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Department of Energy  
Richland Operations Office  
P.O. Box 550  
Richland, Washington 99352

JUN 04 2004

04-AMCP-0321

Mr. Michael A. Wilson, Program Manager  
Nuclear Waste Program  
State of Washington  
Department of Ecology  
3100 Port of Benton Boulevard  
Richland, Washington 99352

RECEIVED  
JUN 15 2004  
EDMC

Dear Mr. Wilson:

TRANSMITTAL OF THE BURIAL GROUND SAMPLING AND ANALYSIS RESULTS FOR  
JANUARY – MARCH 2004

The purpose of this letter is to transmit “Burial Ground Sampling and Analysis Results for January – March, 2004” (attached). This quarterly letter report has been prepared in response to Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) Milestone M-91-40 (M-91-40), requirement 2, paragraph 3.

Step I (vent riser sampling) of the sampling design in the Sampling and Analysis Plan (SAP) was completed during the October - December 2003 quarter addressed in the previous report. Vapor samples were collected through existing vent risers in trenches T-1, T-4, T-7, T-20 and T-29 and analyzed for volatile organic compounds using field screening instruments. Results for vapor samples submitted for laboratory analysis were received during this quarter (January – March 2004) and are provided in the attached report. Based on the sampling design in the SAP for the 218-W-4C Burial Ground, Step II sampling is planned following the retrieval of the suspect transuranic waste in this burial ground. If you have questions, please contact me, or your staff may contact Joel Hebdon, Director, Office of Environmental Services, on (509) 376-6657.

Sincerely,

  
Matthew S. McCormick, Assistant Manager  
for the Central Plateau

AMCP:GLS

Attachment

cc: See page 2

Mr. Michael A. Wilson  
04-AMCP-0321

-2-

JUN 04 2004

cc w/attach:

N. Ceto, EPA

L. D. Crass, FHI

L. J. Cusack, Ecology

L. L. Fritz, FHI

S. Harris, CTUIR

J. S. Hertz, FHI

F. C. Jamison, Ecology

R. Jim, YN

T. M. Martin, HAB

M. Mills, Ecology

E. J. Murphy-Fitch, FHI

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V. J. Rohay, FHI

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R. T. Wilde, FHI

M. A. Wilson, Ecology

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# BURIAL GROUND SAMPLING AND ANALYSIS RESULTS FOR JANUARY – MARCH 2004

## SUMMARY

Step I of the sampling design in the sampling and analysis plan for the 218-W-4C Burial Ground has been completed. Vapor samples were collected through existing vent risers in trenches T-01, T-04, T-07, T-20, and T-29 and analyzed for volatile organic compounds (VOC) using field screening instruments during the October – December 2003 quarter. Results for vapor samples submitted for laboratory analysis were received during this quarter (January – March 2004) and are provided in this quarterly letter report. Preliminary action levels are not applicable to these vapor samples. Other than incidental and unavoidable vapor releases to atmosphere associated with sampling at the vent risers, no contaminant releases to the environment were documented as a result of the vent riser vapor sampling.

Based on the sampling design in the sampling and analysis plan for the 218-W-4C Burial Ground, Step II sampling is planned following retrieval of the retrievably stored waste.

## 1.0 INTRODUCTION

This quarterly letter report has been prepared in response to *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement) (Ecology et al. 1989) Settlement and Tentative Agreement Interim Milestone M-91-40, Requirement 2, paragraph 3. The sampling and analysis activities summarized in this quarterly letter report were conducted in accordance with DOE/RL-2003-48, *218-W-4C Burial Ground Sampling and Analysis Plan*, issued by the Washington State Department of Ecology on September 12, 2003 as an attachment to Skinnerland 2003, "Issuance of the Final 218-W-4C Sampling and Analysis Plan (SAP) in Conjunction with Administrative Order No. 03NWPKW-5494 Issued on April 30, 2003, by the Washington State Department of Ecology (Ecology) and Modified by Stipulation Approved on July 8, 2003, by the Washington State Pollution Control Hearings Board on July 8, 2003." This letter report covers the quarter from January 2004 through March 2004.

The 218-W-4C sampling and analysis plan (SAP) was developed to determine whether contaminants have been released to the vadose zone from retrievably stored waste<sup>1</sup> in the 218-W-4C Burial Ground in the 200 West Area of the Hanford Site. In the 218-W-4C Burial Ground, Trenches T-01, T-04, T-07, T-20, T-24, and T-29 contain suspect TRU<sup>2</sup> retrievable waste (Figure 1). The waste typically is contained in 208-L (55-gal) drums. A schematic cross section of a retrievable storage trench in the 218-W-4C Burial Ground is shown in Figure 2.

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<sup>1</sup> Retrievably stored for purposes of the *Atomic Energy Act of 1954*.

<sup>2</sup> Transuranic (waste materials contaminated with 100 nCi/g of transuranic materials having half-lives longer than 20 years).

## **BURIAL GROUND SAMPLING AND ANALYSIS RESULTS FOR JANUARY – MARCH 2004**

The 218-W-4C sampling design consists of three steps. Step I is vapor sampling through vent risers in the trenches before waste retrieval. Steps II and III are conducted following waste retrieval. Step II includes sampling the asphalt pad and adjacent soils. Step III involves assessing the data collected in Steps I and II, leading to potential characterization of the substrate soils beneath the asphalt pads.

The Step I sampling in the 218-W-4C Burial Ground and the field screening analysis of the samples were completed during the October – December 2003 quarter and were described in the letter report for October – December 2003 (FH-0400144, “Transmittal of the Burial Ground Sampling and Analysis Results for October-December 2003”). Laboratory analysis of the Step I samples was completed during the January – March 2004 quarter and is described in this quarterly letter report. As specified in the 218-W-4C SAP, the Step II and Step III sampling to characterize the substrate soils will be conducted when the asphalt pad in an entire trench has become accessible and sampling will not interfere with waste retrieval operations. The results of the Step I sampling will be used to focus the Step II sampling.

### **2.0 SAMPLING METHODOLOGY**

During Step I, vapor samples were collected from 84 vent risers that generally were aligned with the centers of engineered trenches T-01, T-04, T-07, T-20, and T-29 in the 218-W-4C Burial Ground. No vent risers existed in trench T-24. Two types of vapor samples were collected. At each trench, vapor samples initially were collected from each riser and contained in Tedlar<sup>3</sup> bags for on-site analysis using a field-screening instrument. A vapor sample then was collected from the vent riser in that trench that had the highest carbon tetrachloride concentration, based on the field-screening results. This vapor sample was contained in a SUMMA<sup>4</sup> canister for laboratory analysis. A total of 91 vapor samples were collected. Of these, 84 samples were collected in Tedlar bags for field screening and 7 samples were collected in SUMMA canisters for laboratory analysis. The samples collected in SUMMA canisters include one from each trench with vent risers, one duplicate, and one additional sample that was inadvertently collected from a vent riser that did not have the highest carbon tetrachloride concentration in that trench.

Vent riser sampling was initiated on October 15, 2003. The SUMMA canister samples for laboratory analysis were collected from vent risers T1-04 and T29-04-N on October 21, 2003, and from vent risers T29-01-S, T4-04, and T7-06 on October 22, 2003. A duplicate SUMMA canister sample was collected from vent riser T4-04 on October 22, 2003. (A SUMMA canister sample was collected from vent riser T29-04-N on October 21, 2003. However, the maximum carbon tetrachloride concentration in trench T-29 had not been detected at this vent riser, so a second SUMMA canister sample was collected in trench T-29 from vent riser T29-01-S on October 22, 2003, to correct this unintentional mistake. Both of these SUMMA canister samples

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<sup>3</sup> Tedlar is a registered trademark of E. I. du Pont de Nemours and Company, Wilmington, Delaware.

<sup>4</sup> SUMMA is a trademark of Moetrics, Inc., Cleveland, Ohio.

## BURIAL GROUND SAMPLING AND ANALYSIS RESULTS FOR JANUARY – MARCH 2004

were submitted for laboratory analysis.) The SUMMA canister sample for laboratory analysis was collected from vent riser T20-03 on December 10, 2003, following use of an aerial lift to collect the last Tedlar bag sample in trench T-20 (FH-0400144).

A sample location number (trench and riser) was established and recorded for each vent riser. The vent risers in each trench were numbered sequentially from east to west. If the vent riser was offset to the north or south of the center of the trench, a notation of “N” or “S” was added to the sample location number to indicate the direction of offset. For example, sample location “T1-06-N” signifies trench 1, vent riser 6, which is offset to the north of the trench centerline. The relative locations of the vent risers are shown on Figure 3.

After the vent riser cap was removed, a 15.2-m- (50-ft-) long piece of TYGON<sup>5</sup> tubing was lowered to the bottom of the riser or until refusal. The tubing was 0.3-cm (0.125-in.) inside diameter and 0.6-cm (0.25-in.) outside diameter with a metal filter on the lower end. The tubing then was pulled back approximately 0.2 m (0.5 ft) to lift the filter off of the bottom of the trench. A 5.08-cm- (2-in.-) diameter plastic disk was slid along the tubing to cover the top of the riser during purging and sampling. The vapor sampling method is shown schematically in Figure 2.

The sample tubing was connected to a sampling pump, which was used to pump vapor for one to two minutes to purge the tubing. Carbon tetrachloride concentrations at the outlet of the pump were monitored using a MIRAN SapphIRE Ambient Air Analyzer<sup>6</sup> (MIRAN analyzer), an infrared detector calibrated to measure carbon tetrachloride. Purging then was continued until the concentration readings on the MIRAN analyzer stabilized or at the discretion of the industrial hygienist in the event that no organics were detected. A vapor sample then was collected in a 1-L Tedlar bag for analysis. Following sample collection, the sample tubing was removed from the riser and the cap was replaced.

After the Tedlar bag samples from all accessible risers in a trench had been analyzed, a vapor sample was collected in a SUMMA canister from the vent riser with the highest carbon tetrachloride concentration, based on field screening results. The sampling methodology was similar to that used for collecting Tedlar bag samples. Following the 1- to 2-minute purge, the valve on the canister was opened for 1 minute to allow vapor to flow into the 6-L canister. The SUMMA canisters were transported to the laboratory for analysis.

### 3.0 ANALYTICAL RESULTS

During Step I sampling at the 218-W-4C Burial Ground, vapor samples were collected from inside the engineered trenches through vent risers. Most of the samples were collected near the

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<sup>5</sup> TYGON is a trademark of Norton Performance Plastics Corporation, a Saint-Gobain Company, Akron, Ohio.

<sup>6</sup> MIRAN and the SapphIRE Ambient Air Analyzer are registered trademarks of Thermo Electron Corporation, Franklin, Massachusetts.

## BURIAL GROUND SAMPLING AND ANALYSIS RESULTS FOR JANUARY – MARCH 2004

base of the trench, which is typically approximately 5 m (16 ft) below the engineered surface overlying the trench (FH-0400144).

The SUMMA canister samples were analyzed in the laboratory for VOCs, using a gas chromatograph/mass spectrometer according to a modified EPA Method TO-15 (EPA/625/R-96/010b, *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air*). Results for the detected analytes, including tentatively identified compounds, are summarized in Table 1. Results for all analytes are provided in Table 2.

The sample and duplicate sample from vent riser T4-04 required multiple dilutions to bring the tetrachloroethylene (PCE) into calibration range. The very high concentration of PCE in the initial lower dilutions of these samples saturated the instrument detector, requiring the laboratory to recondition the mass spectrometer detector. The samples then were analyzed at higher dilutions. Only one other compound (1-butanol) also was detected at the high dilution level in the T4-04 sample (sample B17TL2), and no other compounds were detected at the high dilution level in the T4-04 duplicate sample (sample B17TL3).

The chromatograms from analyses of these T4-04 samples at lower dilutions were used to identify the presence of additional analytes. The concentrations of these additional analytes cannot be quantified, because the internal standard recovery was low as a result of the detector saturation, caused by the high PCE concentrations. However, the relative concentrations of these additional analytes can be evaluated. At low dilutions, the PCE saturation of the instrument detector masked the instrument response for analytes with retention times similar to that for PCE.

In the sample from vent riser T4-04 (sample B17TL2), the following ten analytes were detected at a lower dilution (approximately in order of relatively decreasing concentration based on peak heights) in addition to PCE and 1-butanol: 1,1,1-trichloroethane (1,1,1-TCA) (as a tentatively identified compound), trichloroethene (TCE), 1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)<sup>7</sup>, chloroform, methylene chloride, methyl chloride, trichloromonofluoromethane (Freon 11), carbon tetrachloride, 1,1-dichloroethane (1,1-DCA) (as a tentatively identified compound), and n-butane. Approximately 25 VOCs were detected with relative concentrations lower than the concentrations of these ten.

In the duplicate sample from vent riser T4-04 (sample B17TL3), the following ten analytes were detected at a lower dilution (approximately in order of relatively decreasing concentration based on peak heights) in addition to PCE: 1,1,1-TCA (as a tentatively identified compound), TCE, chloroform, 1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113), methylene chloride, carbon tetrachloride, methyl chloride, trichloromonofluoromethane (Freon 11), 1,1-DCA (as a tentatively identified compound), and 1,2-DCA. Approximately 25 VOCs were detected with relative concentrations lower than the concentrations of these ten. The compounds detected in the analysis of this duplicate sample could have been affected by residual contaminants in the

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<sup>7</sup> Freon is a trademark of E. I. du Pont de Nemours and Company, Wilmington, Delaware.

## BURIAL GROUND SAMPLING AND ANALYSIS RESULTS FOR JANUARY – MARCH 2004

analytical equipment remaining from analysis of the previous high concentration sample from vent riser T4-04.

For all of the vent riser samples, the highest concentration of PCE (14,000,000 ppbv) was detected in the sample from vent riser T4-04 (Table 1). Because of the high dilution of this sample, concentrations for the other analytes present could not be quantified, and this comparison among vent riser results cannot be made for the other analytes present.

As described in the quarterly report for October – December 2003 (FH-0400144), the Tedlar bag samples were analyzed using a Photovac 10S Plus<sup>8</sup> gas chromatograph equipped with a photoionization detector (11.7 eV lamp). The gas chromatograph was configured to analyze eight VOCs: carbon tetrachloride, chloroform, methylene chloride, 1,1,1-TCA, 1,1,2-TCA, 1,1-DCA, TCE, and PCE.

Table 3 provides the laboratory results for the same eight VOCs that were analyzed during field screening of the Tedlar bag samples. Table 3 includes only the samples from the vent riser in each trench with the maximum carbon tetrachloride concentration, based on field screening. Table 4 provides the field screening results for the Tedlar bag samples collected from the same vent risers that the SUMMA canister samples were collected from. (Note: In the quarterly letter report for October – December 2003 [FH-0400144], a similar table provided the maximum concentration for each of the eight VOCs in all of the vent riser samples from each trench, based on field screening. Table 4 in this quarterly letter report provides the concentration for each of these eight VOCs in a single vent riser sample, based on field screening.)

The laboratory results and field screening results generally agree. The highest concentration of PCE was detected in the Tedlar bag and SUMMA canister samples from vent riser T4-04. All seven of the other VOCs detected during field screening of the Tedlar bag sample from vent riser T4-04 also were detected during laboratory analysis of the SUMMA canister from vent riser T4-04. Carbon tetrachloride was detected in all of the SUMMA canister samples and all of the corresponding Tedlar bag samples. For the eight VOCs analyzed in the five SUMMA canister and corresponding Tedlar bag samples from the vent riser in each trench that had the maximum carbon tetrachloride concentration, based on field screening (40 sampling results for each), the laboratory and field screening analyses agreed in terms of detection or nondetection of each analyte in 85 percent of the 40 sample results for each sampling and analytical method.

During the field screening using the gas chromatograph, confirmatory analyses for carbon tetrachloride and chloroform were performed using the Innova<sup>9</sup> 1312 multi-gas analyzer to add a level of confidence to the gas chromatography data. As noted in the quarterly report for October – December 2003 (FH-0400144), the confirmatory analyses on October 15 through October 20, 2003, showed good correlation between the gas chromatograph and the Innova

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<sup>8</sup> Photovac 10S Plus is a trademark of Photovac, Inc., Waltham, Massachusetts.

<sup>9</sup> Innova is a trademark of Innova AirTech Instruments A/S, Ballerup, Denmark

## BURIAL GROUND SAMPLING AND ANALYSIS RESULTS FOR JANUARY – MARCH 2004

multi-gas analyzer. On October 21 and October 22, 2003, however, concentration data from the gas chromatograph for carbon tetrachloride and chloroform were consistently lower than concentration data from the Innova multi-gas analyzer. It was believed that the gas chromatograph detector lamp had degraded and was no longer reliable for these two compounds and that the Innova multi-gas analyzer data were more representative.

As explained in the quarterly report for October – December 2003, no independently prepared standards were available to check the calibration of the gas chromatograph to evaluate whether the gas chromatograph lamp was unreliable for the other VOCs as well. It was suggested that the analyses of the SUMMA canister samples potentially could be used to check the gas chromatograph performance (FH-0400144).

Field screening of vent riser samples T4-04, T7-06, and T20-03 was potentially affected by the degraded gas chromatograph lamp. The laboratory analysis of the sample from vent riser T4-04 cannot be used to evaluate the field screening data because only one analyte (PCE) could be quantified. The laboratory and field screening analyses of the samples from vent riser T7-06 are in general agreement. The laboratory analysis of the sample from vent riser T20-03 detected fewer compounds than the field screening analysis.

These few laboratory analyses cannot be used to evaluate the field screening gas chromatograph performance quantitatively. However, as noted in the quarterly report for October – December 2003, a positive detection of a compound still indicates that it is present in the sample. As a result, the field screening gas chromatograph data still can be used to guide the Step II sampling, which was the basis for the Step I sampling in the sampling design.

### 4.0 QUALITY CONTROL

For vent riser vapor samples collected in SUMMA canisters, the field quality control consisted of duplicate samples and equipment blank samples. As specified in the SAP (DOE/RL-2003-48), one duplicate SUMMA canister sample was collected during vent riser sampling. The duplicate was collected from vent riser T4-04, based on field screening data that indicated a high likelihood that the sample would contain contaminated vapor. The only VOC detected at the high dilution level necessary for analysis of the sample and duplicate sample was PCE. For this single analyte detected in both the sample and duplicate, the relative percent difference (RPD) was calculated according to the formula:

$$RPD = \frac{(C_1 - C_2) \times 100}{(C_1 + C_2) / 2}$$

where:

$C_1$  = the larger of the two observed values

$C_2$  = the smaller of the two observed values.

## **BURIAL GROUND SAMPLING AND ANALYSIS RESULTS FOR JANUARY – MARCH 2004**

The RPD was 77 percent. This RPD is not within the required precision of 25 percent. Both the sample and the duplicate results were qualified with the data flag "D" (i.e., analyte was identified at a secondary dilution factor). The multiple dilutions required for analysis of these samples are the likely reason for the higher RPD.

The purpose of collecting equipment blanks is to verify the adequacy of sampling equipment decontamination procedures. As noted in the SAP (DOE/RL-2003-48), the SUMMA canisters are analyzed for cleanliness at the laboratory.

The percent recovery for the laboratory control samples analyzed for the SUMMA canister samples submitted in October and December was within the specified limits of 70 to 130. This indicates that the laboratory analyses of the VOC concentrations were accurate within 30 percent, as required by the SAP.

No analytes were detected in the blank quality control samples analyzed for the October samples. One analyte (acetaldehyde) was detected in the blank quality control sample analyzed for the December sample (Table 2). Historically, this analyte is considered ubiquitous and likely to be detected in blank samples. The low concentration of acetaldehyde in the blank sample did not exceed 5 percent of the sample concentration and, therefore, is considered to be acceptable.

No holding times were exceeded during collection and laboratory analysis of SUMMA canister samples from vent risers.

### **5.0 COMPARISON TO REGULATORY REQUIREMENTS**

As noted in CP-16886, *Data Quality Objectives Summary Report for the 218-W-4C Burial Ground Contaminant Release Investigation*, preliminary action levels are not applicable to VOC vapor samples.

### **6.0 DOCUMENTED CONTAMINANT RELEASES TO THE ENVIRONMENT**

Other than incidental and unavoidable vapor releases to atmosphere associated with sampling at the vent risers, no contaminant releases to the environment were documented as a result of the vent riser vapor sampling. The vent riser vapor samples were collected from within the engineered trench. The Step II and Step III characterization of the asphalt pad and vadose zone is designed to evaluate whether contaminants within the engineered trench were released to the environment.

### **7.0 PLANNED AND/OR SCHEDULED ADDITIONAL WORK**

The analysis of the SUMMA canister samples was completed during this quarter (January – March 2004). The Step I sampling and analysis for the 218-W-4C Burial Ground is complete.

## BURIAL GROUND SAMPLING AND ANALYSIS RESULTS FOR JANUARY – MARCH 2004

Based on the sampling design for the 218-W-4C Burial Ground, Step II sampling is planned following completion of Step I sampling and retrieval of the suspect TRU waste. The Step II characterization will be scheduled when the asphalt pad in an entire trench has become accessible and sampling will not interfere with waste retrieval operations.

### 8.0 REFERENCES

*Atomic Energy Act of 1954*, 42 USC 2011, et seq.

CP-16886, 2003, *Data Quality Objectives Summary Report for the 218-W-4C Burial Ground Contaminant Release Investigation*, Rev. 0, Fluor Hanford, Inc., Richland, Washington.

DOE/RL-2003-48, 2003, *218-W-4C Burial Ground Sampling and Analysis Plan*, Rev. 0, U.S. Department of Energy, Richland, Operations Office, Richland, Washington. Issued as an attachment to the Skinnerland letter listed below.

Ecology, EPA, and DOE, 1989, *Hanford Federal Facility Agreement and Consent Order*, 2 vols., Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, Washington, as amended.

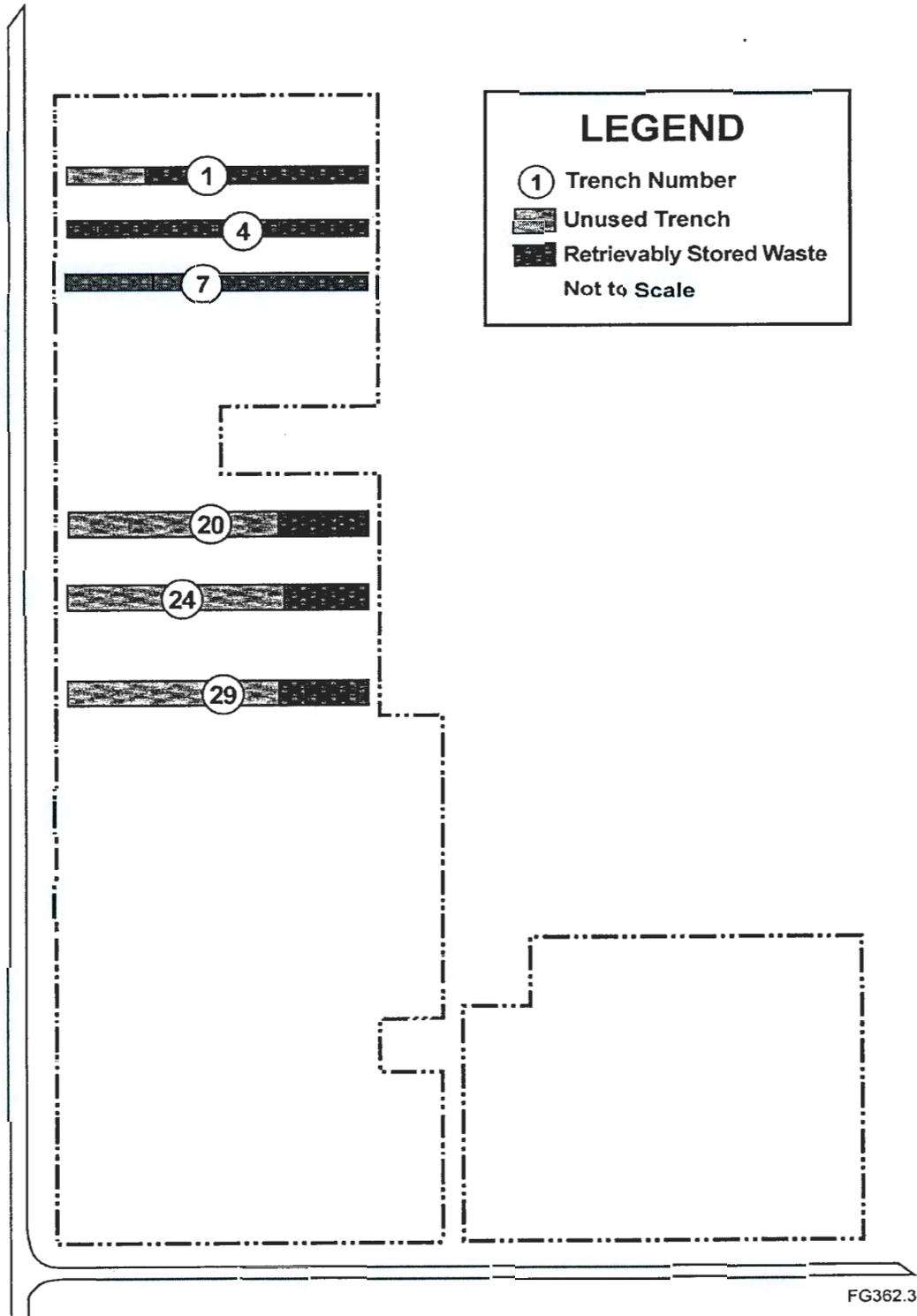
EPA/625/R-96/010b, 1999, *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition*, U.S. Environmental Protection Agency, Washington, D.C.

FH-0400144, 2004, "Transmittal of the Burial Ground Sampling and Analysis Results for October-December 2003," (letter to K. A. Klein, U. S. Department of Energy, Richland Operations Office, from R. G. Gallagher), Fluor Hanford, Inc., Richland, Washington, February 17.

Skinnerland, R., 2003, "Issuance of the Final 218-W-4C Sampling and Analysis Plan (SAP) in Conjunction with Administrative Order No. 03NWPKW-5494 Issued on April 30, 2003, by the Washington State Department of Ecology (Ecology) and Modified by Stipulation Approved on July 8, 2003, by the Washington State Pollution Control Hearings Board on July 8, 2003," (letter to K. A. Klein, U. S. Department of Energy, Richland Operations Office), Washington State Department of Ecology, Olympia, Washington, September 12. Attachment is DOE/RL-2003-48 listed above.

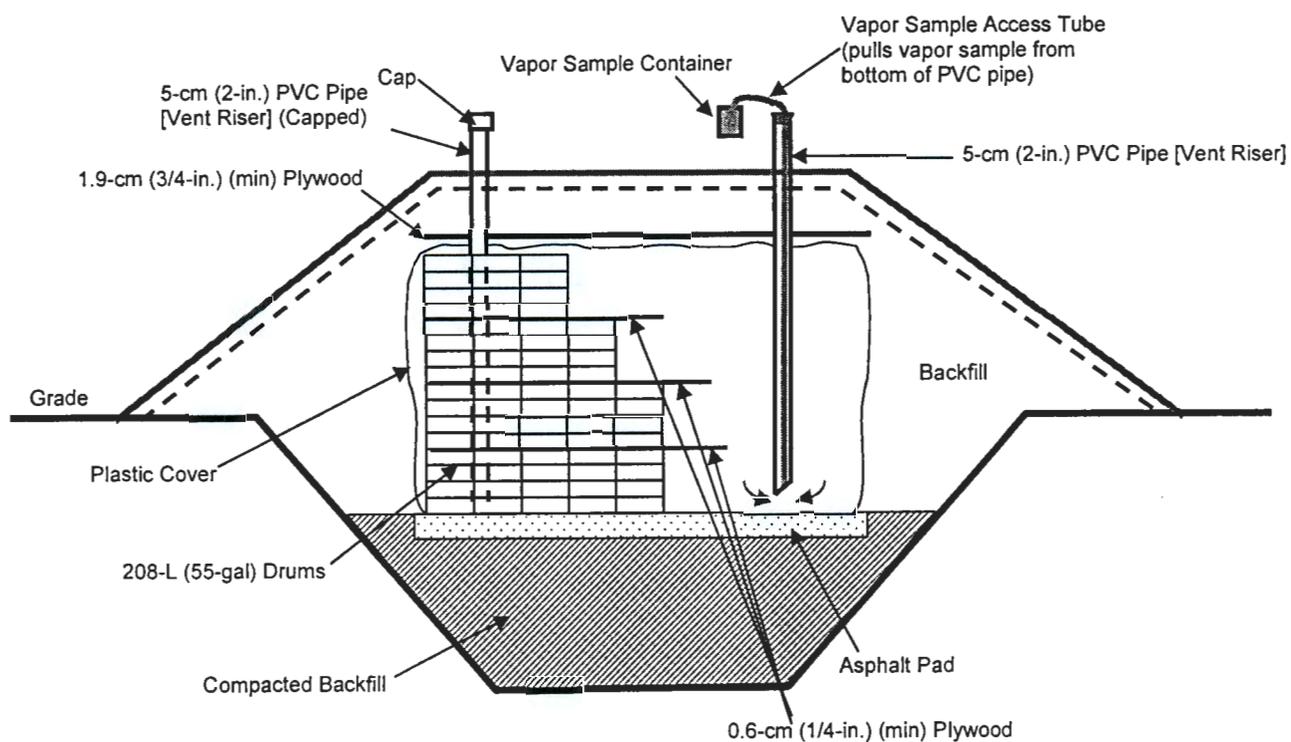
# BURIAL GROUND SAMPLING AND ANALYSIS RESULTS FOR JANUARY – MARCH 2004

Figure 1. Locations of Retrievably Stored Waste Trenches at the 218-W-4C Burial Ground.



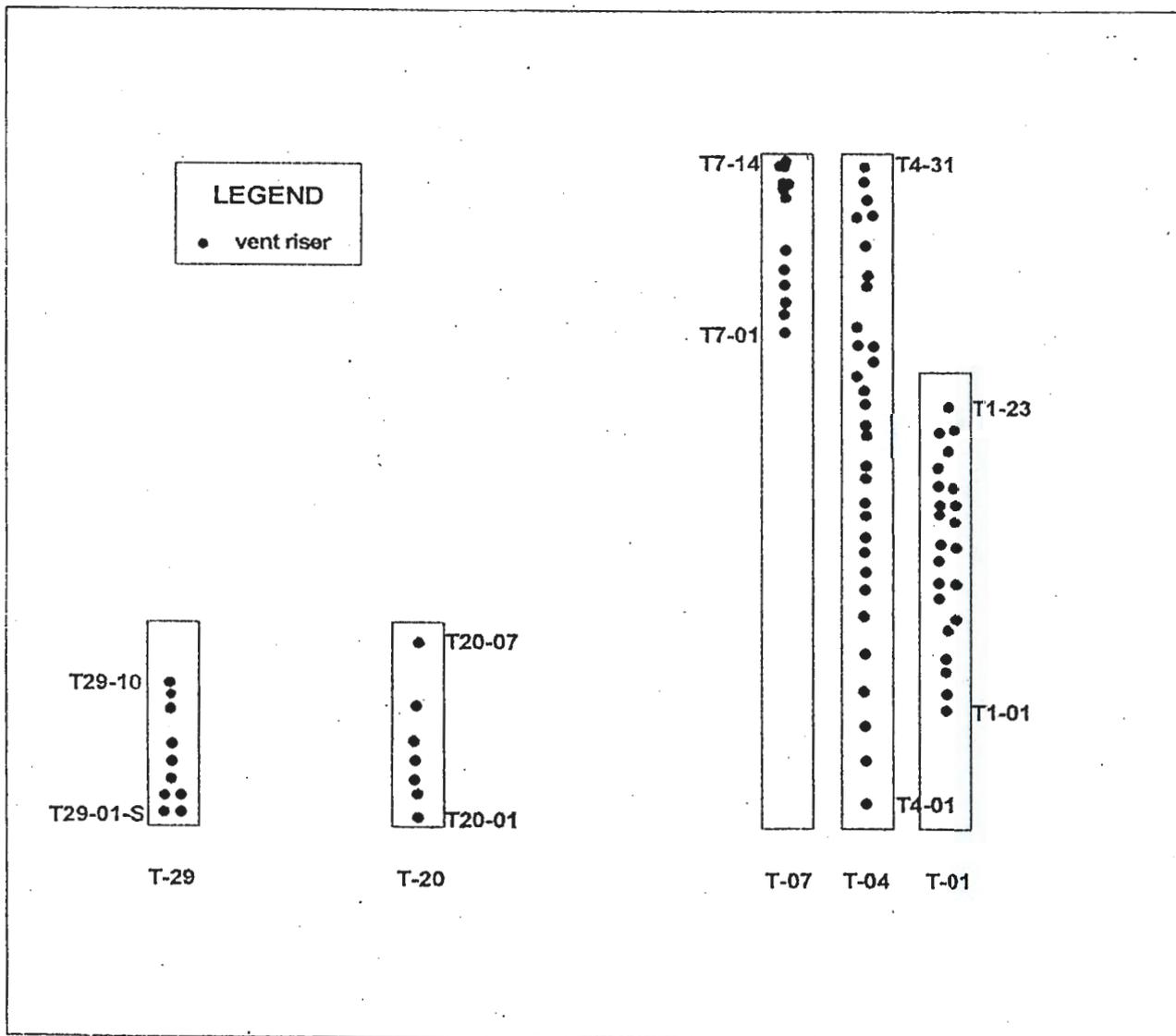
## BURIAL GROUND SAMPLING AND ANALYSIS RESULTS FOR JANUARY – MARCH 2004

Figure 2. Schematic View of 218-W-4C Burial Ground Trench and Vent Riser Sampling Method.



PVC = polyvinylchloride.

Figure 3. Locations of Vent Risers in 218-W-4C Burial Ground.



BURIAL GROUND SAMPLING AND ANALYSIS RESULTS  
FOR JANUARY - MARCH 2004

Table 1. Analytes Detected by Laboratory Analysis of 218-W-4C Burial Ground Step I Vent Riser Samples. (2 Pages)

Analyte	CAS Number	Concentration Detected in Vent Riser Samples (ppbv)						
		Vent Riser T1-04	Vent Riser T4-04	Vent Riser T4-04 duplicate	Vent Riser T7-06	Vent Riser T20-03	Vent Riser T29-01-S*	Vent Riser T29-04-N*
		B17TK9	B17TL2	B17TL3	B17TL4	B184P4	B17TL1	B17TL0
1-Chlorobutane <sup>b</sup>	109-69-3							280
1,1-Dichloroethane <sup>b</sup>	75-34-3						16	
1,1,1-Trichloroethane <sup>b</sup>	71-55-6	110			40		68	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1				44			
1,2-Dichloroethane	107-06-2						13	
1-Butanol	71-36-3		320,000 D				12	
2-Butanone	78-93-3						46	31
3-Methylhexane	589-34-4						78	
Acetaldehyde	75-07-0				22	15 B		70
Acetic acid, methylester <sup>b</sup>	79-20-9						29	
Acetone	67-64-1				14		220	140
Acetonitrile	75-05-8							17
Benzene	71-43-2						33	19
Carbon Tetrachloride	56-23-5	16			2,700 D	18	3,400 D	1,900 D
Choroethane	75-00-3				21		180	87
Chloroform	67-66-3				95		75	40
Chloromethane	74-87-3						730 D	220
Dichlorodifluoromethane	75-71-8	NA	NA	NA	NA	910 D	NA	NA
Ethanol	64-17-5							23
Methanol	67-56-1						430 D	230
Methylene Chloride	75-09-2	51					110	59
n-Heptane	142-82-5						19	11

BURIAL GROUND SAMPLING AND ANALYSIS RESULTS  
FOR JANUARY - MARCH 2004

Table 1. Analytes Detected by Laboratory Analysis of 218-W-4C Burial Ground Step I Vent Riser Samples. (2 Pages)

Analyte	CAS Number	Concentration Detected in Vent Riser Samples (ppbv)						
		Vent Riser T1-04	Vent Riser T4-04	Vent Riser T4-04 duplicate	Vent Riser T7-06	Vent Riser T20-03	Vent Riser T29-01-S <sup>a</sup>	Vent Riser T29-04-N <sup>a</sup>
		B17TK9	B17TL2	B17TL3	B17TL4	B184P4	B17TL1	B17TL0
n-Butane	106-97-8	20					66	25
Tetrachloroethene	127-18-4	25,000 D	14,000,000 D	6,200,000 D	36,000 D		2,400 D	2,800 D
Toluene	108-88-3						16	
Trichloroethene	79-01-6	16			21			
Trichloromonofluoromethane	75-69-4	800 D			7,900 D	8,600 D		
Vinyl Chloride	75-01-4						17	

<sup>a</sup> A SUMMA canister sample was collected from vent riser T29-04-N in trench T-29 on October 21, 2003. However, the maximum carbon tetrachloride concentration in Trench T-29 was detected at vent riser T29-01-S. A second SUMMA canister sample was collected in trench T-29 from vent riser T29-01-S on October 22, 2003 to correct this unintentional mistake. Both of these SUMMA canister samples were submitted for laboratory analysis.

<sup>b</sup> Tentatively identified compound.

B = analyte found in associated blank.

CAS = Chemical Abstracts Service registry number.

D = analyte was identified at a secondary dilution factor.

NA = not analyzed.

ppbv = parts per billion by volume.

Table 2. Laboratory Results for Samples Collected Through Vent Risers in the 218-W-4C Burial Ground Trenches. (18 Pages)

Vent Riser	HEIS Number	Sample Date	Analysis Date	CAS Number	Constituent	Value (ppbv)	Qualifier
T1-04	B17TK9	10/21/2003	11/4/2003	71-55-6	1,1,1-Trichloroethane <sup>a</sup>	110	
T1-04	B17TK9	10/21/2003	11/4/2003	79-34-5	1,1,2,2-Tetrachloroethane	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	79-00-5	1,1,2-Trichloroethane	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	75-35-4	1,1-Dichloroethene	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	120-82-1	1,2,4-Trichlorobenzene	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	95-63-6	1,2,4-Trimethylbenzene	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	107-06-2	1,2-Dichloroethane	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	123-91-1	1,4-Dioxane	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	71-36-3	1-Butanol	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	592-41-6	1-Hexene	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	71-23-8	1-Propanol	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	78-93-3	2-Butanone	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	110-43-0	2-Heptanone	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	591-78-6	2-Hexanone	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	107-83-5	2-Methylpentane	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	107-87-9	2-Pentanone	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	67-63-0	2-Propanol	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	106-35-4	3-Heptanone	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	589-34-4	3-Methylhexane	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	108-10-1	4-Methyl-2-Pentanone	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	75-07-0	Acetaldehyde	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	67-64-1	Acetone	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	75-05-8	Acetonitrile	10	U

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Vent Riser	HEIS Number	Sample Date	Analysis Date	CAS Number	Constituent	Value (ppbv)	Qualifier
T1-04	B17TK9	10/21/2003	11/4/2003	71-43-2	Benzene	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	123-72-8	Butyraldehyde	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	109-74-0	Butyronitrile	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	56-23-5	Carbon tetrachloride	16	
T1-04	B17TK9	10/21/2003	11/4/2003	108-90-7	Chlorobenzene	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	75-00-3	Chloroethane	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	67-66-3	Chloroform	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	74-87-3	Chloromethane	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	108-94-1	Cyclohexanone	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	124-18-5	Decane	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	64-17-5	Ethanol	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	107-12-0	Ethyl cyanide	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	100-41-4	Ethylbenzene	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	110-00-9	Furan	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	87-68-3	Hexachlorobutadiene	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	110-54-3	Hexane	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	111-13-7	Hexyl methyl ketone	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	67-56-1	Methanol	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	108-87-2	Methyl cyclohexane	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	75-09-2	Methylene chloride	51	
T1-04	B17TK9	10/21/2003	1/14/2004	108-38-3	m-Xylene	20	U
T1-04	B17TK9	10/21/2003	11/4/2003	142-82-5	n-Heptane	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	106-97-8	n-Butane	20	
T1-04	B17TK9	10/21/2003	11/4/2003	111-65-9	n-Octane	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	111-84-2	Nonane	10	U

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Vent Riser	HEIS Number	Sample Date	Analysis Date	CAS Number	Constituent	Value (ppbv)	Qualifier
T1-04	B17TK9	10/21/2003	11/4/2003	95-47-6	o-Xylene	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	109-66-0	Pentane	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	100-42-5	Styrene	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	127-18-4	Tetrachloroethene	25000	D
T1-04	B17TK9	10/21/2003	11/4/2003	109-99-9	Tetrahydrofuran	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	108-88-3	Toluene	10	U
T1-04	B17TK9	10/21/2003	11/4/2003	79-01-6	Trichloroethene	16	
T1-04	B17TK9	10/21/2003	11/4/2003	75-69-4	Trichloromonofluoromethane	800	D
T1-04	B17TK9	10/21/2003	11/4/2003	75-01-4	Vinyl chloride	10	U
T4-04	B17TL2	10/22/2003	1/14/2004	79-34-5	1,1,2,2-Tetrachloroethane	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	79-00-5	1,1,2-Trichloroethane	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	75-35-4	1,1-Dichloroethene	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	120-82-1	1,2,4-Trichlorobenzene	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	95-63-6	1,2,4-Trimethylbenzene	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	107-06-2	1,2-Dichloroethane	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	123-91-1	1,4-Dioxane	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	71-36-3	1-Butanol	320000	D
T4-04	B17TL2	10/22/2003	1/14/2004	592-41-6	1-Hexene	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	71-23-8	1-Propanol	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	78-93-3	2-Butanone	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	110-43-0	2-Heptanone	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	591-78-6	2-Hexanone	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	107-83-5	2-Methylpentane	300000	DU

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Vent Riser	HEIS Number	Sample Date	Analysis Date	CAS Number	Constituent	Value (ppbv)	Qualifier
T4-04	B17TL2	10/22/2003	1/14/2004	107-87-9	2-Pentanone	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	67-63-0	2-Propanol	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	106-35-4	3-Heptanone	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	589-34-4	3-Methylhexane	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	108-10-1	4-Methyl-2-Pentanone	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	75-07-0	Acetaldehyde	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	67-64-1	Acetone	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	75-05-8	Acetonitrile	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	71-43-2	Benzene	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	123-72-8	Butyraldehyde	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	109-74-0	Butyronitrile	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	56-23-5	Carbon tetrachloride	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	108-90-7	Chlorobenzene	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	75-00-3	Chloroethane	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	67-66-3	Chloroform	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	74-87-3	Chloromethane	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	108-94-1	Cyclohexanone	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	124-18-5	Decane	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	64-17-5	Ethanol	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	107-12-0	Ethyl cyanide	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	100-41-4	Ethylbenzene	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	110-00-9	Furan	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	87-68-3	Hexachlorobutadiene	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	110-54-3	Hexane	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	111-13-7	Hexyl methyl ketone	300000	DU

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Vent Riser	HEIS Number	Sample Date	Analysis Date	CAS Number	Constituent	Value (ppbv)	Qualifier
T4-04	B17TL2	10/22/2003	1/14/2004	67-56-1	Methanol	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	108-87-2	Methyl cyclohexane	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	75-09-2	Methylene chloride	300000	DU
T4-04	B17TL2	10/22/2003	11/5/2003	108-38-3	m-Xylene	600000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	142-82-5	n-Heptane	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	106-97-8	n-Butane	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	111-65-9	n-Octane	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	111-84-2	Nonane	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	95-47-6	o-Xylene	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	109-66-0	Pentane	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	100-42-5	Styrene	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	127-18-4	Tetrachloroethene	14000000	D
T4-04	B17TL2	10/22/2003	1/14/2004	109-99-9	Tetrahydrofuran	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	108-88-3	Toluene	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	79-01-6	Trichloroethene	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	75-69-4	Trichloromonofluoromethane	300000	DU
T4-04	B17TL2	10/22/2003	1/14/2004	75-01-4	Vinyl chloride	300000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	79-34-5	1,1,2,2-Tetrachloroethane	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	79-00-5	1,1,2-Trichloroethane	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	75-35-4	1,1-Dichloroethene	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	120-82-1	1,2,4-Trichlorobenzene	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	95-63-6	1,2,4-Trimethylbenzene	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	107-06-2	1,2-Dichloroethane	120000	DU

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Vent Riser	HEIS Number	Sample Date	Analysis Date	CAS Number	Constituent	Value (ppbv)	Qualifier
T4-04	B17TL3	10/22/2003	11/5/2003	123-91-1	1,4-Dioxane	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	71-36-3	1-Butanol	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	592-41-6	1-Hexene	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	71-23-8	1-Propanol	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	78-93-3	2-Butanone	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	110-43-0	2-Heptanone	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	591-78-6	2-Hexanone	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	107-83-5	2-Methylpentane	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	107-87-9	2-Pentanone	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	67-63-0	2-Propanol	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	106-35-4	3-Heptanone	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	589-34-4	3-Methylhexane	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	108-10-1	4-Methyl-2-Pentanone	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	75-07-0	Acetaldehyde	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	67-64-1	Acetone	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	75-05-8	Acetonitrile	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	71-43-2	Benzene	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	123-72-8	Butyraldehyde	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	109-74-0	Butyronitrile	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	56-23-5	Carbon tetrachloride	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	108-90-7	Chlorobenzene	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	75-00-3	Chloroethane	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	67-66-3	Chloroform	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	74-87-3	Chloromethane	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	108-94-1	Cyclohexanone	120000	DU

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Vent Riser	HEIS Number	Sample Date	Analysis Date	CAS Number	Constituent	Value (ppbv)	Qualifier
T4-04	B17TL3	10/22/2003	11/5/2003	124-18-5	Decane	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	64-17-5	Ethanol	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	107-12-0	Ethyl cyanide	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	100-41-4	Ethylbenzene	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	110-00-9	Furan	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	87-68-3	Hexachlorobutadiene	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	110-54-3	Hexane	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	111-13-7	Hexyl methyl ketone	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	67-56-1	Methanol	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	108-87-2	Methyl cyclohexane	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	75-09-2	Methylene chloride	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	108-38-3	m-Xylene	240000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	142-82-5	n- Heptane	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	106-97-8	n-Butane	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	111-65-9	n-Octane	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	111-84-2	Nonane	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	95-47-6	o-Xylene	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	109-66-0	Pentane	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	100-42-5	Styrene	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	127-18-4	Tetrachloroethene	6200000	D
T4-04	B17TL3	10/22/2003	11/5/2003	109-99-9	Tetrahydrofuran	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	108-88-3	Toluene	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	79-01-6	Trichloroethene	120000	DU
T4-04	B17TL3	10/22/2003	11/5/2003	75-69-4	Trichloromonofluoromethane	120000	DU

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Vent Riser	HEIS Number	Sample Date	Analysis Date	CAS Number	Constituent	Value (ppbv)	Qualifier
T4-04	B17TL3	10/22/2003	11/5/2003	75-01-4	Vinyl chloride	120000	DU
T7-06	B17TL4	10/22/2003	11/5/2003	71-55-6	1,1,1-Trichloroethane <sup>a</sup>	40	
T7-06	B17TL4	10/22/2003	11/5/2003	79-34-5	1,1,2,2-Tetrachloroethane	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	44	
T7-06	B17TL4	10/22/2003	11/5/2003	79-00-5	1,1,2-Trichloroethane	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	75-35-4	1,1-Dichloroethene	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	120-82-1	1,2,4-Trichlorobenzene	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	95-63-6	1,2,4-Trimethylbenzene	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	107-06-2	1,2-Dichloroethane	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	123-91-1	1,4-Dioxane	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	71-36-3	1-Butanol	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	592-41-6	1-Hexene	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	71-23-8	1-Propanol	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	78-93-3	2-Butanone	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	110-43-0	2-Heptanone	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	591-78-6	2-Hexanone	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	107-83-5	2-Methylpentane	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	107-87-9	2-Pentanone	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	67-63-0	2-Propanol	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	106-35-4	3-Heptanone	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	589-34-4	3-Methylhexane	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	108-10-1	4-Methyl-2-Pentanone	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	75-07-0	Acetaldehyde	22	
T7-06	B17TL4	10/22/2003	11/5/2003	67-64-1	Acetone	14	

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Vent Riser	HEIS Number	Sample Date	Analysis Date	CAS Number	Constituent	Value (ppbv)	Qualifier
T7-06	B17TL4	10/22/2003	11/5/2003	75-05-8	Acetonitrile	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	71-43-2	Benzene	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	123-72-8	Butyraldehyde	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	109-74-0	Butyronitrile	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	56-23-5	Carbon tetrachloride	2700	D
T7-06	B17TL4	10/22/2003	11/5/2003	108-90-7	Chlorobenzene	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	75-00-3	Chloroethane	21	
T7-06	B17TL4	10/22/2003	11/5/2003	67-66-3	Chloroform	95	
T7-06	B17TL4	10/22/2003	11/5/2003	74-87-3	Chloromethane	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	108-94-1	Cyclohexanone	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	124-18-5	Decane	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	64-17-5	Ethanol	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	107-12-0	Ethyl cyanide	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	100-41-4	Ethylbenzene	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	110-00-9	Furan	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	87-68-3	Hexachlorobutadiene	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	110-54-3	Hexane	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	111-13-7	Hexyl methyl ketone	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	67-56-1	Methanol	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	108-87-2	Methyl cyclohexane	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	75-09-2	Methylene chloride	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	108-38-3	m-Xylene	20	U
T7-06	B17TL4	10/22/2003	11/5/2003	142-82-5	n-Heptane	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	106-97-8	n-Butane	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	111-65-9	n-Octane	10	U

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Vent Riser	HEIS Number	Sample Date	Analysis Date	CAS Number	Constituent	Value (ppbv)	Qualifier
T7-06	B17TL4	10/22/2003	11/5/2003	111-84-2	Nonane	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	95-47-6	o-Xylene	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	109-66-0	Pentane	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	100-42-5	Styrene	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	127-18-4	Tetrachloroethene	36000	D
T7-06	B17TL4	10/22/2003	11/5/2003	109-99-9	Tetrahydrofuran	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	108-88-3	Toluene	10	U
T7-06	B17TL4	10/22/2003	11/5/2003	79-01-6	Trichloroethene	21	
T7-06	B17TL4	10/22/2003	11/5/2003	75-69-4	Trichloromonofluoromethane	7900	D
T7-06	B17TL4	10/22/2003	11/5/2003	75-01-4	Vinyl chloride	10	U
T20-03	B184P4	12/10/2003	1/8/2004	79-34-5	1,1,2,2-Tetrachloroethane	10	U
T20-03	B184P4	12/10/2003	1/8/2004	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U
T20-03	B184P4	12/10/2003	1/8/2004	79-00-5	1,1,2-Trichloroethane	10	U
T20-03	B184P4	12/10/2003	1/8/2004	75-35-4	1,1-Dichloroethene	10	U
T20-03	B184P4	12/10/2003	1/8/2004	120-82-1	1,2,4-Trichlorobenzene	10	U
T20-03	B184P4	12/10/2003	1/8/2004	95-63-6	1,2,4-Trimethylbenzene	10	U
T20-03	B184P4	12/10/2003	1/8/2004	107-06-2	1,2-Dichloroethane	10	U
T20-03	B184P4	12/10/2003	1/8/2004	123-91-1	1,4-Dioxane	10	U
T20-03	B184P4	12/10/2003	1/8/2004	71-36-3	1-Butanol	10	U
T20-03	B184P4	12/10/2003	1/8/2004	592-41-6	1-Hexene	10	U
T20-03	B184P4	12/10/2003	1/8/2004	71-23-8	1-Propanol	10	U
T20-03	B184P4	12/10/2003	1/8/2004	78-93-3	2-Butanone	10	U
T20-03	B184P4	12/10/2003	1/8/2004	110-43-0	2-Heptanone	10	U
T20-03	B184P4	12/10/2003	1/8/2004	591-78-6	2-Hexanone	10	U

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Vent Riser	HEIS Number	Sample Date	Analysis Date	CAS Number	Constituent	Value (ppbv)	Qualifier
T20-03	B184P4	12/10/2003	1/8/2004	107-83-5	2-Methylpentane	10	U
T20-03	B184P4	12/10/2003	1/8/2004	107-87-9	2-Pentanone	10	U
T20-03	B184P4	12/10/2003	1/8/2004	67-63-0	2-Propanol	10	U
T20-03	B184P4	12/10/2003	1/8/2004	106-35-4	3-Heptanone	10	U
T20-03	B184P4	12/10/2003	1/8/2004	589-34-4	3-Methylhexane	10	U
T20-03	B184P4	12/10/2003	1/8/2004	108-10-1	4-Methyl-2-Pentanone	10	U
T20-03	B184P4	12/10/2003	1/8/2004	75-07-0	Acetaldehyde	15	B
T20-03	B184P4	12/10/2003	1/8/2004	67-64-1	Acetone	10	U
T20-03	B184P4	12/10/2003	1/8/2004	75-05-8	Acetonitrile	10	U
T20-03	B184P4	12/10/2003	1/8/2004	71-43-2	Benzene	10	U
T20-03	B184P4	12/10/2003	1/8/2004	123-72-8	Butyraldehyde	10	U
T20-03	B184P4	12/10/2003	1/8/2004	109-74-0	Butyronitrile	10	U
T20-03	B184P4	12/10/2003	1/8/2004	56-23-5	Carbon tetrachloride	18	
T20-03	B184P4	12/10/2003	1/8/2004	108-90-7	Chlorobenzene	10	U
T20-03	B184P4	12/10/2003	1/8/2004	75-00-3	Chloroethane	10	U
T20-03	B184P4	12/10/2003	1/8/2004	67-66-3	Chloroform	10	U
T20-03	B184P4	12/10/2003	1/8/2004	74-87-3	Chloromethane	10	U
T20-03	B184P4	12/10/2003	1/8/2004	108-94-1	Cyclohexanone	10	U
T20-03	B184P4	12/10/2003	1/8/2004	124-18-5	Decane	10	U
T20-03	B184P4	12/10/2003	1/8/2004	75-71-8	Dichlorodifluoromethane	910	D
T20-03	B184P4	12/10/2003	1/8/2004	64-17-5	Ethanol	10	U
T20-03	B184P4	12/10/2003	1/8/2004	107-12-0	Ethyl cyanide	10	U
T20-03	B184P4	12/10/2003	1/8/2004	100-41-4	Ethylbenzene	10	U
T20-03	B184P4	12/10/2003	1/8/2004	110-00-9	Furan	10	U
T20-03	B184P4	12/10/2003	1/8/2004	87-68-3	Hexachlorobutadiene	10	U

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Vent Riser	HEIS Number	Sample Date	Analysis Date	CAS Number	Constituent	Value (ppbv)	Qualifier
T20-03	B184P4	12/10/2003	1/8/2004	110-54-3	Hexane	10	U
T20-03	B184P4	12/10/2003	1/8/2004	111-13-7	Hexyl methyl ketone	10	U
T20-03	B184P4	12/10/2003	1/8/2004	67-56-1	Methanol	10	U
T20-03	B184P4	12/10/2003	1/8/2004	108-87-2	Methyl cyclohexane	10	U
T20-03	B184P4	12/10/2003	1/8/2004	75-09-2	Methylene chloride	10	U
T20-03	B184P4	12/10/2003	1/8/2004	108-38-3	m-Xylene	20	U
T20-03	B184P4	12/10/2003	1/8/2004	142-82-5	n- Heptane	10	U
T20-03	B184P4	12/10/2003	1/8/2004	106-97-8	n-Butane	10	U
T20-03	B184P4	12/10/2003	1/8/2004	111-65-9	n-Octane	10	U
T20-03	B184P4	12/10/2003	1/8/2004	111-84-2	Nonane	10	U
T20-03	B184P4	12/10/2003	1/8/2004	74-98-6	N-Propane	10	U
T20-03	B184P4	12/10/2003	1/8/2004	95-47-6	o-Xylene	10	U
T20-03	B184P4	12/10/2003	1/8/2004	109-66-0	Pentane	10	U
T20-03	B184P4	12/10/2003	1/8/2004	100-42-5	Styrene	10	U
T20-03	B184P4	12/10/2003	1/8/2004	127-18-4	Tetrachloroethene	10	U
T20-03	B184P4	12/10/2003	1/8/2004	109-99-9	Tetrahydrofuran	10	U
T20-03	B184P4	12/10/2003	1/8/2004	108-88-3	Toluene	10	U
T20-03	B184P4	12/10/2003	1/8/2004	79-01-6	Trichloroethene	10	U
T20-03	B184P4	12/10/2003	1/8/2004	75-69-4	Trichloromonofluoromethane	8600	D
T20-03	B184P4	12/10/2003	1/8/2004	75-01-4	Vinyl chloride	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	71-55-6	1,1,1-Trichloroethane <sup>a</sup>	68	
T29-01-S	B17TL1	10/22/2003	11/5/2003	79-34-5	1,1,2,2-Tetrachloroethane	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	79-00-5	1,1,2-Trichloroethane	10	U

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Vent Riser	HEIS Number	Sample Date	Analysis Date	CAS Number	Constituent	Value (ppbv)	Qualifier
T29-01-S	B17TL1	10/22/2003	11/5/2003	75-34-3	1,1-Dichloroethane <sup>a</sup>	16	
T29-01-S	B17TL1	10/22/2003	11/5/2003	75-35-4	1,1-Dichloroethene	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	120-82-1	1,2,4-Trichlorobenzene	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	95-63-6	1,2,4-Trimethylbenzene	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	107-06-2	1,2-Dichloroethane	13	
T29-01-S	B17TL1	10/22/2003	11/5/2003	123-91-1	1,4-Dioxane	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	71-36-3	1-Butanol	12	
T29-01-S	B17TL1	10/22/2003	11/5/2003	592-41-6	1-Hexene	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	71-23-8	1-Propanol	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	78-93-3	2-Butanone	46	
T29-01-S	B17TL1	10/22/2003	11/5/2003	110-43-0	2-Heptanone	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	591-78-6	2-Hexanone	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	107-83-5	2-Methylpentane	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	107-87-9	2-Pentanone	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	67-63-0	2-Propanol	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	106-35-4	3-Heptanone	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	589-34-4	3-Methylhexane	78	
T29-01-S	B17TL1	10/22/2003	11/5/2003	108-10-1	4-Methyl-2-Pentanone	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	75-07-0	Acetaldehyde	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	79-20-9	Acetic acid, methyl ester <sup>a</sup>	29	
T29-01-S	B17TL1	10/22/2003	11/5/2003	67-64-1	Acetone	220	
T29-01-S	B17TL1	10/22/2003	11/5/2003	75-05-8	Acetonitrile	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	71-43-2	Benzene	33	
T29-01-S	B17TL1	10/22/2003	11/5/2003	123-72-8	Butyraldehyde	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	109-74-0	Butyronitrile	10	U

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Vent Riser	HEIS Number	Sample Date	Analysis Date	CAS Number	Constituent	Value (ppbv)	Qualifier
T29-01-S	B17TL1	10/22/2003	11/5/2003	56-23-5	Carbon tetrachloride	3400	D
T29-01-S	B17TL1	10/22/2003	11/5/2003	108-90-7	Chlorobenzene	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	75-00-3	Chloroethane	180	
T29-01-S	B17TL1	10/22/2003	11/5/2003	67-66-3	Chloroform	75	
T29-01-S	B17TL1	10/22/2003	11/5/2003	74-87-3	Chloromethane	730	D
T29-01-S	B17TL1	10/22/2003	11/5/2003	108-94-1	Cyclohexanone	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	124-18-5	Decane	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	64-17-5	Ethanol	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	107-12-0	Ethyl cyanide	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	100-41-4	Ethylbenzene	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	110-00-9	Furan	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	87-68-3	Hexachlorobutadiene	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	110-54-3	Hexane	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	111-13-7	Hexyl methyl ketone	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	67-56-1	Methanol	430	D
T29-01-S	B17TL1	10/22/2003	11/5/2003	108-87-2	Methyl cyclohexane	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	75-09-2	Methylene chloride	110	
T29-01-S	B17TL1	10/22/2003	11/5/2003	108-38-3	m-Xylene	20	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	142-82-5	n-Heptane	19	
T29-01-S	B17TL1	10/22/2003	11/5/2003	106-97-8	n-Butane	66	
T29-01-S	B17TL1	10/22/2003	11/5/2003	111-65-9	n-Octane	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	111-84-2	Nonane	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	95-47-6	o-Xylene	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	109-66-0	Pentane	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	100-42-5	Styrene	10	U

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Vent Riser	HEIS Number	Sample Date	Analysis Date	CAS Number	Constituent	Value (ppbv)	Qualifier
T29-01-S	B17TL1	10/22/2003	11/5/2003	127-18-4	Tetrachloroethene	2400	D
T29-01-S	B17TL1	10/22/2003	11/5/2003	109-99-9	Tetrahydrofuran	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	108-88-3	Toluene	16	
T29-01-S	B17TL1	10/22/2003	11/5/2003	79-01-6	Trichloroethene	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	75-69-4	Trichloromonofluoromethane	10	U
T29-01-S	B17TL1	10/22/2003	11/5/2003	75-01-4	Vinyl chloride	17	
T29-04-N	B17TL0	10/21/2003	1/14/2004	79-34-5	1,1,2,2-Tetrachloroethane	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	79-00-5	1,1,2-Trichloroethane	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	75-35-4	1,1-Dichloroethene	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	120-82-1	1,2,4-Trichlorobenzene	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	95-63-6	1,2,4-Trimethylbenzene	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	107-06-2	1,2-Dichloroethane	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	123-91-1	1,4-Dioxane	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	71-36-3	1-Butanol	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	109-69-3	1-Chlorobutane <sup>a</sup>	280	
T29-04-N	B17TL0	10/21/2003	1/14/2004	592-41-6	1-Hexene	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	71-23-8	1-Propanol	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	78-93-3	2-Butanone	31	
T29-04-N	B17TL0	10/21/2003	1/14/2004	110-43-0	2-Heptanone	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	591-78-6	2-Hexanone	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	107-83-5	2-Methylpentane	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	107-87-9	2-Pentanone	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	67-63-0	2-Propanol	10	U

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Vent Riser	HEIS Number	Sample Date	Analysis Date	CAS Number	Constituent	Value (ppbv)	Qualifier
T29-04-N	B17TL0	10/21/2003	1/14/2004	106-35-4	3-Heptanone	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	589-34-4	3-Methylhexane	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	108-10-1	4-Methyl-2-Pentanone	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	75-07-0	Acetaldehyde	70	
T29-04-N	B17TL0	10/21/2003	1/14/2004	67-64-1	Acetone	140	
T29-04-N	B17TL0	10/21/2003	1/14/2004	75-05-8	Acetonitrile	17	
T29-04-N	B17TL0	10/21/2003	1/14/2004	71-43-2	Benzene	19	
T29-04-N	B17TL0	10/21/2003	1/14/2004	123-72-8	Butyraldehyde	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	109-74-0	Butyronitrile	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	56-23-5	Carbon tetrachloride	1900	D
T29-04-N	B17TL0	10/21/2003	1/14/2004	108-90-7	Chlorobenzene	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	75-00-3	Chloroethane	87	
T29-04-N	B17TL0	10/21/2003	1/14/2004	67-66-3	Chloroform	40	
T29-04-N	B17TL0	10/21/2003	1/14/2004	74-87-3	Chloromethane	220	
T29-04-N	B17TL0	10/21/2003	1/14/2004	108-94-1	Cyclohexanone	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	124-18-5	Decane	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	64-17-5	Ethanol	23	
T29-04-N	B17TL0	10/21/2003	1/14/2004	107-12-0	Ethyl cyanide	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	100-41-4	Ethylbenzene	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	110-00-9	Furan	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	87-68-3	Hexachlorobutadiene	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	110-54-3	Hexane	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	111-13-7	Hexyl methyl ketone	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	67-56-1	Methanol	230	
T29-04-N	B17TL0	10/21/2003	1/14/2004	108-87-2	Methyl cyclohexane	10	U

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Table 2. Laboratory Results for Samples Collected Through Vent Risers in the  
218-W-4C Burial Ground Trenches. (18 Pages)

Vent Riser	HEIS Number	Sample Date	Analysis Date	CAS Number	Constituent	Value (ppbv)	Qualifier
T29-04-N	B17TL0	10/21/2003	1/14/2004	75-09-2	Methylene chloride	59	
T29-04-N	B17TL0	10/21/2003	1/14/2004	108-38-3	m-Xylene	20	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	142-82-5	n-Heptane	11	
T29-04-N	B17TL0	10/21/2003	1/14/2004	106-97-8	n-Butane	25	
T29-04-N	B17TL0	10/21/2003	1/14/2004	111-65-9	n-Octane	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	111-84-2	Nonane	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	95-47-6	o-Xylene	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	109-66-0	Pentane	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	100-42-5	Styrene	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	127-18-4	Tetrachloroethene	2800	D
T29-04-N	B17TL0	10/21/2003	1/14/2004	109-99-9	Tetrahydrofuran	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	108-88-3	Toluene	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	79-01-6	Trichloroethene	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	75-69-4	Trichloromonofluoromethane	10	U
T29-04-N	B17TL0	10/21/2003	1/14/2004	75-01-4	Vinyl chloride	10	U

<sup>a</sup> Tentatively identified compound.

- B = analyte found in associated blank.  
CAS = Chemical Abstracts Service.  
D = analyte was identified at a secondary dilution factor.  
HEIS = Hanford Environmental Information System.  
ppbv = parts per billion by volume.  
U = analyzed for but not detected above limiting criteria.

BURIAL GROUND SAMPLING AND ANALYSIS RESULTS  
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Table 3. Laboratory Results for Eight Volatile Organic Compounds in Samples Collected from the Vent Riser in Each Trench with the Maximum Carbon Tetrachloride Concentrations Based on Field Screening.

Vent Riser	Date Collected	Date Analyzed	DCM (ppmv)	1,1-DCA (ppmv)	TCM (ppmv)	1,1,1-TCA (ppmv)	CCl <sub>4</sub> (ppmv)	TCE (ppmv)	1,1,2 TCA (ppmv)	PCE (ppmv)
T1-04	10/21/2003	11/4/2003	0.051	ND	ND	0.110 <sup>b</sup>	0.016	0.016	ND	25 D
T4-04	10/22/2003	1/14/2004	detected	detected	detected	detected	detected	detected	detected <sup>c</sup>	14,000 D
T7-06	10/22/2003	11/5/2004	ND	ND	0.095	0.040 <sup>b</sup>	2.7 D	0.021	ND	36 D
T20-03	12/10/2003	1/8/2004	ND	ND	ND	ND	0.018	ND	ND	ND
T29-01-S <sup>a</sup>	10/22/2003	11/5/2004	0.110	0.016 <sup>b</sup>	0.075	0.068 <sup>b</sup>	3.4 D	ND	ND	2.4 D

<sup>a</sup> The SUMMA canister sample collected from vent riser T29-01-S in trench T-29 is considered the primary sample for this trench because it was collected from the vent riser with the maximum carbon tetrachloride concentration based on field screening.

<sup>b</sup> Tentatively identified compound.

<sup>c</sup> Retention time similar to that for PCE; peak on chromatogram affected by PCE saturation of instrument detector.

CAS = Chemical Abstracts Service.

PCE = tetrachloroethylene.

CCl<sub>4</sub> = carbon tetrachloride.

TCE = trichloroethylene.

D = analyte was identified at a secondary dilution factor

TCM = trichloromethane (chloroform).

DCM = dichloromethane (methylene chloride).

1,1-DCA = 1,1-dichloroethane.

HEIS = Hanford Environmental Information System.

1,1,1-TCA = 1,1,1-trichloroethane.

ND = not detected as a calibrated compound or tentatively identified compound.

1,1,2-TCA = 1,1,2-trichloroethane.

ppmv = parts per million by volume.

Table 4. Field Screening Results for Eight Volatile Organic Compounds in Samples Collected from the Vent Riser in Each Trench with the Maximum Carbon Tetrachloride Concentrations based on Field Screening.

Vent Riser	Date Sampled	Date Analyzed	DCM (ppmv)	1,1-DCA (ppmv)	TCM (ppmv)	1,1,1-TCA (ppmv)	CCl <sub>4</sub> (ppmv)	TCE (ppmv)	1,1,2 TCA (ppmv)	PCE (ppmv)
T1-04	10/16/2003	10/16/2003	0.079j	0.45	<0.20	<0.15	0.24	<0.10	<0.10	0.089j
T4-04	10/21/2003	10/21/2003	4.71x	2.88x	125	985ex	668	15.2x	0.19x	1717ex
T7-06	10/21/2003	10/21/2003	<0.10x	<0.25x	3.77	0.45x	13.5	<0.10x	<0.10x	7.57x
T20-03	10/22/2003	10/22/2003	<0.10x	<0.25x	4.32	0.26x	33.1	<0.10x	<0.10x	4.24x
T29-01-S	10/19/2003	10/19/2003	<0.10	<0.25	3.37	1.52	0.62	<0.10	<0.10	<0.25

Note: The TCM and CCl<sub>4</sub> concentrations reported in this table for the samples from vent risers T4-04, T7-06, and T20-03 were analyzed using the Innova<sup>a</sup> multi-gas analyzer rather than the gas chromatograph and therefore are not suspect-low.

<sup>a</sup> Innova is a trademark of Innova AirTech Instruments A/S, Ballerup, Denmark.

CCl<sub>4</sub> = carbon tetrachloride.

DCM = dichloromethane (methylene chloride).

e = exceeds calibration range.

j = value less than practical quantitation limit.

ppmv = parts per million by volume.

PCE = tetrachloroethylene.

TCE = trichloroethylene.

TCM = trichloromethane (chloroform).

x = Value is suspect-low because of gas chromatograph lamp degradation. However, a positive detection indicates the presence of the compound in the sample.

1,1-DCA = 1,1-dichloroethane.

1,1,1-TCA = 1,1,1-trichloroethane.

1,1,2-TCA = 1,1,2-trichloroethane.