3941	39.81*	U	0.63* J	U	!!! 175.13*	U	15.47*	12.06*	1.28* J
4/29/2009	5/12/2009	0904300_10	3965	34.79*	U	2.12* J	U	!!! 190.30*	U	17.96*	10.25*	9.38*
5/5/2009	5/11/2009	0905070_01A	3949	1.49* J	U	U	U	6.22*	U	0.73* J	0.58* J	0.35* J
5/6/2009	5/11/2009	0905070_03	3951	2.31* J	U	U	U	8.87*	U	0.89* J	0.81* J	0.32* J
5/11/2009	5/18/2009	0905140_02	3967	2.76* J	U	U	U	16.01*	U	1.85* J	1.05* J	0.36* J
5/12/2009	5/18/2009	0905140_04	3969	2.21* J	U	U	U	12.78*	U	1.47* J	0.79* J	0.42* J
5/20/2009	5/27/2009	0905220_01A	3995	14.62*	U	0.33* J	U	67.05*	U	6.56*	4.29* J	0.51* J
5/21/2009	5/27/2009	0905220_15	4009	7.35* J	U	U	U	37.17*	U	3.87*	2.28* J	0.33* J
5/26/2009	5/28/2009	0905280_02A	4011	5.64* J	U	U	U	24.09*	U	2.49* J	1.64* J	0.53* J
5/27/2009	5/28/2009	0905280_04	4013	12.67*	U	U	U	57.95*	U	5.81*	3.53* J	0.60* J
6/2/2009	6/9/2009	0906050_01A	4033	1.24* J	U	U	U	4.60*	U	0.57* J	0.41* J	0.55* J
6/3/2009	6/9/2009	0906050_03	4035	0.34* J	U	U	U	1.47* J	U	U	U	0.47* J
6/9/2009	6/12/2009	0906110_01A	4057	1.18* J	U	U	U	5.50*	U	0.64* J	0.40* J	0.46* J
6/10/2009	6/12/2009	0906110_03	4059	1.14* J	U	U	U	6.13*	U	0.71* J	0.37* J	0.37* J
6/16/2009	6/22/2009	0906190_02	4081	U	U	U	U	U	U	U	U	0.32* J
6/17/2009	6/22/2009	0906190_04	4083	U	U	U	U	U	U	U	U	1.07* J
6/23/2009	6/25/2009	0906250_01A	4087	14.94*	U	0.69* J	U	93.47*	U	10.27*	3.80* J	0.75* J
6/24/2009	6/25/2009	0906250_03	4089	15.15*	U	0.72* J	U	102.81*	U	11.48*	4.06* J	0.55* J
6/30/2009	7/10/2009	0907090_01A	4091	24.51*	U	1.04* J	U	!!! 167.19*	U	17.90*	6.58* J	0.80* J

Number of Samples: 51

Detection Summary

Compound	Detection Average	Detection Count
1,1,1-Trichloroethane	12.22	41
1,1,2,2-Tetrachloroethane	0	0
1,1-Dichloroethene	0.33	23
1,2-Dichloroethane	0	0
Carbon Tetrachloride	46.90	43
Chlorobenzene	0	0
Chloroform	3.75	37
Methylene Chloride	3.20	40
Toluene	0.64	40

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 1/1/2009 and 6/30/2009 – Concentration (ppbV)

Sample Date	Analysis Date	Lab ID	Sample ID	111TA	1122T	11DCE	12DCA	CCL4	CHBNZ	CHFRM	DCM	C7H8
1/6/2009	1/13/2009	0901080_02	3688	U	U	U	U	U	U	U	U	0.36* J
1/7/2009	1/13/2009	0901080_08	3694	U	U	U	U	0.44* J	U	U	U	1.26* J
1/13/2009	1/26/2009	0901190_02	3698	U	U	U	U	U	U	U	U	0.51* J
1/14/2009	1/26/2009	0901190_04	3700	U	U	U	U	U	U	U	U	0.85* J
1/20/2009	2/2/2009	0901260_01	3726	U	U	U	U	U	U	U	U	0.44* J
1/21/2009	2/2/2009	0901260_03	3728	U	U	U	U	U	U	U	U	0.82* J
1/27/2009	2/3/2009	0901290_01	3736	U	U	U	U	U	U	U	U	U
1/28/2009	2/3/2009	0901290_03	3738	U	U	U	U	U	U	U	U	U
2/3/2009	2/6/2009	0902050_01	3748	U	U	U	U	U	U	U	U	U
2/4/2009	2/6/2009	0902050_03	3750	U	U	U	U	U	U	U	U	U
2/10/2009	2/13/2009	0902120_01	3758	U	U	U	U	U	U	U	U	U
2/11/2009	2/13/2009	0902120_03	3760	U	U	U	U	U	U	U	U	U
2/17/2009	2/24/2009	0902230_02	3788	U	U	U	U	U	U	U	U	U
2/18/2009	2/24/2009	0902230_04	3790	U	U	U	U	U	U	U	U	U
2/24/2009	3/5/2009	0902270_02	3798	U	U	U	U	U	U	U	U	U
2/25/2009	3/5/2009	0902270_04	3800	U	U	U	U	U	U	U	U	0.30* J
3/3/2009	3/10/2009	0903090_02	3810	U	U	U	U	U	U	U	U	U
3/4/2009	3/10/2009	0903090_04	3812	U	U	U	U	U	U	U	U	0.39* J
3/9/2009	3/27/2009	0903130_02	3820	U	U	U	U	U	U	U	U	U
3/10/2009	3/27/2009	0903130_04	3822	U	U	U	U	U	U	U	U	U
3/17/2009	3/29/2009	0903270_01	3850	U	U	U	U	U	U	U	U	U
3/18/2009	3/29/2009	0903270_03	3852	U	U	U	U	U	U	U	U	U
3/23/2009	3/28/2009	0903270_15	3860	U	U	U	U	U	U	U	U	U
3/24/2009	3/28/2009	0903270_17	3862	U	U	U	U	U	U	U	U	U
3/30/2009	4/6/2009	0904020_01	3874	U	U	U	U	U	U	U	U	U
3/31/2009	4/6/2009	0904020_03	3876	U	U	U	U	U	U	U	U	U
4/7/2009	4/13/2009	0904090_01	3884	U	U	U	U	U	U	U	U	U
4/8/2009	4/13/2009	0904090_03	3886	U	U	U	U	U	U	U	U	U
4/14/2009	4/23/2009	0904210_01	3898	U	U	U	U	U	U	U	U	U
4/15/2009	4/23/2009	0904210_03	3900	U	U	U	U	U	U	U	U	U
4/21/2009	5/7/2009	0904230_02	3926	U	U	U	U	U	U	U	U	0.30* J
4/22/2009	5/7/2009	0904230_04	3928	U	U	U	U	U	U	U	U	0.32* J
4/28/2009	5/12/2009	0904300_02	3942	U	U	U	U	0.47* J	U	U	U	0.33* J
4/29/2009	5/12/2009	0904300_09	3964	U	U	U	U	0.55* J	U	U	U	7.41*
5/5/2009	5/11/2009	0905070_02	3950	U	U	U	U	U	U	U	U	0.51* J
5/6/2009	5/11/2009	0905070_04	3952	U	U	U	U	U	U	U	U	0.40* J
5/11/2009	5/18/2009	0905140_01	3966	U	U	U	U	U	U	U	U	0.36* J
5/12/2009	5/18/2009	0905140_03	3968	U	U	U	U	U	U	U	U	0.41* J
5/20/2009	5/27/2009	0905220_02	3996	U	U	U	U	0.43* J	U	U	U	0.30* J
5/21/2009	5/27/2009	0905220_14	4008	U	U	U	U	0.51* J	U	U	U	0.40* J
5/26/2009	5/28/2009	0905280_01	4010	U	U	U	U	0.31* J	U	U	U	0.58* J
5/27/2009	5/28/2009	0905280_03	4012	U	U	U	U	U	U	U	U	0.89* J
6/2/2009	6/9/2009	0906050_02	4034	U	U	U	U	U	U	U	U	0.48* J
6/3/2009	6/9/2009	0906050_04	4036	U	U	U	U	U	U	U	U	0.47* J
6/9/2009	6/12/2009	0906110_02	4058	U	U	U	U	U	U	U	U	0.49* J
6/10/2009	6/12/2009	0906110_04	4060	U	U	U	U	U	U	U	U	0.34* J
6/16/2009	6/22/2009	0906190_01	4080	U	U	U	U	U	U	U	U	0.33* J
6/17/2009	6/22/2009	0906190_03	4082	U	U	U	U	U	U	U	U	0.69* J
6/23/2009	6/25/2009	0906250_02	4088	U	U	U	U	U	U	U	U	U
6/24/2009	6/25/2009	0906250_04	4090	U	U	U	U	U	U	U	U	U
6/30/2009	7/10/2009	0907090_02	4092	U	U	U	U	U	U	U	U	U

Number of Samples: 51

Detection Summary

Compound	Detection Average	Detection Count
1,1,1-Trichloroethane	0	0
1,1,2,2-Tetrachloroethane	0	0
1,1-Dichloroethene	0	0
1,2-Dichloroethane	0	0
Carbon Tetrachloride	0.04	6
Chlorobenzene	0	0
Chloroform	0	0
Methylene Chloride	0	0
Toluene	0.39	26

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