



**Department of Energy**  
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Carlsbad, New Mexico 88221

**JAN 31 2017**

Mr. John E. Kieling, Bureau Chief  
Hazardous Waste Bureau  
New Mexico Environment Department  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, NM 87508-6303

Mr. J.C. Borrego, Director  
Resource Protection Division  
New Mexico Environment Department  
Harold Runnels Building  
1190 Saint Francis Drive, Room 4050  
Santa Fe, NM 87502-5469

Subject: Quarterly Report for the reporting period between October 1, 2016, through December 31, 2016, as required by NMED Administrative Orders dated February 27, 2014, and May 12, 2014, as amended by NMED Directives dated August 29, 2014, December 9, 2014, July 15, 2015, and February 26, 2016, Waste Isolation Pilot Plant Hazardous Waste Facility Number: NM4890139088-TSDF

Dear Mr. Kieling and Borrego:

The purpose of this letter is to transmit the quarterly report for the reporting period between October 1, 2016, through December 31, 2016, as required by the February 27, 2014, and May 12, 2014, Administrative Orders issued under the authority of the New Mexico Hazardous Waste Act § 74-4-13 from Mr. Ryan Flynn to Messrs. Hellstrom, Franco, Cook, and McQuinn, and as amended by the August 29, 2014, and December 9, 2014, directives from Mr. Ryan Flynn to Messrs. Franco and McQuinn, the July 15, 2015, directive from Ms. Kathryn Roberts to Messrs. Bryson and Breidenbach and the February 26, 2016, directive from Ms. Kathryn Roberts to Messrs. Shrader and Breidenbach. The paper copy of the report is enclosed along with a compact disc containing the electronic version of the report.

We certify under penalty of law that this document and all attachments were prepared under our direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please contact Mr. George T. Basabilvazo at (575) 234-7488.

Sincerely,

**Signatures on File**

~~Todd Shrader~~, Manager  
Carlsbad Field Office

Philip J. Breidenbach, Project Manager  
Nuclear Waste Partnership LLC

Enclosure

cc: w/enclosure  
R. Maestas, NMED  
D. Biswell, NMED  
J. Sales, EPA  
CBFO M&RC

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# Quarterly Status Report for the New Mexico Environment Department Administrative Orders

Reporting Period October 1, 2016, through December 31, 2016

## Introduction

This report serves to fulfill the monitoring and reporting requirements set forth by Administrative Orders, AO1, AO2, and AO3, as amended by the NMED directives dated August 29, 2014, December 9, 2014, July 15, 2015, and February 26, 2016. In accordance with Paragraph 18(a) of AO2, subsequent reports will identify new information since the previous reporting period. The following sections combine the information required by the three orders and provide references to the respective paragraphs from AO1, AO2, and AO3.

### **1.0 Status of Permit-related surface and underground inspections for this reporting period, as requested per Paragraph 14(a) of AO1 and Paragraphs 18(c) and 18(e)(iii) of AO2, including the accessibility for personnel performing these Permit-required activities per Paragraph 18(e)(i) of AO2 and the status of recovery activities per Paragraph 18(e)(ii) of AO2:**

Attachment 1, *List of Surface and Underground Inspections*, shows the current status of each Permit-required inspection. This attachment has been updated to reflect changes made to the Permit as a result of a Class 2 Permit Modification Request (PMR), approved by NMED September 19, 2016, and a Class 1 Permit Modification Notification (PMN), dated December 6, 2016.

### **2.0 Status of Permit-related monitoring activities for this reporting period, as requested per Paragraph 14(a) of AO1 and Paragraph 18(c) of AO2, including the accessibility for personnel performing these Permit-required activities per Paragraph 18(e)(i) of AO2 and the status of recovery activities per Paragraph 18(e)(ii) of AO2:**

#### **Volatile Organic Compound (VOC) Monitoring**

In accordance with AO2, ongoing disposal room VOC monitoring in filled panels (required by Permit, Part 4, Section 4.4.3.) is not currently being performed due to underground access prohibition in Panels 3 and 4. Ongoing disposal room monitoring is addressed in the revised Class 3 PMR, *Modifications to the WIPP Panel Closure Plan*, that was submitted to the NMED on November 10, 2016.

The Permittees are performing repository VOC monitoring. Samples are being collected twice each week at one location on-site and one location off-site in accordance with Permit Part 4, Section 4.6.2., and associated requirements in Attachment N. The two monitoring locations, which are 24-hour VOC samples, are collected on the surface near the Training Building (VOC-C) and at an off-site location (VOC-D) approximately a mile southeast of the Training Building. Calculated running averages based on validated VOC monitoring data obtained since early February 2016 (first samples taken under the revised Permit per

a Class 2 PMR, *Revise Volatile Organic Compound Monitoring Procedures*, which was approved by the NMED on January 8, 2016) to date indicate that total carcinogenic risk and the noncarcinogenic hazard index associated with VOC releases are approximately two orders of magnitude below the acceptable levels defined in the Permit.

In accordance with the *WIPP Nitrate Salt Bearing Waste Container Isolation Plan*, Revision 2, dated May 29, 2015, the Panel 7, Room 7, VOC monitoring lines have been capped and monitoring of Panel 7, Room 7, has been terminated. Therefore, room-based VOC monitoring activities have commenced in Panel 7 beginning with Room 6.

### **Geomechanical Monitoring**

The purpose of geomechanical monitoring is to confirm the structural integrity of the underground repository. Remote geomechanical monitoring data continue to be transmitted electronically on a weekly basis via remote instruments located in Room 6 of Panel 7 in accordance with Permit Part 4, Section 4.6.1., associated requirements in Attachment A2-5b(2), and Attachment E, Table E-2. As stated in Revision 2 of the *Underground Compliance Plan*, submitted to the NMED December 6, 2016, some manually read locations are in inaccessible areas of the underground due to deteriorating ground conditions.

### **Hydrogen and Methane Monitoring**

Hydrogen and methane monitoring activities (required by Permit Part 4, Section 4.6.5 and associated requirements in Attachment N1) are not currently being performed due to underground access prohibition in Panels 3 and 4. Previous monitoring data (prior to the 2014 events) from the Semi-Annual VOC, Hydrogen and Methane Data Summary Reports indicate that the inability to monitor does not pose a threat to underground waste workers. Hydrogen and methane monitoring is addressed in the revised Class 3 PMR, *Modifications to the WIPP Panel Closure Plan*, that was submitted to the NMED on November 10, 2016.

### **Mine Ventilation Rate Monitoring**

Mine ventilation rate monitoring activities (required by Permit Part 4, Section 4.6.4. and associated requirements of Permit Attachment O) are currently being performed. A test and balance of the filtration fans was performed in September 2016. The Mine Ventilation Services report was issued on October 26, 2016. The results of the test and balance will be included in the next annual Mine Ventilation Rate Monitoring Report in October 2017. In addition, the Class 1 PMN, submitted December 6, 2016, added the 860- and 960-fan flow verification and calibration checks as well as the verification check for total mine airflow. These checks are being performed in accordance with Permit Attachment O, Section O-3d.

## **3.0 Location of environmental monitoring equipment. The reports shall include dates of sampling, and all data that has been produced by these monitoring stations for this reporting period, as requested per Paragraph 14(f) of AO1:**

Attachment 2, *Environmental Monitoring*, includes the new repository VOC monitoring data for this reporting period. Aerial photos and diagrams displaying monitoring locations are also included. Surface monitoring equipment has been deployed since February 25, 2014. Samples are being collected twice each week at the locations indicated in Attachment 2.

**4.0 Updates on activities performed pursuant to the Underground Derived Waste Storage Plan, including a description of any surface and underground derived waste produced, whether the derived waste is mixed or non-mixed, the contents, container type, container location, total container count, and approximate volume of derived waste per container, as requested per Paragraph 14(i) of AO1 and Paragraph 18(d) of AO2:**

Since the submittal of the last quarterly report, no derived waste requiring storage at the WIPP facility has been generated. Attachment 3, *Surface and Underground Derived Waste Currently in Storage at the WIPP Facility*, is currently reserved.

**5.0 The current status of activities required by the RCRA Contingency Plan, Permit Attachment D, including identification of applicable sections of the Contingency Plan, the schedule for actions required under the Contingency Plan, and any deviations from any Contingency Plan requirements, as requested per Paragraph 18(b) of AO2. Non-applicable sections shall also be identified and explanations shall be provided as to why such sections do not apply:**

A Class 2 Permit modification that revised the *RCRA Contingency Plan* became effective on October 19, 2016. In addition, the Permittees submitted the *Final Supplement to the Report of Implementation of the Waste Isolation Pilot Plant Facility Resource Conservation and Recovery Act Contingency Plan on April 11, 2014* on October 18, 2016. This supplement notified the NMED that the Permittees have concluded RCRA Contingency Plan activities related to the February 2014 emergencies and have exited the Contingency Plan; therefore, Attachment 4, *Status of RCRA Contingency Plan Required Activities*, is currently reserved.

**6.0 The report shall include the submission of a list containing all additional requirements placed upon the WIPP by any state or federal agency relating to corrective actions or recovery and as a result of the incidents referenced in Paragraphs 8 and 9 of the May 12, 2014, Administrative Order, including requirements by other segments of DOE, as requested by Paragraph 18(f) of AO2:**

During this reporting period, there have been no additional requirements placed upon the Waste Isolation Pilot Plant (WIPP) by any state or federal agency relating to corrective actions or recovery and as a result of the incidents referenced in Paragraphs 8 and 9 of the May 12, 2014, Administrative Order, including requirements by other segments of the U.S. Department of Energy (DOE), as requested by Paragraph 18(f) of AO2. Attachment 5, *Corrective Actions*, is currently reserved.

On December 1, 2016, the Mine Safety and Health Administration (MSHA) issued a report documenting its recent Technical Support Evaluation of the ground conditions at the WIPP facility. This evaluation, which took place between October 24 and 31, 2016, was performed at the request of CBFO, NWP, and the MSHA South Central District located in Dallas, Texas. The MSHA team recognized the challenges presented by the limited ventilation in the underground and decrease in productivity for ground control crews working in personal protective equipment and respirators. The team had no adverse findings. The report recommends several actions to avoid future ground falls and to return ground control program to a proactive posture.

The WIPP Site Incident Independent Review Team (WSIIR) is a team of faculty and scientists from New Mexico Institute of Mining and Technology, led by Dr. Van Romero, who were assembled at the request of DOE to conduct an independent and transparent review of the radiological release incident at the WIPP facility. The team reviewed and analyzed reports prepared by the DOE Accident Investigation Board, the Technical Assessment Team, Los Alamos National Laboratory, and the Carlsbad Environmental Monitoring and Research Center. The WSIIR team agreed with the work done by the other investigations and identified complacency and external pressures as contributing factors in the events.

**7.0 The Permittees shall provide a status of recovery-related activities relative to the underground per Paragraph 18(e)(ii) of AO2 and a summary of recovery-related work performed in Panel 7, including relevant photographs, as requested per Paragraph 18(k) of AO2:**

During this reporting period, the Permittees completed the Contractor Operational Readiness Review and the DOE Operational Readiness Review. Associated prestart actions have been completed. The Permittees received NMED's approval to resume normal waste emplacement operations on December 16, 2016, following a facility inspection required by AO1 and AO2. Attachment 6, *Recovery-Related Work Activities*, is currently reserved. In the approval letter, the NMED terminated AO1; however, AO2 and AO3 remain in effect until completion of the actions specified in the NMED letter.

**8.0 The Permittees shall submit a WIPP Nitrate Salt Bearing Waste Container Isolation Plan per Paragraph 22(a) of AO3. The plan shall contain a detailed proposal for the expedited closure of Panel 6 per Paragraph 22(a)(i) of AO3 and the expedited closure of Panel 7, Room 7 per Paragraph 22(a)(iii) of AO3:**

The Permittees submitted the TID response to the NMED on November 10, 2016. This response updates a Class 3 PMR, initially submitted March 18, 2013, which requested a modification to the WIPP Panel Closure Plan. This updated PMR meets the criteria for a final closure for Panel 6 described in Revision 2 of the *WIPP Nitrate Salt Bearing Waste Container Isolation Plan*, dated May 29, 2015. Attachment 7, *WIPP Nitrate Salt Bearing Waste Container Isolation Plan Information Required by Administrative Order 3*, is currently reserved.

Attachment 1  
List of Surface and Underground Inspections

System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status as of 12/31/2016 (Current/Not Current/Other <sup>1</sup> )	Date of Last Inspection	Proposed Start Date (if Not Current or Other) <sup>2</sup>	Comments
Air Intake Shaft Hoist	Underground Operations	Preoperational	WP 04-HO1004 Inspecting for Deterioration, Safety Equipment, Communication Systems, and Mechanical Operability in accordance with Mine Safety and Health Administration (MSHA) requirements	Current	12/28/2016	N/A	
Ambulance (Surface) and Medical Cart (Underground)	Fire Department	Weekly	WP 12-FP0030 Inspecting for Mechanical Operability, Deterioration, and Required Equipment	Current	12/26/2016 (Surface Ambulance)  12/28/2016 (Underground Medical Cart)	N/A	
Adjustable Center of Gravity Lift Fixture	Waste Handling	Preoperational	WP 05-WH1410 Inspecting for Mechanical Operability and Deterioration	Other	N/A	When waste receipt operations resume	
Backup Power Supply Diesel Generators	Facility Operations	Monthly	WP 04-ED1301 Inspecting for Mechanical Operability and Leaks/Spills by starting and operating both generators. Results of this inspection are logged in accordance with WP 04-AD3008.	Current	12/18/2016 (#1)  12/18/2016 (#2)	N/A	
Facility Inspections (Water Diversion Berms)	Facility Engineering	Annually	WP 10-WC3008 Inspecting for Damage, Impediments to water flow, and Deterioration	Current	10/03/2016	N/A	

System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status as of 12/31/2016 (Current/Not Current/Other <sup>1</sup> )	Date of Last Inspection	Proposed Start Date (if Not Current or Other) <sup>2</sup>	Comments
Central Monitoring System (CMS)	Facility Operations	Continuous	Automatic Self-Checking	Current	12/31/2016	N/A	
Contact-Handled (CH) TRU Underground Transporter	Waste Handling	Preoperational	WP 05-WH1603 Inspecting for Leaks/Spills, Mechanical Operability, Deterioration, and area around transporter clear of obstacles	Other	N/A	January 2017	
Conveyance Loading Car	Waste Handling	Preoperational	WP 05-WH1406 Inspecting for Mechanical Operability, Deterioration, path clear of obstacles, and guards in the proper place	Other	N/A	January 2017	
Facility Transfer Vehicle	Waste Handling	Preoperational	WP 05-WH1204 Inspecting for Mechanical Operability, Deterioration, path clear of obstacles, and guards in the proper place	Other	N/A	When waste receipt operations resume	
Emergency Lighting	Fire Department	Monthly/annually	WP 12-FP0051 Inspecting for Deterioration and Operability of indicator lights in accordance with NFPA 101	Current	12/06/2016 (Monthly)  09/02/2016 (Annually)	N/A	
Exhaust Shaft	Underground Operations	Quarterly	PM041099 Inspecting for Deterioration and Leaks/Spills	Current	12/19/2016	N/A	
Eye Wash and Shower Equipment	Equipment Custodian	Weekly	WP 12-IS1832 Inspecting for Deterioration	Current	12/28/2016	N/A	



System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status as of 12/31/2016 (Current/Not Current/ <sup>1</sup> Other)	Date of Last Inspection	Proposed Start Date (if Not Current or Other) <sup>2</sup>	Comments
Eye Wash and Shower Equipment	Equipment Custodian	Semi-annually	WP 12-IS1832 Inspecting for Deterioration and Fluid Levels-Replace as Required	Current	12/14/2016	N/A	
Fire Detection and Alarm System	Fire Protection Engineering	Semi-annually	WP 12-FP0027 Inspecting for Deterioration and Operability of underground fuel station fire suppression system in accordance with NFPA 17	Current	12/22/2016	N/A	
Fire Detection and Alarm System	Fire Protection Engineering	Monthly/quarterly/annually	WP 12-FP0028 Inspecting for Deterioration, and Operability of the alarm panel and transmitter, audible/visual alarm devices, detectors, and pull stations in accordance with NFPA 72	Current	12/15/2016 (Monthly)  12/15/2016 (Quarterly)  12/22/2016 (Annually)	N/A	
Fire Extinguishers	Fire Department	Monthly	WP 12-FP0036 Inspecting for Deterioration, Leaks/Spills, Expiration, seals, fullness, and pressure	Current	12/14/2016 (Surface)  12/13/2016 (Underground)	N/A	
Fire Hoses	Fire Department	Annually (minimum)	WP 12-FP0031 Inspecting for Deterioration and Leaks/Spills	Current	05/09/2016	N/A	

System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status as of 12/31/2016 (Current/Not Current/ <sup>1</sup> Other)	Date of Last Inspection	Proposed Start Date (if Not Current or Other) <sup>2</sup>	Comments
Fire Hydrants	Fire Protection Engineering	Semi-annually/ annually	WP 12-FP0034 Inspecting for Deterioration and Leaks/Spills	Current	09/18/2016 (Semi-annually)  10/09/2016 (Annually)	N/A	
Fire Pumps	Fire Protection Engineering	Weekly	WP 12-FP0026 Inspecting for Deterioration, Leaks/Spills, fire water valve position(s), and panel light status	Current	12/26/2016	N/A	
Fire Pumps	Fire Protection Engineering	Annually (Electric Pump)	WP 12-FP5113 Inspection for Deterioration, operability, flow, discharge pressure, suction pressure, and pump speed	Current	12/14/2016	N/A	
Fire Pumps	Fire Protection Engineering	Annually (Diesel Pump)	WP 12-FP5114 Inspecting for Deterioration, operability, flow, discharge pressure, suction pressure, and pump speed	Current	03/17/2016	N/A	
Fire Sprinkler Systems	Fire Protection Engineering	Monthly/ quarterly/annually	WP 12-FP0025, WP 12-FP0063, and WP 12-FP0064 Inspecting for Deterioration, Leaks/Spills, water pressures, and main drain test	Current	12/09/2016 (Monthly)  11/08/2016 (Quarterly)  07/15/2016 (Annually)	N/A	

System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status as of 12/31/2016 (Current/Not Current/ <sup>1</sup> Other)	Date of Last Inspection	Proposed Start Date (if Not Current or Other) <sup>2</sup>	Comments
Fire and Emergency Response Vehicles (Fire Trucks, Fire Suppression Cart, and Rescue Carts/Trucks)	Fire Department	Weekly	WP 12-FP0033 Inspecting for Mechanical Operability, Deterioration, Leaks/Spills, and Required Equipment	Current	12/27/2016 (Fire Truck #1)  12/27/2016 (Fire Truck #2)  12/28/2016 (Fire Suppression Cart)  12/26/2016 (Surface Rescue Truck)  12/28/2016 (Underground Rescue Cart)	N/A	
Forklifts Used for Waste Handling (Electric and Diesel forklifts, Push-Pull Attachment) on Surface	Waste Handling	Preoperational	WP 05-WH1201, WP 05-WH1207, WP 05-WH1401, WP 05-WH1402, WP 05-WH1403, and WP 05-WH1412  Inspecting for Leaks/Spills, Mechanical Operability, Deterioration, and On board fire suppression system	Other	N/A	January 2017	

System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status as of 12/31/2016 (Current/Not Current/Other <sup>1</sup> )	Date of Last Inspection	Proposed Start Date (if Not Current or Other) <sup>2</sup>	Comments
Forklifts Used for Waste Handling (Electric and Diesel forklifts, Push-Pull Attachment) in Underground	Waste Handling	Preoperational	WP 05-WH1201, WP 05-WH1207, WP 05-WH1401, WP 05-WH1402, WP 05-WH1403, and WP 05-WH1412  Inspecting for Leaks/Spills, Mechanical Operability, Deterioration, and On board fire suppression system	Other	N/A	January 2017	
Automatic on-board fire suppression systems	Fire Protection Engineering	Semi-annually	WP 12-FP0060  Inspecting for Mechanical Operability and Deterioration	Current	11/14/2016	See comments	Five pieces of equipment have had the installation of the automatic fire suppression system verified and the initial inspection of the system performed.  Additional automatic fire suppression systems continue to be tagged out of service until the approved vendor can confirm the existing configuration or install new systems/parts and perform the initial inspection, thus ensuring the systems can perform their intended function.  Qualified fire watches continue to function as compensatory measures for the out of service systems.
Hazardous Material Response Equipment	Fire Department	Quarterly	WP 12-FP0033  Inspecting for Deterioration, and Required Equipment	Current	10/25/2016	N/A	

System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status as of 12/31/2016 (Current/Not Current/ <sup>1</sup> Other)	Date of Last Inspection	Proposed Start Date (if Not Current or Other) <sup>2</sup>	Comments
Head Lamps	Facility Personnel	Daily	Head lamps are operated daily and are repaired or replaced upon failure	Current	12/31/2016	N/A	
Miners First Aid Station	Fire Department	Quarterly	WP 12-FP0035 Inspecting for Required Equipment	Current	10/09/2016	N/A	
Mobile Phones	Facility Personnel	Daily	Mobile Phones are operated daily and are repaired or replaced upon failure	Current	12/31/2016	N/A	
Mine Pager Phones (between surface and underground)	Facility Operations	Monthly	WP 04-PC3017 Testing of Mine Pager Phones at essential locations	Current	12/08/2016	N/A	
MSHA Air Quality Monitor	Maintenance/Underground Operations	Daily	WP 12-IH1828 Inspecting for Air Quality Monitoring Equipment Functional Check.	Current	12/31/2016	N/A	
Perimeter Fence, Gates, Signs	Security	Daily	WP 17-SS1023 Inspecting for Deterioration and Posted Warnings	Current	12/31/2016	N/A	
Mine Rescue Self-Contained Breathing Apparatus (SCBA)	Mine Rescue Team	30 days	Inspection for Deterioration and Pressure	Current	12/23/2016	N/A	

System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status as of 12/31/2016 (Current/Not Current/ <sup>1</sup> Other)	Date of Last Inspection	Proposed Start Date (if Not Current or Other) <sup>2</sup>	Comments
Fire Department SCBA	Fire Department	Weekly	WP 12-FP0029 Inspecting for Deterioration and Pressure	Current	12/27/2016 (Fire Truck #1)  12/27/2016 (Fire Truck #2)  12/26/2016 (Surface Rescue Truck)  12/28/2016 (Underground Rescue Cart)	N/A	
Fire Department SCBA	Fire Department	Monthly	WP 12-FP0029 Inspecting for Deterioration and Pressure	Current	12/06/2016 (Fire Truck #1)  12/06/2016 (Fire Truck #2)  12/05/2016 (Surface Rescue Truck)  12/07/2016 (Underground Rescue Cart)	N/A	
Site Notification System; Underground Evacuation Alarm System	Facility Operations	Monthly	WP 04-PC3017 Testing of PA and Underground Alarms	Current	12/08/2016	N/A	
Radio Equipment	Facility Personnel	Daily	Radios are operated daily and are repaired or replaced upon failure	Current	12/31/2016	N/A	

System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status as of 12/31/2016 (Current/Not Current/Other <sup>1</sup> )	Date of Last Inspection	Proposed Start Date (if Not Current or Other) <sup>2</sup>	Comments
Salt Handling Shaft Hoist	Underground Operations	Preoperational	WP 04-HO1002 Inspecting for Deterioration, Safety Equipment, Communication Systems, and Mechanical Operability in accordance with MSHA requirements	Current	12/31/2016	N/A	
Self-Rescuers and Self-Contained Self-Rescuers	Underground Operations	Quarterly	WP 04-AU1026 Inspecting for Deterioration and Functionality in accordance with MSHA requirements	Current	12/30/2016 (Self- Rescuers)  10/11/2016 (Self-Contained Self-Rescuers)	N/A	
Surface TRU Mixed Waste Handling Area	Waste Handling	Preoperational or Weekly	WP 05-WH1101 Inspecting for Deterioration, Leaks/Spills, Required Aisle Space, Posted Warnings, Communication Systems, Container Condition, and Floor coating integrity	Current	12/30/2016 (Preoperational)  12/28/2016 (Weekly)	N/A	AR1630966 is for Floor Epoxy Coating Repair when CH Bay is in Standby Mode.
TRU Mixed Waste Decontamination Equipment	Waste Handling	Annually	WP 05-WH1101 Inspecting for Required Equipment	Current	10/06/2016	N/A	
Underground Openings—Roof Bolts and Travelways	Underground Operations	Weekly	WP 04-AU1007 Inspecting for Deterioration of Accessible Areas	Current	12/28/2016	N/A	
Underground—Geomechanical Instrumentation System (GIS)	Geotechnical Engineering	Monthly	WP 07-EU1301 Inspecting for Deterioration	Current	12/15/2016	N/A	

System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status as of 12/31/2016 (Current/Not Current/ <sup>1</sup> Other)	Date of Last Inspection	Proposed Start Date (if Not Current or Other) <sup>2</sup>	Comments
Underground TRU Mixed Waste Disposal Area	Waste Handling	Preoperational	WP 05-WH1810 Inspecting for Deterioration, Leaks/Spills, mine pager phones, equipment, unobstructed access, signs, debris, and ventilation	Other	N/A	January 2017	
Uninterruptible Power Supply (Central UPS)	Facility Operations	Daily	WP 04-ED1542 Inspecting for Mechanical Operability and Deterioration with no malfunction alarms. Results of this inspection are logged in accordance with WP 04-AD3008.	Current	12/31/2016	N/A	
TDOP Upender	Waste Handling	Preoperational	WP 05-WH1010 Inspecting for Mechanical Operability and Deterioration	Other	N/A	When waste receipt operations resume	
Ventilation Exhaust	Maintenance Operations	Quarterly	IC041098 (700 Fans) Check for Deterioration and Calibration of Mine Ventilation Rate Monitoring Equipment and flow verification of individual fans	Other	11/09/2013 (41-B-700A)  03/21/2013 (41-B-700B)  12/23/2013 (41-B-700C)	No date set because the 700 fans are not used while in filtration mode.	The 700 horsepower fans have been placed out of service because the underground ventilation system is operating in filtration mode. The quarterly inspection PM has been deactivated.
Ventilation Exhaust	Maintenance Operations	Quarterly	IC413000 (700, 860, and 960 Fans) Flow Verification of total mine airflow for fans in service	Current	12/14/2016	N/A	



System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status as of 12/31/2016 (Current/Not Current/ <sup>1</sup> Other)	Date of Last Inspection	Proposed Start Date (if Not Current or Other) <sup>2</sup>	Comments
Ventilation Exhaust	Maintenance Operations	Semi-annually	IC413005 (860 Fans) Check for Deterioration and Calibration of Mine Ventilation Rate Monitoring Equipment and flow verification of individual fans	Current	09/20/2016 (41-B-860A)  10/13/2016 (41-B-860B)  10/14/2016 (41-B-860C)	N/A	
Ventilation Exhaust	Maintenance Operations	Semi-annually	IC041087 (960 Fans) Check for Deterioration and Calibration of Mine Ventilation Rate Monitoring Equipment and flow verification of individual fans	Current	07/15/2016 (41-B-960A)  07/15/2016 (41-B-960B)	N/A	
Waste Handling Cranes	Waste Handling	Preoperational	WP 05-WH1407 Inspecting for Mechanical Operability, Deterioration, and Leaks/Spills	Other	N/A	When waste receipt operations resume	
Waste Hoist	Underground Operations	Preoperational	WP 04-HO1003 Inspecting for Deterioration, Safety Equipment, Communication Systems, and Mechanical Operability, Leaks/Spills, in accordance with MSHA requirements	Current	12/31/2016	N/A	

System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status as of 12/31/2016 (Current/Not Current/Other <sup>1</sup> )	Date of Last Inspection	Proposed Start Date (if Not Current or Other) <sup>2</sup>	Comments
Water Tanks	Facility Operations	Daily	WP 04-AD3008 Inspecting for Deterioration, valve lineup and water levels. Results of this inspection are logged in accordance with WP 04-AD3008.	Current	12/31/2016	N/A	
Push-Pull Attachment (Surface)	Waste Handling	Preoperational	WP 05-WH1401 Inspecting for Damage and Deterioration	Other	N/A	January 2017	
Push-Pull Attachment (Underground)	Waste Handling	Preoperational	WP 05-WH1401 Inspecting for Damage and Deterioration	Other	N/A	January 2017	
Trailer Jockey	Waste Handling	Preoperational	WP 05-WH1405 Inspecting for Leaks/Spills, Mechanical Operability and Deterioration	Other	NA	When waste receipt operations resume	
Explosion-Isolation Walls	Underground Operations	Quarterly	PM000032 Integrity and Deterioration of Accessible Areas	Current	10/11/2016	N/A	
Bulkhead in Filled Panels	Underground Operations	Monthly	PM000011 Integrity and Deterioration of Accessible Areas	Current	12/07/2016	N/A	
Bolting Robot	Waste Handling	Preoperational	WP 05-WH1203 Mechanical Operability	Other	N/A	When waste receipt for TRUPACT -III operations resume	

System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status as of 12/31/2016 (Current/Not Current/ <sup>1</sup> Other)	Date of Last Inspection	Proposed Start Date (if Not Current or Other) <sup>2</sup>	Comments
Yard Transfer Vehicle	Waste Handling	Preoperational	WP 05-WH1205 Mechanical Operability, Deterioration, Path clear of obstacles and Guards in proper place	Other	N/A	When waste receipt for TRUPACT -III operations resume	
Payload Transfer Station	Waste Handling	Preoperational	WP 05-WH1208 Mechanical Operability, Deterioration, and Guards in proper place	Other	N/A	When waste receipt for TRUPACT -III operations resume	
Monorail Hoist	Waste Handling	Preoperational	WP 05-WH1202 Mechanical Operability, Deterioration, and Leaks/Spills	Other	N/A	When waste receipt for TRUPACT -III operations resume	
Bolting Station	Waste Handling	Preoperational	WP 05-WH1203 Mechanical Operability, Deterioration, and Guards in proper place	Other	N/A	When waste receipt for TRUPACT -III operations resume	

1 **Current** – As of the end of the reporting period, the inspection of in-service equipment was up-to-date (any missed inspections that occurred during the reporting period are noted in the “Comments” field)

**Not Current** – As of the end of the reporting period, either 1) inspection of in-service equipment was delinquent or 2) emergency equipment was out-of-service, with no established compensatory measure(s)

**Other** – As of the end of the reporting period either 1) equipment was out-of-service (applicable compensatory measures are noted in the “Comments” field) or 2) equipment was not being used to handle TRU mixed waste

2 Routine inspections are proposed to begin with resumption of normal operations

N/A Not Applicable

## Attachment 2 Environmental Monitoring



**VOC Sampling Locations**

# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	9/7/2016	9/9/2016	9580	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	9/7/2016	9/9/2016	9580	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	9/7/2016	9/9/2016	9580	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	9/7/2016	9/9/2016	9580	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	9/7/2016	9/9/2016	9580	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.1 J
CEMRC	9/7/2016	9/9/2016	9580	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	9/7/2016	9/9/2016	9580	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	9/7/2016	9/9/2016	9580	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	9/7/2016	9/9/2016	9580	D	Toluene	108-88-3	PPBV	0.4	0.08 J
CEMRC	9/7/2016	9/9/2016	9580	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	9/7/2016	9/9/2016	9580	D	Butane	106-97-8	PPBV		2.64 NJ
CEMRC	9/7/2016	9/9/2016	9580	D	Butane, 2-methyl-	78-78-4	PPBV		2.14 NJ
CEMRC	9/7/2016	9/9/2016	9580	D	Dichlorodifluoromethane	75-71-8	PPBV		0.44 NJ
CEMRC	9/7/2016	9/9/2016	9580	D	Isobutane	75-28-5	PPBV		1.18 NJ
CEMRC	9/7/2016	9/9/2016	9580	D	Pentane	109-66-0	PPBV		1.04 NJ
CEMRC	9/7/2016	9/9/2016	9580	D	Propane	74-98-6	PPBV		2.56 NJ
CEMRC	9/7/2016	9/9/2016	9580	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	9/7/2016	9/9/2016	9580	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	9/7/2016	9/9/2016	9580	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	9/7/2016	9/9/2016	9580	D	1,2-Dichloroethane	107-06-2	PPTV	100	7.84 J
CEMRC	9/7/2016	9/9/2016	9580	D	Carbon Tetrachloride	56-23-5	PPTV	100	102.12
CEMRC	9/7/2016	9/9/2016	9580	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	9/7/2016	9/9/2016	9580	D	Chloroform	67-66-3	PPTV	100	9.02 J

## Qualifiers:

J = Estimated value; below laboratory's method reporting limit (MRL), but above method detection limit (MDL).

U = Compound not detected above the MDL.

NJ = Presumptive evidence of the presence of the compound at an estimated quantity; only used for tentatively identified compounds (TICs).

## Notes:

\* A value will not appear in the MRL column for TICs.

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	9/7/2016	9/9/2016	9580	D	Methylene Chloride	75-09-2	PPTV	100	39.8 J
CEMRC	9/7/2016	9/9/2016	9580	D	Toluene	108-88-3	PPTV	100	86.2 J
CEMRC	9/7/2016	9/9/2016	9580	D	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	9/7/2016	9/8/2016	9579	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	9/7/2016	9/8/2016	9579	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	9/7/2016	9/8/2016	9579	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	9/7/2016	9/8/2016	9579	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	9/7/2016	9/8/2016	9579	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.12 J
CEMRC	9/7/2016	9/8/2016	9579	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	9/7/2016	9/8/2016	9579	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	9/7/2016	9/8/2016	9579	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	9/7/2016	9/8/2016	9579	C	Toluene	108-88-3	PPBV	0.4	0.08 J
CEMRC	9/7/2016	9/8/2016	9579	C	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	9/7/2016	9/8/2016	9579	C	Butane	106-97-8	PPBV		2.38 NJ
CEMRC	9/7/2016	9/8/2016	9579	C	Butane, 2-methyl-	78-78-4	PPBV		1.5 NJ
CEMRC	9/7/2016	9/8/2016	9579	C	Isobutane	75-28-5	PPBV		0.88 NJ
CEMRC	9/7/2016	9/8/2016	9579	C	Pentane	109-66-0	PPBV		0.96 NJ
CEMRC	9/7/2016	9/8/2016	9579	C	Propane	74-98-6	PPBV		2.42 NJ
CEMRC	9/7/2016	9/8/2016	9579	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	9.74 J
CEMRC	9/7/2016	9/8/2016	9579	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	9/7/2016	9/8/2016	9579	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	9/7/2016	9/8/2016	9579	C	1,2-Dichloroethane	107-06-2	PPTV	100	7.24 J
CEMRC	9/7/2016	9/8/2016	9579	C	Carbon Tetrachloride	56-23-5	PPTV	100	122.62
CEMRC	9/7/2016	9/8/2016	9579	C	Chlorobenzene	108-90-7	PPTV	100	U

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## Notes:

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## Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	9/7/2016	9/8/2016	9579	C	Chloroform	67-66-3	PPTV	100	10.16 J
CEMRC	9/7/2016	9/8/2016	9579	C	Methylene Chloride	75-09-2	PPTV	100	39.18 J
CEMRC	9/7/2016	9/8/2016	9579	C	Toluene	108-88-3	PPTV	100	80.28 J
CEMRC	9/7/2016	9/8/2016	9579	C	Trichloroethylene	79-01-6	PPTV	100	10.94 J
CEMRC	9/8/2016	9/9/2016	9582	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	9/8/2016	9/9/2016	9582	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	9/8/2016	9/9/2016	9582	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	9/8/2016	9/9/2016	9582	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	9/8/2016	9/9/2016	9582	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.1 J
CEMRC	9/8/2016	9/9/2016	9582	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	9/8/2016	9/9/2016	9582	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	9/8/2016	9/9/2016	9582	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	9/8/2016	9/9/2016	9582	D	Toluene	108-88-3	PPBV	0.4	0.22 J
CEMRC	9/8/2016	9/9/2016	9582	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	9/8/2016	9/9/2016	9582	D	Butane	106-97-8	PPBV		7.06 NJ
CEMRC	9/8/2016	9/9/2016	9582	D	Butane, 2-methyl-	78-78-4	PPBV		3.72 NJ
CEMRC	9/8/2016	9/9/2016	9582	D	Cyclohexane, methyl-	108-87-2	PPBV		0.54 NJ
CEMRC	9/8/2016	9/9/2016	9582	D	Cyclopentane, methyl-	96-37-7	PPBV		0.62 NJ
CEMRC	9/8/2016	9/9/2016	9582	D	Isobutane	75-28-5	PPBV		2.12 NJ
CEMRC	9/8/2016	9/9/2016	9582	D	Pentane	109-66-0	PPBV		3.26 NJ
CEMRC	9/8/2016	9/9/2016	9582	D	Pentane, 2-methyl-	107-83-5	PPBV		0.86 NJ
CEMRC	9/8/2016	9/9/2016	9582	D	Propane	74-98-6	PPBV		6.26 NJ
CEMRC	9/8/2016	9/9/2016	9582	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U

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### Notes:

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	9/8/2016	9/9/2016	9582	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	9/8/2016	9/9/2016	9582	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	9/8/2016	9/9/2016	9582	D	1,2-Dichloroethane	107-06-2	PPTV	100	12.32 J
CEMRC	9/8/2016	9/9/2016	9582	D	Carbon Tetrachloride	56-23-5	PPTV	100	104.12
CEMRC	9/8/2016	9/9/2016	9582	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	9/8/2016	9/9/2016	9582	D	Chloroform	67-66-3	PPTV	100	8.38 J
CEMRC	9/8/2016	9/9/2016	9582	D	Methylene Chloride	75-09-2	PPTV	100	38.44 J
CEMRC	9/8/2016	9/9/2016	9582	D	Toluene	108-88-3	PPTV	100	230.18
CEMRC	9/8/2016	9/9/2016	9582	D	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	9/8/2016	9/9/2016	9581	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	9/8/2016	9/9/2016	9581	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	9/8/2016	9/9/2016	9581	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	9/8/2016	9/9/2016	9581	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	9/8/2016	9/9/2016	9581	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.14 J
CEMRC	9/8/2016	9/9/2016	9581	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	9/8/2016	9/9/2016	9581	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	9/8/2016	9/9/2016	9581	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	9/8/2016	9/9/2016	9581	C	Toluene	108-88-3	PPBV	0.4	0.18 J
CEMRC	9/8/2016	9/9/2016	9581	C	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	9/8/2016	9/9/2016	9581	C	Butane	106-97-8	PPBV		6.16 NJ
CEMRC	9/8/2016	9/9/2016	9581	C	Butane, 2-methyl-	78-78-4	PPBV		3.2 NJ
CEMRC	9/8/2016	9/9/2016	9581	C	Cyclohexane, methyl-	108-87-2	PPBV		0.48 NJ
CEMRC	9/8/2016	9/9/2016	9581	C	Cyclopentane, methyl-	96-37-7	PPBV		0.52 NJ
CEMRC	9/8/2016	9/9/2016	9581	C	Dichlorodifluoromethane	75-71-8	PPBV		1.04 NJ

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	9/8/2016	9/9/2016	9581	C	Isobutane	75-28-5	PPBV		2.14 NJ
CEMRC	9/8/2016	9/9/2016	9581	C	Pentane	109-66-0	PPBV		2.8 NJ
CEMRC	9/8/2016	9/9/2016	9581	C	Pentane, 2-methyl-	107-83-5	PPBV		0.76 NJ
CEMRC	9/8/2016	9/9/2016	9581	C	Propane	74-98-6	PPBV		5.6 NJ
CEMRC	9/8/2016	9/9/2016	9581	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	15.14 J
CEMRC	9/8/2016	9/9/2016	9581	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	9/8/2016	9/9/2016	9581	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	9/8/2016	9/9/2016	9581	C	1,2-Dichloroethane	107-06-2	PPTV	100	10.48 J
CEMRC	9/8/2016	9/9/2016	9581	C	Carbon Tetrachloride	56-23-5	PPTV	100	138
CEMRC	9/8/2016	9/9/2016	9581	C	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	9/8/2016	9/9/2016	9581	C	Chloroform	67-66-3	PPTV	100	11.84 J
CEMRC	9/8/2016	9/9/2016	9581	C	Methylene Chloride	75-09-2	PPTV	100	39.2 J
CEMRC	9/8/2016	9/9/2016	9581	C	Toluene	108-88-3	PPTV	100	203.28
CEMRC	9/8/2016	9/9/2016	9581	C	Trichloroethylene	79-01-6	PPTV	100	23.7 J
CEMRC	9/14/2016	10/10/2016	9585	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	9/14/2016	10/10/2016	9585	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	9/14/2016	10/10/2016	9585	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	9/14/2016	10/10/2016	9585	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	9/14/2016	10/10/2016	9585	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	U
CEMRC	9/14/2016	10/10/2016	9585	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	9/14/2016	10/10/2016	9585	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	9/14/2016	10/10/2016	9585	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	9/14/2016	10/10/2016	9585	D	Toluene	108-88-3	PPBV	0.4	0.2 J

## Qualifiers:

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## Notes:

\* A value will not appear in the MRL column for TICs.

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	9/14/2016	10/10/2016	9585	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	9/14/2016	10/10/2016	9585	D	Acetone	67-64-1	PPBV		1.1 NJ
CEMRC	9/14/2016	10/10/2016	9585	D	Butane	106-97-8	PPBV		3.78 NJ
CEMRC	9/14/2016	10/10/2016	9585	D	Dichlorodifluoromethane	75-71-8	PPBV		0.46 NJ
CEMRC	9/14/2016	10/10/2016	9585	D	Pentane	109-66-0	PPBV		1.54 NJ
CEMRC	9/14/2016	10/10/2016	9585	D	Propane	74-98-6	PPBV		3.64 NJ
CEMRC	9/14/2016	10/10/2016	9585	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	9/14/2016	10/10/2016	9585	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	9/14/2016	10/10/2016	9585	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	9/14/2016	10/10/2016	9585	D	1,2-Dichloroethane	107-06-2	PPTV	100	U
CEMRC	9/14/2016	10/10/2016	9585	D	Carbon Tetrachloride	56-23-5	PPTV	100	80.34 J
CEMRC	9/14/2016	10/10/2016	9585	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	9/14/2016	10/10/2016	9585	D	Chloroform	67-66-3	PPTV	100	9.1 J
CEMRC	9/14/2016	10/10/2016	9585	D	Methylene Chloride	75-09-2	PPTV	100	43.8 J
CEMRC	9/14/2016	10/10/2016	9585	D	Toluene	108-88-3	PPTV	100	207.2
CEMRC	9/14/2016	10/10/2016	9585	D	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	9/14/2016	10/10/2016	9583	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	0.14 J
CEMRC	9/14/2016	10/10/2016	9583	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	9/14/2016	10/10/2016	9583	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	9/14/2016	10/10/2016	9583	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	9/14/2016	10/10/2016	9583	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.5
CEMRC	9/14/2016	10/10/2016	9583	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	9/14/2016	10/10/2016	9583	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	9/14/2016	10/10/2016	9583	C	Methylene Chloride	75-09-2	PPBV	0.4	U

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## Notes:

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	9/14/2016	10/10/2016	9583	C	Toluene	108-88-3	PPBV	0.4	0.22 J
CEMRC	9/14/2016	10/10/2016	9583	C	Trichloroethylene	79-01-6	PPBV	0.4	0.24 J
CEMRC	9/14/2016	10/10/2016	9583	C	Acetone	67-64-1	PPBV		1.02 NJ
CEMRC	9/14/2016	10/10/2016	9583	C	Butane	106-97-8	PPBV		3.26 NJ
CEMRC	9/14/2016	10/10/2016	9583	C	Dichlorodifluoromethane	75-71-8	PPBV		0.58 NJ
CEMRC	9/14/2016	10/10/2016	9583	C	Isobutane	75-28-5	PPBV		5.2 NJ
CEMRC	9/14/2016	10/10/2016	9583	C	Propane	74-98-6	PPBV		5.24 NJ
CEMRC	9/14/2016	10/10/2016	9583	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	142.92
CEMRC	9/14/2016	10/10/2016	9583	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	36.38 J
CEMRC	9/14/2016	10/10/2016	9583	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	9/14/2016	10/10/2016	9583	C	1,2-Dichloroethane	107-06-2	PPTV	100	20.98 J
CEMRC	9/14/2016	10/10/2016	9583	C	Carbon Tetrachloride	56-23-5	PPTV	100	487.7
CEMRC	9/14/2016	10/10/2016	9583	C	Chlorobenzene	108-90-7	PPTV	100	23.4 J
CEMRC	9/14/2016	10/10/2016	9583	C	Chloroform	67-66-3	PPTV	100	39.88 J
CEMRC	9/14/2016	10/10/2016	9583	C	Methylene Chloride	75-09-2	PPTV	100	69.08 J
CEMRC	9/14/2016	10/10/2016	9583	C	Toluene	108-88-3	PPTV	100	231.76
CEMRC	9/14/2016	10/10/2016	9583	C	Trichloroethylene	79-01-6	PPTV	100	195.38
CEMRC	9/15/2016	10/10/2016	9587	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	9/15/2016	10/10/2016	9587	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	9/15/2016	10/10/2016	9587	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	9/15/2016	10/10/2016	9587	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	9/15/2016	10/10/2016	9587	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.08 J
CEMRC	9/15/2016	10/10/2016	9587	D	Chlorobenzene	108-90-7	PPBV	0.4	U

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## Notes:

\* A value will not appear in the MRL column for TICs.

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	9/15/2016	10/10/2016	9587	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	9/15/2016	10/10/2016	9587	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	9/15/2016	10/10/2016	9587	D	Toluene	108-88-3	PPBV	0.4	0.16 J
CEMRC	9/15/2016	10/10/2016	9587	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	9/15/2016	10/10/2016	9587	D	Acetone	67-64-1	PPBV		0.9 NJ
CEMRC	9/15/2016	10/10/2016	9587	D	Butane	106-97-8	PPBV		3.34 NJ
CEMRC	9/15/2016	10/10/2016	9587	D	Dichlorodifluoromethane	75-71-8	PPBV		0.58 NJ
CEMRC	9/15/2016	10/10/2016	9587	D	Isobutane	75-28-5	PPBV		2.04 NJ
CEMRC	9/15/2016	10/10/2016	9587	D	Nonanal	124-19-6	PPBV		0.5 NJ
CEMRC	9/15/2016	10/10/2016	9587	D	Pentane	109-66-0	PPBV		1.28 NJ
CEMRC	9/15/2016	10/10/2016	9587	D	Propane	74-98-6	PPBV		3.24 NJ
CEMRC	9/15/2016	10/10/2016	9587	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	9/15/2016	10/10/2016	9587	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	16.64 J
CEMRC	9/15/2016	10/10/2016	9587	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	9/15/2016	10/10/2016	9587	D	1,2-Dichloroethane	107-06-2	PPTV	100	12.54 J
CEMRC	9/15/2016	10/10/2016	9587	D	Carbon Tetrachloride	56-23-5	PPTV	100	84.68 J
CEMRC	9/15/2016	10/10/2016	9587	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	9/15/2016	10/10/2016	9587	D	Chloroform	67-66-3	PPTV	100	15.8 J
CEMRC	9/15/2016	10/10/2016	9587	D	Methylene Chloride	75-09-2	PPTV	100	52.98 J
CEMRC	9/15/2016	10/10/2016	9587	D	Toluene	108-88-3	PPTV	100	139.86
CEMRC	9/15/2016	10/10/2016	9587	D	Trichloroethylene	79-01-6	PPTV	100	123.96
CEMRC	9/15/2016	10/10/2016	9586	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	0.12 J
CEMRC	9/15/2016	10/10/2016	9586	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	9/15/2016	10/10/2016	9586	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U

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## Notes:

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	9/15/2016	10/10/2016	9586	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	9/15/2016	10/10/2016	9586	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.4
CEMRC	9/15/2016	10/10/2016	9586	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	9/15/2016	10/10/2016	9586	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	9/15/2016	10/10/2016	9586	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	9/15/2016	10/10/2016	9586	C	Toluene	108-88-3	PPBV	0.4	0.14 J
CEMRC	9/15/2016	10/10/2016	9586	C	Trichloroethylene	79-01-6	PPBV	0.4	0.14 J
CEMRC	9/15/2016	10/10/2016	9586	C	Acetone	67-64-1	PPBV		1.02 NJ
CEMRC	9/15/2016	10/10/2016	9586	C	Dichlorodifluoromethane	75-71-8	PPBV		0.56 NJ
CEMRC	9/15/2016	10/10/2016	9586	C	Pentane	109-66-0	PPBV		1.08 NJ
CEMRC	9/15/2016	10/10/2016	9586	C	Propane	74-98-6	PPBV		2.82 NJ
CEMRC	9/15/2016	10/10/2016	9586	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	108.5
CEMRC	9/15/2016	10/10/2016	9586	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	9/15/2016	10/10/2016	9586	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	9/15/2016	10/10/2016	9586	C	1,2-Dichloroethane	107-06-2	PPTV	100	U
CEMRC	9/15/2016	10/10/2016	9586	C	Carbon Tetrachloride	56-23-5	PPTV	100	356.8
CEMRC	9/15/2016	10/10/2016	9586	C	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	9/15/2016	10/10/2016	9586	C	Chloroform	67-66-3	PPTV	100	34.8 J
CEMRC	9/15/2016	10/10/2016	9586	C	Methylene Chloride	75-09-2	PPTV	100	56.1 J
CEMRC	9/15/2016	10/10/2016	9586	C	Toluene	108-88-3	PPTV	100	144.8
CEMRC	9/15/2016	10/10/2016	9586	C	Trichloroethylene	79-01-6	PPTV	100	146.28
CEMRC	9/20/2016	10/16/2016	9589	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	9/20/2016	10/16/2016	9589	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U

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## Notes:

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	9/20/2016	10/16/2016	9589	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	9/20/2016	10/16/2016	9589	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	9/20/2016	10/16/2016	9589	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.08 J
CEMRC	9/20/2016	10/16/2016	9589	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	9/20/2016	10/16/2016	9589	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	9/20/2016	10/16/2016	9589	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	9/20/2016	10/16/2016	9589	D	Toluene	108-88-3	PPBV	0.4	0.34 J
CEMRC	9/20/2016	10/16/2016	9589	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	9/20/2016	10/16/2016	9589	D	Acetone	67-64-1	PPBV		0.76 NJ
CEMRC	9/20/2016	10/16/2016	9589	D	Butane	106-97-8	PPBV		5.94 NJ
CEMRC	9/20/2016	10/16/2016	9589	D	Cyclohexane, methyl-	108-87-2	PPBV		0.52 NJ
CEMRC	9/20/2016	10/16/2016	9589	D	Dichlorodifluoromethane	75-71-8	PPBV		0.52 NJ
CEMRC	9/20/2016	10/16/2016	9589	D	Pentane	109-66-0	PPBV		2.48 NJ
CEMRC	9/20/2016	10/16/2016	9589	D	Propane	74-98-6	PPBV		5.94 NJ
CEMRC	9/20/2016	10/16/2016	9589	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	9/20/2016	10/16/2016	9589	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	9/20/2016	10/16/2016	9589	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	9/20/2016	10/16/2016	9589	D	1,2-Dichloroethane	107-06-2	PPTV	100	18.8 J
CEMRC	9/20/2016	10/16/2016	9589	D	Carbon Tetrachloride	56-23-5	PPTV	100	79.52 J
CEMRC	9/20/2016	10/16/2016	9589	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	9/20/2016	10/16/2016	9589	D	Chloroform	67-66-3	PPTV	100	9.96 J
CEMRC	9/20/2016	10/16/2016	9589	D	Methylene Chloride	75-09-2	PPTV	100	45.18 J
CEMRC	9/20/2016	10/16/2016	9589	D	Toluene	108-88-3	PPTV	100	353.78
CEMRC	9/20/2016	10/16/2016	9589	D	Trichloroethylene	79-01-6	PPTV	100	U

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## Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	9/20/2016	10/16/2016	9588	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	9/20/2016	10/16/2016	9588	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	9/20/2016	10/16/2016	9588	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	9/20/2016	10/16/2016	9588	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	9/20/2016	10/16/2016	9588	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	U
CEMRC	9/20/2016	10/16/2016	9588	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	9/20/2016	10/16/2016	9588	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	9/20/2016	10/16/2016	9588	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	9/20/2016	10/16/2016	9588	C	Toluene	108-88-3	PPBV	0.4	0.38 J
CEMRC	9/20/2016	10/16/2016	9588	C	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	9/20/2016	10/16/2016	9588	C	Acetone	67-64-1	PPBV		1.7 NJ
CEMRC	9/20/2016	10/16/2016	9588	C	Butane	106-97-8	PPBV		6.2 NJ
CEMRC	9/20/2016	10/16/2016	9588	C	Dichlorodifluoromethane	75-71-8	PPBV		0.5 NJ
CEMRC	9/20/2016	10/16/2016	9588	C	Isobutane	75-28-5	PPBV		4.24 NJ
CEMRC	9/20/2016	10/16/2016	9588	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	47.8 J
CEMRC	9/20/2016	10/16/2016	9588	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	16.52 J
CEMRC	9/20/2016	10/16/2016	9588	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	9/20/2016	10/16/2016	9588	C	1,2-Dichloroethane	107-06-2	PPTV	100	19.9 J
CEMRC	9/20/2016	10/16/2016	9588	C	Carbon Tetrachloride	56-23-5	PPTV	100	210.76
CEMRC	9/20/2016	10/16/2016	9588	C	Chlorobenzene	108-90-7	PPTV	100	16.36 J
CEMRC	9/20/2016	10/16/2016	9588	C	Chloroform	67-66-3	PPTV	100	23.04 J
CEMRC	9/20/2016	10/16/2016	9588	C	Methylene Chloride	75-09-2	PPTV	100	50.8 J
CEMRC	9/20/2016	10/16/2016	9588	C	Toluene	108-88-3	PPTV	100	352.74
CEMRC	9/20/2016	10/16/2016	9588	C	Trichloroethylene	79-01-6	PPTV	100	77.1 J

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### Notes:

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	9/21/2016	10/16/2016	9592	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	9/21/2016	10/16/2016	9592	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	9/21/2016	10/16/2016	9592	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	9/21/2016	10/16/2016	9592	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	9/21/2016	10/16/2016	9592	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.1 J
CEMRC	9/21/2016	10/16/2016	9592	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	9/21/2016	10/16/2016	9592	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	9/21/2016	10/16/2016	9592	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	9/21/2016	10/16/2016	9592	D	Toluene	108-88-3	PPBV	0.4	0.16 J
CEMRC	9/21/2016	10/16/2016	9592	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	9/21/2016	10/16/2016	9592	D	Acetone	67-64-1	PPBV		0.66 NJ
CEMRC	9/21/2016	10/16/2016	9592	D	Dichlorodifluoromethane	75-71-8	PPBV		0.62 NJ
CEMRC	9/21/2016	10/16/2016	9592	D	Propane	74-98-6	PPBV		2.52 NJ
CEMRC	9/21/2016	10/16/2016	9592	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	9/21/2016	10/16/2016	9592	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	9/21/2016	10/16/2016	9592	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	9/21/2016	10/16/2016	9592	D	1,2-Dichloroethane	107-06-2	PPTV	100	U
CEMRC	9/21/2016	10/16/2016	9592	D	Carbon Tetrachloride	56-23-5	PPTV	100	88.88 J
CEMRC	9/21/2016	10/16/2016	9592	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	9/21/2016	10/16/2016	9592	D	Chloroform	67-66-3	PPTV	100	11.1 J
CEMRC	9/21/2016	10/16/2016	9592	D	Methylene Chloride	75-09-2	PPTV	100	49.04 J
CEMRC	9/21/2016	10/16/2016	9592	D	Toluene	108-88-3	PPTV	100	139.78
CEMRC	9/21/2016	10/16/2016	9592	D	Trichloroethylene	79-01-6	PPTV	100	11.08 J

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	9/21/2016	10/16/2016	9591	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	9/21/2016	10/16/2016	9591	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	9/21/2016	10/16/2016	9591	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	9/21/2016	10/16/2016	9591	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	9/21/2016	10/16/2016	9591	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.22 J
CEMRC	9/21/2016	10/16/2016	9591	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	9/21/2016	10/16/2016	9591	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	9/21/2016	10/16/2016	9591	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	9/21/2016	10/16/2016	9591	C	Toluene	108-88-3	PPBV	0.4	0.12 J
CEMRC	9/21/2016	10/16/2016	9591	C	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	9/21/2016	10/16/2016	9591	C	Acetone	67-64-1	PPBV		0.98 NJ
CEMRC	9/21/2016	10/16/2016	9591	C	Butane	106-97-8	PPBV		2.46 NJ
CEMRC	9/21/2016	10/16/2016	9591	C	Dichlorodifluoromethane	75-71-8	PPBV		0.58 NJ
CEMRC	9/21/2016	10/16/2016	9591	C	Propane	74-98-6	PPBV		2.34 NJ
CEMRC	9/21/2016	10/16/2016	9591	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	50.48 J
CEMRC	9/21/2016	10/16/2016	9591	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	9/21/2016	10/16/2016	9591	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	9/21/2016	10/16/2016	9591	C	1,2-Dichloroethane	107-06-2	PPTV	100	16.98 J
CEMRC	9/21/2016	10/16/2016	9591	C	Carbon Tetrachloride	56-23-5	PPTV	100	234.52
CEMRC	9/21/2016	10/16/2016	9591	C	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	9/21/2016	10/16/2016	9591	C	Chloroform	67-66-3	PPTV	100	24.54 J
CEMRC	9/21/2016	10/16/2016	9591	C	Methylene Chloride	75-09-2	PPTV	100	49.66 J
CEMRC	9/21/2016	10/16/2016	9591	C	Toluene	108-88-3	PPTV	100	128.2
CEMRC	9/21/2016	10/16/2016	9591	C	Trichloroethylene	79-01-6	PPTV	100	69.74 J

## Qualifiers:

J = Estimated value; below laboratory's method reporting limit (MRL), but above method detection limit (MDL).

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NJ = Presumptive evidence of the presence of the compound at an estimated quantity; only used for tentatively identified compounds (TICs).

## Notes:

\* A value will not appear in the MRL column for TICs.

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	9/28/2016	10/17/2016	9594	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	9/28/2016	10/17/2016	9594	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	9/28/2016	10/17/2016	9594	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	9/28/2016	10/17/2016	9594	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	9/28/2016	10/17/2016	9594	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	U
CEMRC	9/28/2016	10/17/2016	9594	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	9/28/2016	10/17/2016	9594	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	9/28/2016	10/17/2016	9594	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	9/28/2016	10/17/2016	9594	D	Toluene	108-88-3	PPBV	0.4	0.22 J
CEMRC	9/28/2016	10/17/2016	9594	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	9/28/2016	10/17/2016	9594	D	Acetone	67-64-1	PPBV		0.46 NJ
CEMRC	9/28/2016	10/17/2016	9594	D	Butane	106-97-8	PPBV		5.24 NJ
CEMRC	9/28/2016	10/17/2016	9594	D	Cyclohexane, methyl-	108-87-2	PPBV		0.44 NJ
CEMRC	9/28/2016	10/17/2016	9594	D	Dichlorodifluoromethane	75-71-8	PPBV		0.5 NJ
CEMRC	9/28/2016	10/17/2016	9594	D	Pentane	109-66-0	PPBV		2.36 NJ
CEMRC	9/28/2016	10/17/2016	9594	D	Propane	74-98-6	PPBV		5.28 NJ
CEMRC	9/28/2016	10/17/2016	9594	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	9/28/2016	10/17/2016	9594	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	9/28/2016	10/17/2016	9594	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	9/28/2016	10/17/2016	9594	D	1,2-Dichloroethane	107-06-2	PPTV	100	16.72 J
CEMRC	9/28/2016	10/17/2016	9594	D	Carbon Tetrachloride	56-23-5	PPTV	100	79.18 J
CEMRC	9/28/2016	10/17/2016	9594	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	9/28/2016	10/17/2016	9594	D	Chloroform	67-66-3	PPTV	100	12.1 J

## Qualifiers:

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## Notes:

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	9/28/2016	10/17/2016	9594	D	Methylene Chloride	75-09-2	PPTV	100	52.38 J
CEMRC	9/28/2016	10/17/2016	9594	D	Toluene	108-88-3	PPTV	100	231.02
CEMRC	9/28/2016	10/17/2016	9594	D	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	9/28/2016	10/17/2016	9593	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	9/28/2016	10/17/2016	9593	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	9/28/2016	10/17/2016	9593	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	9/28/2016	10/17/2016	9593	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	9/28/2016	10/17/2016	9593	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.12 J
CEMRC	9/28/2016	10/17/2016	9593	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	9/28/2016	10/17/2016	9593	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	9/28/2016	10/17/2016	9593	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	9/28/2016	10/17/2016	9593	C	Toluene	108-88-3	PPBV	0.4	0.24 J
CEMRC	9/28/2016	10/17/2016	9593	C	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	9/28/2016	10/17/2016	9593	C	Acetone	67-64-1	PPBV		0.46 NJ
CEMRC	9/28/2016	10/17/2016	9593	C	Butane	106-97-8	PPBV		7.02 NJ
CEMRC	9/28/2016	10/17/2016	9593	C	Cyclohexane, methyl-	108-87-2	PPBV		0.56 NJ
CEMRC	9/28/2016	10/17/2016	9593	C	Cyclopentane, methyl-	96-37-7	PPBV		0.66 NJ
CEMRC	9/28/2016	10/17/2016	9593	C	Isobutane	75-28-5	PPBV		4.14 NJ
CEMRC	9/28/2016	10/17/2016	9593	C	Pentane	109-66-0	PPBV		3.02 NJ
CEMRC	9/28/2016	10/17/2016	9593	C	Propane	74-98-6	PPBV		7.46 NJ
CEMRC	9/28/2016	10/17/2016	9593	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	17.3 J
CEMRC	9/28/2016	10/17/2016	9593	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	9/28/2016	10/17/2016	9593	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	9/28/2016	10/17/2016	9593	C	1,2-Dichloroethane	107-06-2	PPTV	100	21.44 J

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## Notes:

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## Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	9/28/2016	10/17/2016	9593	C	Carbon Tetrachloride	56-23-5	PPTV	100	115.92
CEMRC	9/28/2016	10/17/2016	9593	C	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	9/28/2016	10/17/2016	9593	C	Chloroform	67-66-3	PPTV	100	17.48 J
CEMRC	9/28/2016	10/17/2016	9593	C	Methylene Chloride	75-09-2	PPTV	100	56.28 J
CEMRC	9/28/2016	10/17/2016	9593	C	Toluene	108-88-3	PPTV	100	242.14
CEMRC	9/28/2016	10/17/2016	9593	C	Trichloroethylene	79-01-6	PPTV	100	28.02 J
CEMRC	9/29/2016	10/17/2016	9596	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	9/29/2016	10/17/2016	9596	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	9/29/2016	10/17/2016	9596	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	9/29/2016	10/17/2016	9596	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	9/29/2016	10/17/2016	9596	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.1 J
CEMRC	9/29/2016	10/17/2016	9596	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	9/29/2016	10/17/2016	9596	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	9/29/2016	10/17/2016	9596	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	9/29/2016	10/17/2016	9596	D	Toluene	108-88-3	PPBV	0.4	0.28 J
CEMRC	9/29/2016	10/17/2016	9596	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	9/29/2016	10/17/2016	9596	D	Acetone	67-64-1	PPBV		1.4 NJ
CEMRC	9/29/2016	10/17/2016	9596	D	Butane	106-97-8	PPBV		4.9 NJ
CEMRC	9/29/2016	10/17/2016	9596	D	Dichlorodifluoromethane	75-71-8	PPBV		0.6 NJ
CEMRC	9/29/2016	10/17/2016	9596	D	Pentane	109-66-0	PPBV		2.04 NJ
CEMRC	9/29/2016	10/17/2016	9596	D	Propane	74-98-6	PPBV		4.98 NJ
CEMRC	9/29/2016	10/17/2016	9596	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	17.82 J
CEMRC	9/29/2016	10/17/2016	9596	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	17.9 J

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### Notes:

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## Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	9/29/2016	10/17/2016	9596	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	9/29/2016	10/17/2016	9596	D	1,2-Dichloroethane	107-06-2	PPTV	100	30.34 J
CEMRC	9/29/2016	10/17/2016	9596	D	Carbon Tetrachloride	56-23-5	PPTV	100	98.4 J
CEMRC	9/29/2016	10/17/2016	9596	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	9/29/2016	10/17/2016	9596	D	Chloroform	67-66-3	PPTV	100	26.22 J
CEMRC	9/29/2016	10/17/2016	9596	D	Methylene Chloride	75-09-2	PPTV	100	73.06 J
CEMRC	9/29/2016	10/17/2016	9596	D	Toluene	108-88-3	PPTV	100	266.36
CEMRC	9/29/2016	10/17/2016	9596	D	Trichloroethylene	79-01-6	PPTV	100	16.74 J
CEMRC	9/29/2016	10/17/2016	9595	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	9/29/2016	10/17/2016	9595	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	9/29/2016	10/17/2016	9595	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	9/29/2016	10/17/2016	9595	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	9/29/2016	10/17/2016	9595	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.24 J
CEMRC	9/29/2016	10/17/2016	9595	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	9/29/2016	10/17/2016	9595	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	9/29/2016	10/17/2016	9595	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	9/29/2016	10/17/2016	9595	C	Toluene	108-88-3	PPBV	0.4	0.28 J
CEMRC	9/29/2016	10/17/2016	9595	C	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	9/29/2016	10/17/2016	9595	C	Acetone	67-64-1	PPBV		0.92 NJ
CEMRC	9/29/2016	10/17/2016	9595	C	Butane	106-97-8	PPBV		6.42 NJ
CEMRC	9/29/2016	10/17/2016	9595	C	Dichlorodifluoromethane	75-71-8	PPBV		0.5 NJ
CEMRC	9/29/2016	10/17/2016	9595	C	Isobutane	75-28-5	PPBV		3.68 NJ
CEMRC	9/29/2016	10/17/2016	9595	C	Pentane	109-66-0	PPBV		2.62 NJ
CEMRC	9/29/2016	10/17/2016	9595	C	Propane	74-98-6	PPBV		6.54 NJ

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### Notes:

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## Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	9/29/2016	10/17/2016	9595	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	54.92 J
CEMRC	9/29/2016	10/17/2016	9595	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	9/29/2016	10/17/2016	9595	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	9/29/2016	10/17/2016	9595	C	1,2-Dichloroethane	107-06-2	PPTV	100	19.42 J
CEMRC	9/29/2016	10/17/2016	9595	C	Carbon Tetrachloride	56-23-5	PPTV	100	241.74
CEMRC	9/29/2016	10/17/2016	9595	C	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	9/29/2016	10/17/2016	9595	C	Chloroform	67-66-3	PPTV	100	23.5 J
CEMRC	9/29/2016	10/17/2016	9595	C	Methylene Chloride	75-09-2	PPTV	100	55.48 J
CEMRC	9/29/2016	10/17/2016	9595	C	Toluene	108-88-3	PPTV	100	276.4
CEMRC	9/29/2016	10/17/2016	9595	C	Trichloroethylene	79-01-6	PPTV	100	85.32 J
CEMRC	10/4/2016	10/27/2016	9599	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	10/4/2016	10/27/2016	9599	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	10/4/2016	10/27/2016	9599	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	10/4/2016	10/27/2016	9599	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	10/4/2016	10/27/2016	9599	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.08 J
CEMRC	10/4/2016	10/27/2016	9599	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	10/4/2016	10/27/2016	9599	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	10/4/2016	10/27/2016	9599	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	10/4/2016	10/27/2016	9599	D	Toluene	108-88-3	PPBV	0.4	0.18 J
CEMRC	10/4/2016	10/27/2016	9599	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	10/4/2016	10/27/2016	9599	D	Acetone	67-64-1	PPBV		0.6 NJ
CEMRC	10/4/2016	10/27/2016	9599	D	Butane	106-97-8	PPBV		4.28 NJ
CEMRC	10/4/2016	10/27/2016	9599	D	Dichlorodifluoromethane	75-71-8	PPBV		0.5 NJ

### Qualifiers:

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### Notes:

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	10/4/2016	10/27/2016	9599	D	Isobutane	75-28-5	PPBV		2.56 NJ
CEMRC	10/4/2016	10/27/2016	9599	D	Pentane	109-66-0	PPBV		1.82 NJ
CEMRC	10/4/2016	10/27/2016	9599	D	Propane	74-98-6	PPBV		4.08 NJ
CEMRC	10/4/2016	10/27/2016	9599	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	10/4/2016	10/27/2016	9599	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	10/4/2016	10/27/2016	9599	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	10/4/2016	10/27/2016	9599	D	1,2-Dichloroethane	107-06-2	PPTV	100	13.56 J
CEMRC	10/4/2016	10/27/2016	9599	D	Carbon Tetrachloride	56-23-5	PPTV	100	77.36 J
CEMRC	10/4/2016	10/27/2016	9599	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	10/4/2016	10/27/2016	9599	D	Chloroform	67-66-3	PPTV	100	11.1 J
CEMRC	10/4/2016	10/27/2016	9599	D	Methylene Chloride	75-09-2	PPTV	100	44.8 J
CEMRC	10/4/2016	10/27/2016	9599	D	Toluene	108-88-3	PPTV	100	178.28
CEMRC	10/4/2016	10/27/2016	9599	D	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	10/4/2016	10/27/2016	9597	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	10/4/2016	10/27/2016	9597	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	10/4/2016	10/27/2016	9597	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	10/4/2016	10/27/2016	9597	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	10/4/2016	10/27/2016	9597	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.1 J
CEMRC	10/4/2016	10/27/2016	9597	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	10/4/2016	10/27/2016	9597	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	10/4/2016	10/27/2016	9597	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	10/4/2016	10/27/2016	9597	C	Toluene	108-88-3	PPBV	0.4	0.2 J
CEMRC	10/4/2016	10/27/2016	9597	C	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	10/4/2016	10/27/2016	9597	C	Acetone	67-64-1	PPBV		0.48 NJ

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## Notes:

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## Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	10/4/2016	10/27/2016	9597	C	Butane	106-97-8	PPBV		4.52 NJ
CEMRC	10/4/2016	10/27/2016	9597	C	Dichlorodifluoromethane	75-71-8	PPBV		0.54 NJ
CEMRC	10/4/2016	10/27/2016	9597	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	9.64 J
CEMRC	10/4/2016	10/27/2016	9597	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	12.24 J
CEMRC	10/4/2016	10/27/2016	9597	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	10/4/2016	10/27/2016	9597	C	1,2-Dichloroethane	107-06-2	PPTV	100	16.26 J
CEMRC	10/4/2016	10/27/2016	9597	C	Carbon Tetrachloride	56-23-5	PPTV	100	97.56 J
CEMRC	10/4/2016	10/27/2016	9597	C	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	10/4/2016	10/27/2016	9597	C	Chloroform	67-66-3	PPTV	100	15.72 J
CEMRC	10/4/2016	10/27/2016	9597	C	Methylene Chloride	75-09-2	PPTV	100	56.52 J
CEMRC	10/4/2016	10/27/2016	9597	C	Toluene	108-88-3	PPTV	100	184.92
CEMRC	10/4/2016	10/27/2016	9597	C	Trichloroethylene	79-01-6	PPTV	100	13.02 J
CEMRC	10/5/2016	10/27/2016	9601	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	10/5/2016	10/27/2016	9601	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	10/5/2016	10/27/2016	9601	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	10/5/2016	10/27/2016	9601	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	10/5/2016	10/27/2016	9601	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.08 J
CEMRC	10/5/2016	10/27/2016	9601	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	10/5/2016	10/27/2016	9601	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	10/5/2016	10/27/2016	9601	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	10/5/2016	10/27/2016	9601	D	Toluene	108-88-3	PPBV	0.4	0.18 J
CEMRC	10/5/2016	10/27/2016	9601	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	10/5/2016	10/27/2016	9601	D	Butane	106-97-8	PPBV		3.92 NJ

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### Notes:

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	10/5/2016	10/27/2016	9601	D	Dichlorodifluoromethane	75-71-8	PPBV		0.54 NJ
CEMRC	10/5/2016	10/27/2016	9601	D	Pentane	109-66-0	PPBV		1.56 NJ
CEMRC	10/5/2016	10/27/2016	9601	D	Propane	74-98-6	PPBV		4.08 NJ
CEMRC	10/5/2016	10/27/2016	9601	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	10/5/2016	10/27/2016	9601	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	10/5/2016	10/27/2016	9601	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	10/5/2016	10/27/2016	9601	D	1,2-Dichloroethane	107-06-2	PPTV	100	21.16 J
CEMRC	10/5/2016	10/27/2016	9601	D	Carbon Tetrachloride	56-23-5	PPTV	100	81.64 J
CEMRC	10/5/2016	10/27/2016	9601	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	10/5/2016	10/27/2016	9601	D	Chloroform	67-66-3	PPTV	100	12.68 J
CEMRC	10/5/2016	10/27/2016	9601	D	Methylene Chloride	75-09-2	PPTV	100	54.44 J
CEMRC	10/5/2016	10/27/2016	9601	D	Toluene	108-88-3	PPTV	100	151.24
CEMRC	10/5/2016	10/27/2016	9601	D	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	10/5/2016	10/27/2016	9600	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	10/5/2016	10/27/2016	9600	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	10/5/2016	10/27/2016	9600	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	10/5/2016	10/27/2016	9600	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	10/5/2016	10/27/2016	9600	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.1 J
CEMRC	10/5/2016	10/27/2016	9600	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	10/5/2016	10/27/2016	9600	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	10/5/2016	10/27/2016	9600	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	10/5/2016	10/27/2016	9600	C	Toluene	108-88-3	PPBV	0.4	0.14 J
CEMRC	10/5/2016	10/27/2016	9600	C	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	10/5/2016	10/27/2016	9600	C	Butane	106-97-8	PPBV		3.8 NJ

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## Notes:

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	10/5/2016	10/27/2016	9600	C	Dichlorodifluoromethane	75-71-8	PPBV		0.54 NJ
CEMRC	10/5/2016	10/27/2016	9600	C	Pentane	109-66-0	PPBV		1.48 NJ
CEMRC	10/5/2016	10/27/2016	9600	C	Propane	74-98-6	PPBV		3.7 NJ
CEMRC	10/5/2016	10/27/2016	9600	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	10.98 J
CEMRC	10/5/2016	10/27/2016	9600	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	10/5/2016	10/27/2016	9600	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	10/5/2016	10/27/2016	9600	C	1,2-Dichloroethane	107-06-2	PPTV	100	16.12 J
CEMRC	10/5/2016	10/27/2016	9600	C	Carbon Tetrachloride	56-23-5	PPTV	100	107.96
CEMRC	10/5/2016	10/27/2016	9600	C	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	10/5/2016	10/27/2016	9600	C	Chloroform	67-66-3	PPTV	100	15.1 J
CEMRC	10/5/2016	10/27/2016	9600	C	Methylene Chloride	75-09-2	PPTV	100	61.04 J
CEMRC	10/5/2016	10/27/2016	9600	C	Toluene	108-88-3	PPTV	100	136.5
CEMRC	10/5/2016	10/27/2016	9600	C	Trichloroethylene	79-01-6	PPTV	100	14.06 J
CEMRC	10/12/2016	10/27/2016	9603	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	10/12/2016	10/27/2016	9603	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	10/12/2016	10/27/2016	9603	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	10/12/2016	10/27/2016	9603	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	10/12/2016	10/27/2016	9603	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	U
CEMRC	10/12/2016	10/27/2016	9603	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	10/12/2016	10/27/2016	9603	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	10/12/2016	10/27/2016	9603	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	10/12/2016	10/27/2016	9603	D	Toluene	108-88-3	PPBV	0.4	0.32 J
CEMRC	10/12/2016	10/27/2016	9603	D	Trichloroethylene	79-01-6	PPBV	0.4	U

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## Notes:

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	10/12/2016	10/27/2016	9603	D	Acetone	67-64-1	PPBV		6.28 NJ
CEMRC	10/12/2016	10/27/2016	9603	D	Butane	106-97-8	PPBV		5.62 NJ
CEMRC	10/12/2016	10/27/2016	9603	D	Cyclohexane, methyl-	108-87-2	PPBV		0.52 NJ
CEMRC	10/12/2016	10/27/2016	9603	D	Dichlorodifluoromethane	75-71-8	PPBV		0.48 NJ
CEMRC	10/12/2016	10/27/2016	9603	D	Pentane	109-66-0	PPBV		2.46 NJ
CEMRC	10/12/2016	10/27/2016	9603	D	Propane	74-98-6	PPBV		5.54 NJ
CEMRC	10/12/2016	10/27/2016	9603	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	10/12/2016	10/27/2016	9603	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	10/12/2016	10/27/2016	9603	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	10/12/2016	10/27/2016	9603	D	1,2-Dichloroethane	107-06-2	PPTV	100	17.74 J
CEMRC	10/12/2016	10/27/2016	9603	D	Carbon Tetrachloride	56-23-5	PPTV	100	84.46 J
CEMRC	10/12/2016	10/27/2016	9603	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	10/12/2016	10/27/2016	9603	D	Chloroform	67-66-3	PPTV	100	11.2 J
CEMRC	10/12/2016	10/27/2016	9603	D	Methylene Chloride	75-09-2	PPTV	100	53.08 J
CEMRC	10/12/2016	10/27/2016	9603	D	Toluene	108-88-3	PPTV	100	321.34
CEMRC	10/12/2016	10/27/2016	9603	D	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	10/12/2016	10/27/2016	9602	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	10/12/2016	10/27/2016	9602	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	10/12/2016	10/27/2016	9602	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	10/12/2016	10/27/2016	9602	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	10/12/2016	10/27/2016	9602	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.12 J
CEMRC	10/12/2016	10/27/2016	9602	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	10/12/2016	10/27/2016	9602	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	10/12/2016	10/27/2016	9602	C	Methylene Chloride	75-09-2	PPBV	0.4	U

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## Notes:

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	10/12/2016	10/27/2016	9602	C	Toluene	108-88-3	PPBV	0.4	0.32 J
CEMRC	10/12/2016	10/27/2016	9602	C	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	10/12/2016	10/27/2016	9602	C	Acetone	67-64-1	PPBV		0.66 NJ
CEMRC	10/12/2016	10/27/2016	9602	C	Butane	106-97-8	PPBV		5.68 NJ
CEMRC	10/12/2016	10/27/2016	9602	C	Cyclohexane, methyl-	108-87-2	PPBV		0.56 NJ
CEMRC	10/12/2016	10/27/2016	9602	C	Dichlorodifluoromethane	75-71-8	PPBV		0.52 NJ
CEMRC	10/12/2016	10/27/2016	9602	C	Pentane	109-66-0	PPBV		2.52 NJ
CEMRC	10/12/2016	10/27/2016	9602	C	Pentane, 2-methyl-	107-83-5	PPBV		0.8 NJ
CEMRC	10/12/2016	10/27/2016	9602	C	Propane	74-98-6	PPBV		5.48 NJ
CEMRC	10/12/2016	10/27/2016	9602	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	10.8 J
CEMRC	10/12/2016	10/27/2016	9602	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	10/12/2016	10/27/2016	9602	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	10/12/2016	10/27/2016	9602	C	1,2-Dichloroethane	107-06-2	PPTV	100	19.6 J
CEMRC	10/12/2016	10/27/2016	9602	C	Carbon Tetrachloride	56-23-5	PPTV	100	109.02
CEMRC	10/12/2016	10/27/2016	9602	C	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	10/12/2016	10/27/2016	9602	C	Chloroform	67-66-3	PPTV	100	16.44 J
CEMRC	10/12/2016	10/27/2016	9602	C	Methylene Chloride	75-09-2	PPTV	100	59.8 J
CEMRC	10/12/2016	10/27/2016	9602	C	Toluene	108-88-3	PPTV	100	314.2
CEMRC	10/12/2016	10/27/2016	9602	C	Trichloroethylene	79-01-6	PPTV	100	16.5 J
CEMRC	10/13/2016	10/27/2016	9605	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	10/13/2016	10/27/2016	9605	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	10/13/2016	10/27/2016	9605	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	10/13/2016	10/27/2016	9605	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U

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## Notes:

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	10/13/2016	10/27/2016	9605	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	U
CEMRC	10/13/2016	10/27/2016	9605	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	10/13/2016	10/27/2016	9605	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	10/13/2016	10/27/2016	9605	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	10/13/2016	10/27/2016	9605	D	Toluene	108-88-3	PPBV	0.4	0.12 J
CEMRC	10/13/2016	10/27/2016	9605	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	10/13/2016	10/27/2016	9605	D	Acetone	67-64-1	PPBV		0.74 NJ
CEMRC	10/13/2016	10/27/2016	9605	D	Dichlorodifluoromethane	75-71-8	PPBV		0.52 NJ
CEMRC	10/13/2016	10/27/2016	9605	D	Isobutane	75-28-5	PPBV		1.52 NJ
CEMRC	10/13/2016	10/27/2016	9605	D	Pentane	109-66-0	PPBV		0.82 NJ
CEMRC	10/13/2016	10/27/2016	9605	D	Propane	74-98-6	PPBV		2.38 NJ
CEMRC	10/13/2016	10/27/2016	9605	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	10/13/2016	10/27/2016	9605	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	10/13/2016	10/27/2016	9605	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	10/13/2016	10/27/2016	9605	D	1,2-Dichloroethane	107-06-2	PPTV	100	10.74 J
CEMRC	10/13/2016	10/27/2016	9605	D	Carbon Tetrachloride	56-23-5	PPTV	100	77.38 J
CEMRC	10/13/2016	10/27/2016	9605	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	10/13/2016	10/27/2016	9605	D	Chloroform	67-66-3	PPTV	100	12.94 J
CEMRC	10/13/2016	10/27/2016	9605	D	Methylene Chloride	75-09-2	PPTV	100	47.68 J
CEMRC	10/13/2016	10/27/2016	9605	D	Toluene	108-88-3	PPTV	100	111.6
CEMRC	10/13/2016	10/27/2016	9605	D	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	10/13/2016	10/27/2016	9604	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	10/13/2016	10/27/2016	9604	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	10/13/2016	10/27/2016	9604	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U

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## Notes:

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## Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	10/13/2016	10/27/2016	9604	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	10/13/2016	10/27/2016	9604	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.12 J
CEMRC	10/13/2016	10/27/2016	9604	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	10/13/2016	10/27/2016	9604	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	10/13/2016	10/27/2016	9604	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	10/13/2016	10/27/2016	9604	C	Toluene	108-88-3	PPBV	0.4	0.12 J
CEMRC	10/13/2016	10/27/2016	9604	C	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	10/13/2016	10/27/2016	9604	C	Acetone	67-64-1	PPBV		0.78 NJ
CEMRC	10/13/2016	10/27/2016	9604	C	Butane	106-97-8	PPBV		2.64 NJ
CEMRC	10/13/2016	10/27/2016	9604	C	Dichlorodifluoromethane	75-71-8	PPBV		0.64 NJ
CEMRC	10/13/2016	10/27/2016	9604	C	Isobutane	75-28-5	PPBV		1.9 NJ
CEMRC	10/13/2016	10/27/2016	9604	C	Pentane	109-66-0	PPBV		1 NJ
CEMRC	10/13/2016	10/27/2016	9604	C	Propane	74-98-6	PPBV		3.02 NJ
CEMRC	10/13/2016	10/27/2016	9604	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	13.26 J
CEMRC	10/13/2016	10/27/2016	9604	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	10/13/2016	10/27/2016	9604	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	10/13/2016	10/27/2016	9604	C	1,2-Dichloroethane	107-06-2	PPTV	100	12.14 J
CEMRC	10/13/2016	10/27/2016	9604	C	Carbon Tetrachloride	56-23-5	PPTV	100	111.28
CEMRC	10/13/2016	10/27/2016	9604	C	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	10/13/2016	10/27/2016	9604	C	Chloroform	67-66-3	PPTV	100	15.6 J
CEMRC	10/13/2016	10/27/2016	9604	C	Methylene Chloride	75-09-2	PPTV	100	55.7 J
CEMRC	10/13/2016	10/27/2016	9604	C	Toluene	108-88-3	PPTV	100	117.54
CEMRC	10/13/2016	10/27/2016	9604	C	Trichloroethylene	79-01-6	PPTV	100	15.32 J

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### Notes:

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	10/18/2016	11/11/2016	9607	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	10/18/2016	11/11/2016	9607	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	10/18/2016	11/11/2016	9607	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	10/18/2016	11/11/2016	9607	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	10/18/2016	11/11/2016	9607	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	U
CEMRC	10/18/2016	11/11/2016	9607	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	10/18/2016	11/11/2016	9607	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	10/18/2016	11/11/2016	9607	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	10/18/2016	11/11/2016	9607	D	Toluene	108-88-3	PPBV	0.4	0.28 J
CEMRC	10/18/2016	11/11/2016	9607	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	10/18/2016	11/11/2016	9607	D	Butane	106-97-8	PPBV		7.12 NJ
CEMRC	10/18/2016	11/11/2016	9607	D	Butane, 2-methyl-	78-78-4	PPBV		3.9 NJ
CEMRC	10/18/2016	11/11/2016	9607	D	Cyclohexane, methyl-	108-87-2	PPBV		0.68 NJ
CEMRC	10/18/2016	11/11/2016	9607	D	Cyclopentane, methyl-	96-37-7	PPBV		0.7 NJ
CEMRC	10/18/2016	11/11/2016	9607	D	Dichlorodifluoromethane	75-71-8	PPBV		1.56 NJ
CEMRC	10/18/2016	11/11/2016	9607	D	Isobutane	75-28-5	PPBV		1.8 NJ
CEMRC	10/18/2016	11/11/2016	9607	D	Pentane	109-66-0	PPBV		3.3 NJ
CEMRC	10/18/2016	11/11/2016	9607	D	Pentane, 2-methyl-	107-83-5	PPBV		0.94 NJ
CEMRC	10/18/2016	11/11/2016	9607	D	Propane	74-98-6	PPBV		6.46 NJ
CEMRC	10/18/2016	11/11/2016	9607	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	10/18/2016	11/11/2016	9607	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	10/18/2016	11/11/2016	9607	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	10/18/2016	11/11/2016	9607	D	1,2-Dichloroethane	107-06-2	PPTV	100	20.16 J
CEMRC	10/18/2016	11/11/2016	9607	D	Carbon Tetrachloride	56-23-5	PPTV	100	86.52 J

## Qualifiers:

J = Estimated value; below laboratory's method reporting limit (MRL), but above method detection limit (MDL).

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## Notes:

\* A value will not appear in the MRL column for TICs.

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analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	10/18/2016	11/11/2016	9607	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	10/18/2016	11/11/2016	9607	D	Chloroform	67-66-3	PPTV	100	12.08 J
CEMRC	10/18/2016	11/11/2016	9607	D	Methylene Chloride	75-09-2	PPTV	100	67.28 J
CEMRC	10/18/2016	11/11/2016	9607	D	Toluene	108-88-3	PPTV	100	299.44
CEMRC	10/18/2016	11/11/2016	9607	D	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	10/18/2016	11/11/2016	9606	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	10/18/2016	11/11/2016	9606	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	10/18/2016	11/11/2016	9606	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	10/18/2016	11/11/2016	9606	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	10/18/2016	11/11/2016	9606	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.14 J
CEMRC	10/18/2016	11/11/2016	9606	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	10/18/2016	11/11/2016	9606	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	10/18/2016	11/11/2016	9606	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	10/18/2016	11/11/2016	9606	C	Toluene	108-88-3	PPBV	0.4	0.3 J
CEMRC	10/18/2016	11/11/2016	9606	C	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	10/18/2016	11/11/2016	9606	C	Butane	106-97-8	PPBV		8.18 NJ
CEMRC	10/18/2016	11/11/2016	9606	C	Butane, 2-methyl-	78-78-4	PPBV		4.28 NJ
CEMRC	10/18/2016	11/11/2016	9606	C	Cyclohexane, methyl-	108-87-2	PPBV		0.72 NJ
CEMRC	10/18/2016	11/11/2016	9606	C	Cyclopentane, methyl-	96-37-7	PPBV		0.86 NJ
CEMRC	10/18/2016	11/11/2016	9606	C	Isobutane	75-28-5	PPBV		2.02 NJ
CEMRC	10/18/2016	11/11/2016	9606	C	Pentane	109-66-0	PPBV		3.64 NJ
CEMRC	10/18/2016	11/11/2016	9606	C	Pentane, 2-methyl-	107-83-5	PPBV		1.06 NJ
CEMRC	10/18/2016	11/11/2016	9606	C	Propane	74-98-6	PPBV		7.44 NJ
CEMRC	10/18/2016	11/11/2016	9606	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	20.68 J

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	10/18/2016	11/11/2016	9606	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	14.76 J
CEMRC	10/18/2016	11/11/2016	9606	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	10/18/2016	11/11/2016	9606	C	1,2-Dichloroethane	107-06-2	PPTV	100	22.46 J
CEMRC	10/18/2016	11/11/2016	9606	C	Carbon Tetrachloride	56-23-5	PPTV	100	134.42
CEMRC	10/18/2016	11/11/2016	9606	C	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	10/18/2016	11/11/2016	9606	C	Chloroform	67-66-3	PPTV	100	21.22 J
CEMRC	10/18/2016	11/11/2016	9606	C	Methylene Chloride	75-09-2	PPTV	100	67.6 J
CEMRC	10/18/2016	11/11/2016	9606	C	Toluene	108-88-3	PPTV	100	341.94
CEMRC	10/18/2016	11/11/2016	9606	C	Trichloroethylene	79-01-6	PPTV	100	43.12 J
CEMRC	10/20/2016	11/11/2016	9612	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	10/20/2016	11/11/2016	9612	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	10/20/2016	11/11/2016	9612	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	10/20/2016	11/11/2016	9612	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	10/20/2016	11/11/2016	9612	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.1 J
CEMRC	10/20/2016	11/11/2016	9612	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	10/20/2016	11/11/2016	9612	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	10/20/2016	11/11/2016	9612	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	10/20/2016	11/11/2016	9612	D	Toluene	108-88-3	PPBV	0.4	0.12 J
CEMRC	10/20/2016	11/11/2016	9612	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	10/20/2016	11/11/2016	9612	D	Acetone	67-64-1	PPBV		1.3 NJ
CEMRC	10/20/2016	11/11/2016	9612	D	Butane	106-97-8	PPBV		3.52 NJ
CEMRC	10/20/2016	11/11/2016	9612	D	Dichlorodifluoromethane	75-71-8	PPBV		2.02 NJ
CEMRC	10/20/2016	11/11/2016	9612	D	Isobutane	75-28-5	PPBV		1.12 NJ

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analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	10/20/2016	11/11/2016	9612	D	Pentane	109-66-0	PPBV		1.56 NJ
CEMRC	10/20/2016	11/11/2016	9612	D	Propane	74-98-6	PPBV		3.78 NJ
CEMRC	10/20/2016	11/11/2016	9612	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	10/20/2016	11/11/2016	9612	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	10/20/2016	11/11/2016	9612	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	10/20/2016	11/11/2016	9612	D	1,2-Dichloroethane	107-06-2	PPTV	100	13.84 J
CEMRC	10/20/2016	11/11/2016	9612	D	Carbon Tetrachloride	56-23-5	PPTV	100	97.26 J
CEMRC	10/20/2016	11/11/2016	9612	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	10/20/2016	11/11/2016	9612	D	Chloroform	67-66-3	PPTV	100	14.68 J
CEMRC	10/20/2016	11/11/2016	9612	D	Methylene Chloride	75-09-2	PPTV	100	65.22 J
CEMRC	10/20/2016	11/11/2016	9612	D	Toluene	108-88-3	PPTV	100	144.5
CEMRC	10/20/2016	11/11/2016	9612	D	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	10/20/2016	11/11/2016	9611	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	10/20/2016	11/11/2016	9611	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	10/20/2016	11/11/2016	9611	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	10/20/2016	11/11/2016	9611	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	10/20/2016	11/11/2016	9611	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	U
CEMRC	10/20/2016	11/11/2016	9611	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	10/20/2016	11/11/2016	9611	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	10/20/2016	11/11/2016	9611	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	10/20/2016	11/11/2016	9611	C	Toluene	108-88-3	PPBV	0.4	0.1 J
CEMRC	10/20/2016	11/11/2016	9611	C	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	10/20/2016	11/11/2016	9611	C	Butane	106-97-8	PPBV		3.16 NJ
CEMRC	10/20/2016	11/11/2016	9611	C	Butane, 2-methyl-	78-78-4	PPBV		2.1 NJ

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Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	10/20/2016	11/11/2016	9611	C	Dichlorodifluoromethane	75-71-8	PPBV		1.74 NJ
CEMRC	10/20/2016	11/11/2016	9611	C	Isobutane	75-28-5	PPBV		0.84 NJ
CEMRC	10/20/2016	11/11/2016	9611	C	Pentane	109-66-0	PPBV		1.22 NJ
CEMRC	10/20/2016	11/11/2016	9611	C	Propane	74-98-6	PPBV		3.34 NJ
CEMRC	10/20/2016	11/11/2016	9611	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	10/20/2016	11/11/2016	9611	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	10/20/2016	11/11/2016	9611	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	10/20/2016	11/11/2016	9611	C	1,2-Dichloroethane	107-06-2	PPTV	100	12.46 J
CEMRC	10/20/2016	11/11/2016	9611	C	Carbon Tetrachloride	56-23-5	PPTV	100	88.42 J
CEMRC	10/20/2016	11/11/2016	9611	C	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	10/20/2016	11/11/2016	9611	C	Chloroform	67-66-3	PPTV	100	13.6 J
CEMRC	10/20/2016	11/11/2016	9611	C	Methylene Chloride	75-09-2	PPTV	100	63.94 J
CEMRC	10/20/2016	11/11/2016	9611	C	Toluene	108-88-3	PPTV	100	128.22
CEMRC	10/20/2016	11/11/2016	9611	C	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	10/26/2016	11/16/2016	9614	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	10/26/2016	11/16/2016	9614	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	10/26/2016	11/16/2016	9614	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	10/26/2016	11/16/2016	9614	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	10/26/2016	11/16/2016	9614	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	U
CEMRC	10/26/2016	11/16/2016	9614	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	10/26/2016	11/16/2016	9614	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	10/26/2016	11/16/2016	9614	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	10/26/2016	11/16/2016	9614	D	Toluene	108-88-3	PPBV	0.4	0.22 J

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Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	10/26/2016	11/16/2016	9614	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	10/26/2016	11/16/2016	9614	D	Butane	106-97-8	PPBV		6.54 NJ
CEMRC	10/26/2016	11/16/2016	9614	D	Butane, 2-methyl-	78-78-4	PPBV		3.8 NJ
CEMRC	10/26/2016	11/16/2016	9614	D	Cyclopentane, methyl-	96-37-7	PPBV		0.56 NJ
CEMRC	10/26/2016	11/16/2016	9614	D	Dichlorodifluoromethane	75-71-8	PPBV		1.72 NJ
CEMRC	10/26/2016	11/16/2016	9614	D	Isobutane	75-28-5	PPBV		1.74 NJ
CEMRC	10/26/2016	11/16/2016	9614	D	Pentane	109-66-0	PPBV		2.84 NJ
CEMRC	10/26/2016	11/16/2016	9614	D	Pentane, 2-methyl-	107-83-5	PPBV		0.72 NJ
CEMRC	10/26/2016	11/16/2016	9614	D	Propane	74-98-6	PPBV		6.14 NJ
CEMRC	10/26/2016	11/16/2016	9614	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	10/26/2016	11/16/2016	9614	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	10/26/2016	11/16/2016	9614	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	10/26/2016	11/16/2016	9614	D	1,2-Dichloroethane	107-06-2	PPTV	100	16.3 J
CEMRC	10/26/2016	11/16/2016	9614	D	Carbon Tetrachloride	56-23-5	PPTV	100	82.64 J
CEMRC	10/26/2016	11/16/2016	9614	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	10/26/2016	11/16/2016	9614	D	Chloroform	67-66-3	PPTV	100	13.92 J
CEMRC	10/26/2016	11/16/2016	9614	D	Methylene Chloride	75-09-2	PPTV	100	58.9 J
CEMRC	10/26/2016	11/16/2016	9614	D	Toluene	108-88-3	PPTV	100	233.64
CEMRC	10/26/2016	11/16/2016	9614	D	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	10/26/2016	11/16/2016	9613	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	10/26/2016	11/16/2016	9613	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	10/26/2016	11/16/2016	9613	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	10/26/2016	11/16/2016	9613	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	10/26/2016	11/16/2016	9613	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.1 J

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Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	10/26/2016	11/16/2016	9613	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	10/26/2016	11/16/2016	9613	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	10/26/2016	11/16/2016	9613	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	10/26/2016	11/16/2016	9613	C	Toluene	108-88-3	PPBV	0.4	0.22 J
CEMRC	10/26/2016	11/16/2016	9613	C	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	10/26/2016	11/16/2016	9613	C	Butane	106-97-8	PPBV		5.52 NJ
CEMRC	10/26/2016	11/16/2016	9613	C	Butane, 2-methyl-	78-78-4	PPBV		3.68 NJ
CEMRC	10/26/2016	11/16/2016	9613	C	Cyclopentane, methyl-	96-37-7	PPBV		0.46 NJ
CEMRC	10/26/2016	11/16/2016	9613	C	Isobutane	75-28-5	PPBV		1.8 NJ
CEMRC	10/26/2016	11/16/2016	9613	C	Pentane	109-66-0	PPBV		2.6 NJ
CEMRC	10/26/2016	11/16/2016	9613	C	Pentane, 2-methyl-	107-83-5	PPBV		0.7 NJ
CEMRC	10/26/2016	11/16/2016	9613	C	Propane	74-98-6	PPBV		5.74 NJ
CEMRC	10/26/2016	11/16/2016	9613	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	11.96 J
CEMRC	10/26/2016	11/16/2016	9613	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	15.94 J
CEMRC	10/26/2016	11/16/2016	9613	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	10/26/2016	11/16/2016	9613	C	1,2-Dichloroethane	107-06-2	PPTV	100	16.42 J
CEMRC	10/26/2016	11/16/2016	9613	C	Carbon Tetrachloride	56-23-5	PPTV	100	107.94
CEMRC	10/26/2016	11/16/2016	9613	C	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	10/26/2016	11/16/2016	9613	C	Chloroform	67-66-3	PPTV	100	18.28 J
CEMRC	10/26/2016	11/16/2016	9613	C	Methylene Chloride	75-09-2	PPTV	100	60.44 J
CEMRC	10/26/2016	11/16/2016	9613	C	Toluene	108-88-3	PPTV	100	247.66
CEMRC	10/26/2016	11/16/2016	9613	C	Trichloroethylene	79-01-6	PPTV	100	24.2 J
CEMRC	10/27/2016	11/16/2016	9616	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U

## Qualifiers:

J = Estimated value; below laboratory's method reporting limit (MRL), but above method detection limit (MDL).

U = Compound not detected above the MDL.

NJ = Presumptive evidence of the presence of the compound at an estimated quantity; only used for tentatively identified compounds (TICs).

## Notes:

\* A value will not appear in the MRL column for TICs.

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	10/27/2016	11/16/2016	9616	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	10/27/2016	11/16/2016	9616	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	10/27/2016	11/16/2016	9616	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	10/27/2016	11/16/2016	9616	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	U
CEMRC	10/27/2016	11/16/2016	9616	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	10/27/2016	11/16/2016	9616	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	10/27/2016	11/16/2016	9616	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	10/27/2016	11/16/2016	9616	D	Toluene	108-88-3	PPBV	0.4	0.18 J
CEMRC	10/27/2016	11/16/2016	9616	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	10/27/2016	11/16/2016	9616	D	Butane	106-97-8	PPBV		3.88 NJ
CEMRC	10/27/2016	11/16/2016	9616	D	Butane, 2-methyl-	78-78-4	PPBV		2.68 NJ
CEMRC	10/27/2016	11/16/2016	9616	D	Dichlorodifluoromethane	75-71-8	PPBV		2.04 NJ
CEMRC	10/27/2016	11/16/2016	9616	D	Isobutane	75-28-5	PPBV		1.08 NJ
CEMRC	10/27/2016	11/16/2016	9616	D	Pentane	109-66-0	PPBV		1.54 NJ
CEMRC	10/27/2016	11/16/2016	9616	D	Propane	74-98-6	PPBV		4.18 NJ
CEMRC	10/27/2016	11/16/2016	9616	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	10/27/2016	11/16/2016	9616	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	10/27/2016	11/16/2016	9616	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	10/27/2016	11/16/2016	9616	D	1,2-Dichloroethane	107-06-2	PPTV	100	11.84 J
CEMRC	10/27/2016	11/16/2016	9616	D	Carbon Tetrachloride	56-23-5	PPTV	100	91.94 J
CEMRC	10/27/2016	11/16/2016	9616	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	10/27/2016	11/16/2016	9616	D	Chloroform	67-66-3	PPTV	100	12.72 J
CEMRC	10/27/2016	11/16/2016	9616	D	Methylene Chloride	75-09-2	PPTV	100	55.72 J
CEMRC	10/27/2016	11/16/2016	9616	D	Toluene	108-88-3	PPTV	100	191.66

## Qualifiers:

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## Notes:

\* A value will not appear in the MRL column for TICs.

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	10/27/2016	11/16/2016	9616	D	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	10/27/2016	11/16/2016	9615	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	10/27/2016	11/16/2016	9615	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	10/27/2016	11/16/2016	9615	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	10/27/2016	11/16/2016	9615	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	10/27/2016	11/16/2016	9615	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	U
CEMRC	10/27/2016	11/16/2016	9615	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	10/27/2016	11/16/2016	9615	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	10/27/2016	11/16/2016	9615	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	10/27/2016	11/16/2016	9615	C	Toluene	108-88-3	PPBV	0.4	0.16 J
CEMRC	10/27/2016	11/16/2016	9615	C	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	10/27/2016	11/16/2016	9615	C	Butane	106-97-8	PPBV		3.96 NJ
CEMRC	10/27/2016	11/16/2016	9615	C	Butane, 2-methyl-	78-78-4	PPBV		2.74 NJ
CEMRC	10/27/2016	11/16/2016	9615	C	Dichlorodifluoromethane	75-71-8	PPBV		0.62 NJ
CEMRC	10/27/2016	11/16/2016	9615	C	Isobutane	75-28-5	PPBV		1.06 NJ
CEMRC	10/27/2016	11/16/2016	9615	C	Pentane	109-66-0	PPBV		1.46 NJ
CEMRC	10/27/2016	11/16/2016	9615	C	Propane	74-98-6	PPBV		3.9 NJ
CEMRC	10/27/2016	11/16/2016	9615	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	10/27/2016	11/16/2016	9615	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	10/27/2016	11/16/2016	9615	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	10/27/2016	11/16/2016	9615	C	1,2-Dichloroethane	107-06-2	PPTV	100	11.98 J
CEMRC	10/27/2016	11/16/2016	9615	C	Carbon Tetrachloride	56-23-5	PPTV	100	85.76 J
CEMRC	10/27/2016	11/16/2016	9615	C	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	10/27/2016	11/16/2016	9615	C	Chloroform	67-66-3	PPTV	100	11.84 J

## Qualifiers:

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## Notes:

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## Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	10/27/2016	11/16/2016	9615	C	Methylene Chloride	75-09-2	PPTV	100	52.94 J
CEMRC	10/27/2016	11/16/2016	9615	C	Toluene	108-88-3	PPTV	100	182.44
CEMRC	10/27/2016	11/16/2016	9615	C	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	11/1/2016	11/22/2016	9619	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	11/1/2016	11/22/2016	9619	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	11/1/2016	11/22/2016	9619	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	11/1/2016	11/22/2016	9619	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	11/1/2016	11/22/2016	9619	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	U
CEMRC	11/1/2016	11/22/2016	9619	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	11/1/2016	11/22/2016	9619	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	11/1/2016	11/22/2016	9619	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	11/1/2016	11/22/2016	9619	D	Toluene	108-88-3	PPBV	0.4	0.34 J
CEMRC	11/1/2016	11/22/2016	9619	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	11/1/2016	11/22/2016	9619	D	Butane	106-97-8	PPBV		8.18 NJ
CEMRC	11/1/2016	11/22/2016	9619	D	Butane, 2-methyl-	78-78-4	PPBV		4.18 NJ
CEMRC	11/1/2016	11/22/2016	9619	D	Cyclohexane, methyl-	108-87-2	PPBV		0.6 NJ
CEMRC	11/1/2016	11/22/2016	9619	D	Cyclopentane, methyl-	96-37-7	PPBV		0.6 NJ
CEMRC	11/1/2016	11/22/2016	9619	D	Dichlorodifluoromethane	75-71-8	PPBV		1.56 NJ
CEMRC	11/1/2016	11/22/2016	9619	D	Isobutane	75-28-5	PPBV		2.1 NJ
CEMRC	11/1/2016	11/22/2016	9619	D	Pentane	109-66-0	PPBV		3.58 NJ
CEMRC	11/1/2016	11/22/2016	9619	D	Pentane, 2-methyl-	107-83-5	PPBV		0.94 NJ
CEMRC	11/1/2016	11/22/2016	9619	D	Propane	74-98-6	PPBV		7.72 NJ
CEMRC	11/1/2016	11/22/2016	9619	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U

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### Notes:

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	11/1/2016	11/22/2016	9619	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	11/1/2016	11/22/2016	9619	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	11/1/2016	11/22/2016	9619	D	1,2-Dichloroethane	107-06-2	PPTV	100	18.16 J
CEMRC	11/1/2016	11/22/2016	9619	D	Carbon Tetrachloride	56-23-5	PPTV	100	89.4 J
CEMRC	11/1/2016	11/22/2016	9619	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	11/1/2016	11/22/2016	9619	D	Chloroform	67-66-3	PPTV	100	12.42 J
CEMRC	11/1/2016	11/22/2016	9619	D	Methylene Chloride	75-09-2	PPTV	100	63.76 J
CEMRC	11/1/2016	11/22/2016	9619	D	Toluene	108-88-3	PPTV	100	351.4
CEMRC	11/1/2016	11/22/2016	9619	D	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	11/1/2016	11/22/2016	9617	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	11/1/2016	11/22/2016	9617	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	11/1/2016	11/22/2016	9617	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	11/1/2016	11/22/2016	9617	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	11/1/2016	11/22/2016	9617	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.14 J
CEMRC	11/1/2016	11/22/2016	9617	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	11/1/2016	11/22/2016	9617	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	11/1/2016	11/22/2016	9617	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	11/1/2016	11/22/2016	9617	C	Toluene	108-88-3	PPBV	0.4	0.32 J
CEMRC	11/1/2016	11/22/2016	9617	C	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	11/1/2016	11/22/2016	9617	C	Butane	106-97-8	PPBV		7.92 NJ
CEMRC	11/1/2016	11/22/2016	9617	C	Butane, 2-methyl-	78-78-4	PPBV		4.16 NJ
CEMRC	11/1/2016	11/22/2016	9617	C	Cyclohexane, methyl-	108-87-2	PPBV		0.6 NJ
CEMRC	11/1/2016	11/22/2016	9617	C	Cyclopentane, methyl-	96-37-7	PPBV		0.62 NJ
CEMRC	11/1/2016	11/22/2016	9617	C	Dichlorodifluoromethane	75-71-8	PPBV		1.44 NJ

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## Notes:

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## Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	11/1/2016	11/22/2016	9617	C	Isobutane	75-28-5	PPBV		2 NJ
CEMRC	11/1/2016	11/22/2016	9617	C	Pentane	109-66-0	PPBV		3.6 NJ
CEMRC	11/1/2016	11/22/2016	9617	C	Pentane, 2-methyl-	107-83-5	PPBV		0.96 NJ
CEMRC	11/1/2016	11/22/2016	9617	C	Propane	74-98-6	PPBV		7.4 NJ
CEMRC	11/1/2016	11/22/2016	9617	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	19.96 J
CEMRC	11/1/2016	11/22/2016	9617	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	17.32 J
CEMRC	11/1/2016	11/22/2016	9617	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	11/1/2016	11/22/2016	9617	C	1,2-Dichloroethane	107-06-2	PPTV	100	19.38 J
CEMRC	11/1/2016	11/22/2016	9617	C	Carbon Tetrachloride	56-23-5	PPTV	100	137.56
CEMRC	11/1/2016	11/22/2016	9617	C	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	11/1/2016	11/22/2016	9617	C	Chloroform	67-66-3	PPTV	100	22.7 J
CEMRC	11/1/2016	11/22/2016	9617	C	Methylene Chloride	75-09-2	PPTV	100	69.84 J
CEMRC	11/1/2016	11/22/2016	9617	C	Toluene	108-88-3	PPTV	100	347.24
CEMRC	11/1/2016	11/22/2016	9617	C	Trichloroethylene	79-01-6	PPTV	100	48.26 J
CEMRC	11/2/2016	11/22/2016	9621	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	11/2/2016	11/22/2016	9621	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	11/2/2016	11/22/2016	9621	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	11/2/2016	11/22/2016	9621	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	11/2/2016	11/22/2016	9621	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	U
CEMRC	11/2/2016	11/22/2016	9621	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	11/2/2016	11/22/2016	9621	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	11/2/2016	11/22/2016	9621	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	11/2/2016	11/22/2016	9621	D	Toluene	108-88-3	PPBV	0.4	0.36 J

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### Notes:

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	11/2/2016	11/22/2016	9621	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	11/2/2016	11/22/2016	9621	D	Butane	106-97-8	PPBV		7.78 NJ
CEMRC	11/2/2016	11/22/2016	9621	D	Butane, 2-methyl-	78-78-4	PPBV		4.1 NJ
CEMRC	11/2/2016	11/22/2016	9621	D	Cyclohexane, methyl-	108-87-2	PPBV		0.7 NJ
CEMRC	11/2/2016	11/22/2016	9621	D	Cyclopentane, methyl-	96-37-7	PPBV		0.8 NJ
CEMRC	11/2/2016	11/22/2016	9621	D	Isobutane	75-28-5	PPBV		2.44 NJ
CEMRC	11/2/2016	11/22/2016	9621	D	Pentane	109-66-0	PPBV		3.48 NJ
CEMRC	11/2/2016	11/22/2016	9621	D	Pentane, 2-methyl-	107-83-5	PPBV		1.1 NJ
CEMRC	11/2/2016	11/22/2016	9621	D	Propane	74-98-6	PPBV		8.7 NJ
CEMRC	11/2/2016	11/22/2016	9621	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	11/2/2016	11/22/2016	9621	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	11/2/2016	11/22/2016	9621	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	11/2/2016	11/22/2016	9621	D	1,2-Dichloroethane	107-06-2	PPTV	100	19.04 J
CEMRC	11/2/2016	11/22/2016	9621	D	Carbon Tetrachloride	56-23-5	PPTV	100	90.86 J
CEMRC	11/2/2016	11/22/2016	9621	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	11/2/2016	11/22/2016	9621	D	Chloroform	67-66-3	PPTV	100	12.52 J
CEMRC	11/2/2016	11/22/2016	9621	D	Methylene Chloride	75-09-2	PPTV	100	54.72 J
CEMRC	11/2/2016	11/22/2016	9621	D	Toluene	108-88-3	PPTV	100	397.32
CEMRC	11/2/2016	11/22/2016	9621	D	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	11/2/2016	11/22/2016	9620	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	11/2/2016	11/22/2016	9620	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	11/2/2016	11/22/2016	9620	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	11/2/2016	11/22/2016	9620	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	11/2/2016	11/22/2016	9620	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.18 J

## Qualifiers:

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## Notes:

\* A value will not appear in the MRL column for TICs.

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## Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	11/2/2016	11/22/2016	9620	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	11/2/2016	11/22/2016	9620	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	11/2/2016	11/22/2016	9620	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	11/2/2016	11/22/2016	9620	C	Toluene	108-88-3	PPBV	0.4	0.32 J
CEMRC	11/2/2016	11/22/2016	9620	C	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	11/2/2016	11/22/2016	9620	C	Butane	106-97-8	PPBV		8.76 NJ
CEMRC	11/2/2016	11/22/2016	9620	C	Butane, 2-methyl-	78-78-4	PPBV		4.64 NJ
CEMRC	11/2/2016	11/22/2016	9620	C	Cyclohexane, methyl-	108-87-2	PPBV		0.6 NJ
CEMRC	11/2/2016	11/22/2016	9620	C	Cyclopentane, methyl-	96-37-7	PPBV		0.66 NJ
CEMRC	11/2/2016	11/22/2016	9620	C	Isobutane	75-28-5	PPBV		2.36 NJ
CEMRC	11/2/2016	11/22/2016	9620	C	Pentane	109-66-0	PPBV		3.78 NJ
CEMRC	11/2/2016	11/22/2016	9620	C	Pentane, 2-methyl-	107-83-5	PPBV		1.02 NJ
CEMRC	11/2/2016	11/22/2016	9620	C	Propane	74-98-6	PPBV		8.12 NJ
CEMRC	11/2/2016	11/22/2016	9620	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	32.1 J
CEMRC	11/2/2016	11/22/2016	9620	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	11/2/2016	11/22/2016	9620	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	11/2/2016	11/22/2016	9620	C	1,2-Dichloroethane	107-06-2	PPTV	100	19.42 J
CEMRC	11/2/2016	11/22/2016	9620	C	Carbon Tetrachloride	56-23-5	PPTV	100	180.08
CEMRC	11/2/2016	11/22/2016	9620	C	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	11/2/2016	11/22/2016	9620	C	Chloroform	67-66-3	PPTV	100	20.94 J
CEMRC	11/2/2016	11/22/2016	9620	C	Methylene Chloride	75-09-2	PPTV	100	65.26 J
CEMRC	11/2/2016	11/22/2016	9620	C	Toluene	108-88-3	PPTV	100	341.56
CEMRC	11/2/2016	11/22/2016	9620	C	Trichloroethylene	79-01-6	PPTV	100	56.98 J

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### Notes:

\* A value will not appear in the MRL column for TICs.

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	11/9/2016	11/22/2016	9623	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	11/9/2016	11/22/2016	9623	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	11/9/2016	11/22/2016	9623	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	11/9/2016	11/22/2016	9623	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	11/9/2016	11/22/2016	9623	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.1 J
CEMRC	11/9/2016	11/22/2016	9623	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	11/9/2016	11/22/2016	9623	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	11/9/2016	11/22/2016	9623	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	11/9/2016	11/22/2016	9623	D	Toluene	108-88-3	PPBV	0.4	0.1 J
CEMRC	11/9/2016	11/22/2016	9623	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	11/9/2016	11/22/2016	9623	D	Butane	106-97-8	PPBV		3.3 NJ
CEMRC	11/9/2016	11/22/2016	9623	D	Butane, 2-methyl-	78-78-4	PPBV		1.72 NJ
CEMRC	11/9/2016	11/22/2016	9623	D	Dichlorodifluoromethane	75-71-8	PPBV		2.54 NJ
CEMRC	11/9/2016	11/22/2016	9623	D	Isobutane	75-28-5	PPBV		1.02 NJ
CEMRC	11/9/2016	11/22/2016	9623	D	Pentane	109-66-0	PPBV		1.1 NJ
CEMRC	11/9/2016	11/22/2016	9623	D	Propane	74-98-6	PPBV		3.96 NJ
CEMRC	11/9/2016	11/22/2016	9623	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	11/9/2016	11/22/2016	9623	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	11/9/2016	11/22/2016	9623	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	11/9/2016	11/22/2016	9623	D	1,2-Dichloroethane	107-06-2	PPTV	100	14.42 J
CEMRC	11/9/2016	11/22/2016	9623	D	Carbon Tetrachloride	56-23-5	PPTV	100	98.16 J
CEMRC	11/9/2016	11/22/2016	9623	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	11/9/2016	11/22/2016	9623	D	Chloroform	67-66-3	PPTV	100	15.24 J
CEMRC	11/9/2016	11/22/2016	9623	D	Methylene Chloride	75-09-2	PPTV	100	71.16 J

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## Notes:

\* A value will not appear in the MRL column for TICs.

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	11/9/2016	11/22/2016	9623	D	Toluene	108-88-3	PPTV	100	118.28
CEMRC	11/9/2016	11/22/2016	9623	D	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	11/9/2016	11/22/2016	9622	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	11/9/2016	11/22/2016	9622	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	11/9/2016	11/22/2016	9622	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	11/9/2016	11/22/2016	9622	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	11/9/2016	11/22/2016	9622	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	U
CEMRC	11/9/2016	11/22/2016	9622	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	11/9/2016	11/22/2016	9622	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	11/9/2016	11/22/2016	9622	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	11/9/2016	11/22/2016	9622	C	Toluene	108-88-3	PPBV	0.4	0.1 J
CEMRC	11/9/2016	11/22/2016	9622	C	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	11/9/2016	11/22/2016	9622	C	Butane	106-97-8	PPBV		3.66 NJ
CEMRC	11/9/2016	11/22/2016	9622	C	Butane, 2-methyl-	78-78-4	PPBV		1.9 NJ
CEMRC	11/9/2016	11/22/2016	9622	C	Dichlorodifluoromethane	75-71-8	PPBV		2.78 NJ
CEMRC	11/9/2016	11/22/2016	9622	C	Isobutane	75-28-5	PPBV		1 NJ
CEMRC	11/9/2016	11/22/2016	9622	C	Pentane	109-66-0	PPBV		1.2 NJ
CEMRC	11/9/2016	11/22/2016	9622	C	Propane	74-98-6	PPBV		4.22 NJ
CEMRC	11/9/2016	11/22/2016	9622	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	11/9/2016	11/22/2016	9622	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	11/9/2016	11/22/2016	9622	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	11/9/2016	11/22/2016	9622	C	1,2-Dichloroethane	107-06-2	PPTV	100	14.1 J
CEMRC	11/9/2016	11/22/2016	9622	C	Carbon Tetrachloride	56-23-5	PPTV	100	90.52 J
CEMRC	11/9/2016	11/22/2016	9622	C	Chlorobenzene	108-90-7	PPTV	100	U

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## Notes:

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## Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	11/9/2016	11/22/2016	9622	C	Chloroform	67-66-3	PPTV	100	14.84 J
CEMRC	11/9/2016	11/22/2016	9622	C	Methylene Chloride	75-09-2	PPTV	100	67.86 J
CEMRC	11/9/2016	11/22/2016	9622	C	Toluene	108-88-3	PPTV	100	123.02
CEMRC	11/9/2016	11/22/2016	9622	C	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	11/10/2016	11/23/2016	9625	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	11/10/2016	11/23/2016	9625	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	11/10/2016	11/23/2016	9625	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	11/10/2016	11/23/2016	9625	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	11/10/2016	11/23/2016	9625	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	U
CEMRC	11/10/2016	11/23/2016	9625	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	11/10/2016	11/23/2016	9625	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	11/10/2016	11/23/2016	9625	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	11/10/2016	11/23/2016	9625	D	Toluene	108-88-3	PPBV	0.4	0.18 J
CEMRC	11/10/2016	11/23/2016	9625	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	11/10/2016	11/23/2016	9625	D	Butane	106-97-8	PPBV		4.76 NJ
CEMRC	11/10/2016	11/23/2016	9625	D	Butane, 2-methyl-	78-78-4	PPBV		2.4 NJ
CEMRC	11/10/2016	11/23/2016	9625	D	Dichlorodifluoromethane	75-71-8	PPBV		1.8 NJ
CEMRC	11/10/2016	11/23/2016	9625	D	Isobutane	75-28-5	PPBV		1.7 NJ
CEMRC	11/10/2016	11/23/2016	9625	D	Pentane	109-66-0	PPBV		2.12 NJ
CEMRC	11/10/2016	11/23/2016	9625	D	Pentane, 2-methyl-	107-83-5	PPBV		0.46 NJ
CEMRC	11/10/2016	11/23/2016	9625	D	Propane	74-98-6	PPBV		6.22 NJ
CEMRC	11/10/2016	11/23/2016	9625	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	11/10/2016	11/23/2016	9625	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U

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### Notes:

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	11/10/2016	11/23/2016	9625	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	11/10/2016	11/23/2016	9625	D	1,2-Dichloroethane	107-06-2	PPTV	100	16.48 J
CEMRC	11/10/2016	11/23/2016	9625	D	Carbon Tetrachloride	56-23-5	PPTV	100	89.06 J
CEMRC	11/10/2016	11/23/2016	9625	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	11/10/2016	11/23/2016	9625	D	Chloroform	67-66-3	PPTV	100	15.88 J
CEMRC	11/10/2016	11/23/2016	9625	D	Methylene Chloride	75-09-2	PPTV	100	69.28 J
CEMRC	11/10/2016	11/23/2016	9625	D	Toluene	108-88-3	PPTV	100	202.98
CEMRC	11/10/2016	11/23/2016	9625	D	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	11/10/2016	11/22/2016	9624	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	11/10/2016	11/22/2016	9624	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	11/10/2016	11/22/2016	9624	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	11/10/2016	11/22/2016	9624	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	11/10/2016	11/22/2016	9624	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.1 J
CEMRC	11/10/2016	11/22/2016	9624	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	11/10/2016	11/22/2016	9624	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	11/10/2016	11/22/2016	9624	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	11/10/2016	11/22/2016	9624	C	Toluene	108-88-3	PPBV	0.4	0.16 J
CEMRC	11/10/2016	11/22/2016	9624	C	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	11/10/2016	11/22/2016	9624	C	Butane	106-97-8	PPBV		5.34 NJ
CEMRC	11/10/2016	11/22/2016	9624	C	Butane, 2-methyl-	78-78-4	PPBV		2.46 NJ
CEMRC	11/10/2016	11/22/2016	9624	C	Isobutane	75-28-5	PPBV		1.52 NJ
CEMRC	11/10/2016	11/22/2016	9624	C	Pentane	109-66-0	PPBV		1.84 NJ
CEMRC	11/10/2016	11/22/2016	9624	C	Propane	74-98-6	PPBV		5.58 NJ
CEMRC	11/10/2016	11/22/2016	9624	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	U

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## Notes:

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## Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	11/10/2016	11/22/2016	9624	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	11/10/2016	11/22/2016	9624	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	11/10/2016	11/22/2016	9624	C	1,2-Dichloroethane	107-06-2	PPTV	100	16.24 J
CEMRC	11/10/2016	11/22/2016	9624	C	Carbon Tetrachloride	56-23-5	PPTV	100	110.4
CEMRC	11/10/2016	11/22/2016	9624	C	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	11/10/2016	11/22/2016	9624	C	Chloroform	67-66-3	PPTV	100	16.66 J
CEMRC	11/10/2016	11/22/2016	9624	C	Methylene Chloride	75-09-2	PPTV	100	67.44 J
CEMRC	11/10/2016	11/22/2016	9624	C	Toluene	108-88-3	PPTV	100	174.42
CEMRC	11/10/2016	11/22/2016	9624	C	Trichloroethylene	79-01-6	PPTV	100	9.2 J
CEMRC	11/15/2016	12/6/2016	9627	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	11/15/2016	12/6/2016	9627	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	11/15/2016	12/6/2016	9627	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	11/15/2016	12/6/2016	9627	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	11/15/2016	12/6/2016	9627	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	U
CEMRC	11/15/2016	12/6/2016	9627	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	11/15/2016	12/6/2016	9627	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	11/15/2016	12/6/2016	9627	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	11/15/2016	12/6/2016	9627	D	Toluene	108-88-3	PPBV	0.4	0.22 J
CEMRC	11/15/2016	12/6/2016	9627	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	11/15/2016	12/6/2016	9627	D	Butane	106-97-8	PPBV		6.62 NJ
CEMRC	11/15/2016	12/6/2016	9627	D	Butane, 2-methyl-	78-78-4	PPBV		3.56 NJ
CEMRC	11/15/2016	12/6/2016	9627	D	Cyclopentane, methyl-	96-37-7	PPBV		0.54 NJ
CEMRC	11/15/2016	12/6/2016	9627	D	Dichlorodifluoromethane	75-71-8	PPBV		1.86 NJ

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### Notes:

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## Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	11/15/2016	12/6/2016	9627	D	Isobutane	75-28-5	PPBV		1.64 NJ
CEMRC	11/15/2016	12/6/2016	9627	D	Pentane	109-66-0	PPBV		2.76 NJ
CEMRC	11/15/2016	12/6/2016	9627	D	Pentane, 2-methyl-	107-83-5	PPBV		0.72 NJ
CEMRC	11/15/2016	12/6/2016	9627	D	Propane	74-98-6	PPBV		6.88 NJ
CEMRC	11/15/2016	12/6/2016	9627	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	11/15/2016	12/6/2016	9627	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	11/15/2016	12/6/2016	9627	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	11/15/2016	12/6/2016	9627	D	1,2-Dichloroethane	107-06-2	PPTV	100	17.18 J
CEMRC	11/15/2016	12/6/2016	9627	D	Carbon Tetrachloride	56-23-5	PPTV	100	88.06 J
CEMRC	11/15/2016	12/6/2016	9627	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	11/15/2016	12/6/2016	9627	D	Chloroform	67-66-3	PPTV	100	12.62 J
CEMRC	11/15/2016	12/6/2016	9627	D	Methylene Chloride	75-09-2	PPTV	100	60.16 J
CEMRC	11/15/2016	12/6/2016	9627	D	Toluene	108-88-3	PPTV	100	249.54
CEMRC	11/15/2016	12/6/2016	9627	D	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	11/15/2016	12/6/2016	9626	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	11/15/2016	12/6/2016	9626	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	11/15/2016	12/6/2016	9626	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	11/15/2016	12/6/2016	9626	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	11/15/2016	12/6/2016	9626	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.12 J
CEMRC	11/15/2016	12/6/2016	9626	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	11/15/2016	12/6/2016	9626	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	11/15/2016	12/6/2016	9626	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	11/15/2016	12/6/2016	9626	C	Toluene	108-88-3	PPBV	0.4	0.18 J
CEMRC	11/15/2016	12/6/2016	9626	C	Trichloroethylene	79-01-6	PPBV	0.4	U

### Qualifiers:

J = Estimated value; below laboratory's method reporting limit (MRL), but above method detection limit (MDL).

U = Compound not detected above the MDL.

NJ = Presumptive evidence of the presence of the compound at an estimated quantity; only used for tentatively identified compounds (TICs).

### Notes:

\* A value will not appear in the MRL column for TICs.

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## Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	11/15/2016	12/6/2016	9626	C	Butane	106-97-8	PPBV		7.26 NJ
CEMRC	11/15/2016	12/6/2016	9626	C	Butane, 2-methyl-	78-78-4	PPBV		3.88 NJ
CEMRC	11/15/2016	12/6/2016	9626	C	Cyclopentane, methyl-	96-37-7	PPBV		0.56 NJ
CEMRC	11/15/2016	12/6/2016	9626	C	Dichlorodifluoromethane	75-71-8	PPBV		1.66 NJ
CEMRC	11/15/2016	12/6/2016	9626	C	Isobutane	75-28-5	PPBV		1.8 NJ
CEMRC	11/15/2016	12/6/2016	9626	C	Pentane	109-66-0	PPBV		3.08 NJ
CEMRC	11/15/2016	12/6/2016	9626	C	Pentane, 2-methyl-	107-83-5	PPBV		0.78 NJ
CEMRC	11/15/2016	12/6/2016	9626	C	Propane	74-98-6	PPBV		7.16 NJ
CEMRC	11/15/2016	12/6/2016	9626	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	13.44 J
CEMRC	11/15/2016	12/6/2016	9626	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	13.1 J
CEMRC	11/15/2016	12/6/2016	9626	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	11/15/2016	12/6/2016	9626	C	1,2-Dichloroethane	107-06-2	PPTV	100	18.14 J
CEMRC	11/15/2016	12/6/2016	9626	C	Carbon Tetrachloride	56-23-5	PPTV	100	116.48
CEMRC	11/15/2016	12/6/2016	9626	C	Chlorobenzene	108-90-7	PPTV	100	9.88 J
CEMRC	11/15/2016	12/6/2016	9626	C	Chloroform	67-66-3	PPTV	100	15.1 J
CEMRC	11/15/2016	12/6/2016	9626	C	Methylene Chloride	75-09-2	PPTV	100	60.62 J
CEMRC	11/15/2016	12/6/2016	9626	C	Toluene	108-88-3	PPTV	100	209.52
CEMRC	11/15/2016	12/6/2016	9626	C	Trichloroethylene	79-01-6	PPTV	100	19.66 J
CEMRC	11/16/2016	12/6/2016	9629	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	11/16/2016	12/6/2016	9629	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	11/16/2016	12/6/2016	9629	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	11/16/2016	12/6/2016	9629	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	11/16/2016	12/6/2016	9629	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	U

### Qualifiers:

J = Estimated value; below laboratory's method reporting limit (MRL), but above method detection limit (MDL).

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### Notes:

\* A value will not appear in the MRL column for TICs.

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	11/16/2016	12/6/2016	9629	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	11/16/2016	12/6/2016	9629	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	11/16/2016	12/6/2016	9629	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	11/16/2016	12/6/2016	9629	D	Toluene	108-88-3	PPBV	0.4	0.46
CEMRC	11/16/2016	12/6/2016	9629	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	11/16/2016	12/6/2016	9629	D	Butane	106-97-8	PPBV		9.78 NJ
CEMRC	11/16/2016	12/6/2016	9629	D	Butane, 2-methyl-	78-78-4	PPBV		5.02 NJ
CEMRC	11/16/2016	12/6/2016	9629	D	Cyclohexane, methyl-	108-87-2	PPBV		0.86 NJ
CEMRC	11/16/2016	12/6/2016	9629	D	Cyclopentane, methyl-	96-37-7	PPBV		0.82 NJ
CEMRC	11/16/2016	12/6/2016	9629	D	Dichlorodifluoromethane	75-71-8	PPBV		0.96 NJ
CEMRC	11/16/2016	12/6/2016	9629	D	Heptane	142-82-5	PPBV		0.46 NJ
CEMRC	11/16/2016	12/6/2016	9629	D	Isobutane	75-28-5	PPBV		2.32 NJ
CEMRC	11/16/2016	12/6/2016	9629	D	Pentane	109-66-0	PPBV		4.7 NJ
CEMRC	11/16/2016	12/6/2016	9629	D	Pentane, 2-methyl-	107-83-5	PPBV		1.32 NJ
CEMRC	11/16/2016	12/6/2016	9629	D	Propane	74-98-6	PPBV		8.66 NJ
CEMRC	11/16/2016	12/6/2016	9629	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	11/16/2016	12/6/2016	9629	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	11/16/2016	12/6/2016	9629	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	11/16/2016	12/6/2016	9629	D	1,2-Dichloroethane	107-06-2	PPTV	100	22.96 J
CEMRC	11/16/2016	12/6/2016	9629	D	Carbon Tetrachloride	56-23-5	PPTV	100	81.04 J
CEMRC	11/16/2016	12/6/2016	9629	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	11/16/2016	12/6/2016	9629	D	Chloroform	67-66-3	PPTV	100	13.2 J
CEMRC	11/16/2016	12/6/2016	9629	D	Methylene Chloride	75-09-2	PPTV	100	65.42 J
CEMRC	11/16/2016	12/6/2016	9629	D	Toluene	108-88-3	PPTV	100	511.96

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## Notes:

\* A value will not appear in the MRL column for TICs.

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	11/16/2016	12/6/2016	9629	D	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	11/16/2016	12/6/2016	9628	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	11/16/2016	12/6/2016	9628	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	11/16/2016	12/6/2016	9628	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	11/16/2016	12/6/2016	9628	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	11/16/2016	12/6/2016	9628	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.12 J
CEMRC	11/16/2016	12/6/2016	9628	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	11/16/2016	12/6/2016	9628	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	11/16/2016	12/6/2016	9628	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	11/16/2016	12/6/2016	9628	C	Toluene	108-88-3	PPBV	0.4	0.44
CEMRC	11/16/2016	12/6/2016	9628	C	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	11/16/2016	12/6/2016	9628	C	Butane	106-97-8	PPBV		9.44 NJ
CEMRC	11/16/2016	12/6/2016	9628	C	Butane, 2-methyl-	78-78-4	PPBV		5 NJ
CEMRC	11/16/2016	12/6/2016	9628	C	Cyclohexane, methyl-	108-87-2	PPBV		0.76 NJ
CEMRC	11/16/2016	12/6/2016	9628	C	Cyclopentane, methyl-	96-37-7	PPBV		0.78 NJ
CEMRC	11/16/2016	12/6/2016	9628	C	Dichlorodifluoromethane	75-71-8	PPBV		1.24 NJ
CEMRC	11/16/2016	12/6/2016	9628	C	Isobutane	75-28-5	PPBV		2.28 NJ
CEMRC	11/16/2016	12/6/2016	9628	C	Pentane	109-66-0	PPBV		4.46 NJ
CEMRC	11/16/2016	12/6/2016	9628	C	Pentane, 2-methyl-	107-83-5	PPBV		1.24 NJ
CEMRC	11/16/2016	12/6/2016	9628	C	Propane	74-98-6	PPBV		8.56 NJ
CEMRC	11/16/2016	12/6/2016	9628	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	20.14 J
CEMRC	11/16/2016	12/6/2016	9628	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	11/16/2016	12/6/2016	9628	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	11/16/2016	12/6/2016	9628	C	1,2-Dichloroethane	107-06-2	PPTV	100	23.3 J

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## Notes:

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## Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	11/16/2016	12/6/2016	9628	C	Carbon Tetrachloride	56-23-5	PPTV	100	128.34
CEMRC	11/16/2016	12/6/2016	9628	C	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	11/16/2016	12/6/2016	9628	C	Chloroform	67-66-3	PPTV	100	20.98 J
CEMRC	11/16/2016	12/6/2016	9628	C	Methylene Chloride	75-09-2	PPTV	100	66.72 J
CEMRC	11/16/2016	12/6/2016	9628	C	Toluene	108-88-3	PPTV	100	465.72
CEMRC	11/16/2016	12/6/2016	9628	C	Trichloroethylene	79-01-6	PPTV	100	40.98 J
CEMRC	11/22/2016	12/7/2016	9632	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	11/22/2016	12/7/2016	9632	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	11/22/2016	12/7/2016	9632	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	11/22/2016	12/7/2016	9632	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	11/22/2016	12/7/2016	9632	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	U
CEMRC	11/22/2016	12/7/2016	9632	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	11/22/2016	12/7/2016	9632	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	11/22/2016	12/7/2016	9632	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	11/22/2016	12/7/2016	9632	D	Toluene	108-88-3	PPBV	0.4	0.36 J
CEMRC	11/22/2016	12/7/2016	9632	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	11/22/2016	12/7/2016	9632	D	Butane	106-97-8	PPBV		10.02 NJ
CEMRC	11/22/2016	12/7/2016	9632	D	Butane, 2-methyl-	78-78-4	PPBV		5.06 NJ
CEMRC	11/22/2016	12/7/2016	9632	D	Cyclohexane, methyl-	108-87-2	PPBV		0.86 NJ
CEMRC	11/22/2016	12/7/2016	9632	D	Cyclopentane, methyl-	96-37-7	PPBV		0.66 NJ
CEMRC	11/22/2016	12/7/2016	9632	D	Dichlorodifluoromethane	75-71-8	PPBV		1.4 NJ
CEMRC	11/22/2016	12/7/2016	9632	D	Heptane	142-82-5	PPBV		0.46 NJ
CEMRC	11/22/2016	12/7/2016	9632	D	Isobutane	75-28-5	PPBV		2.6 NJ

### Qualifiers:

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### Notes:

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	11/22/2016	12/7/2016	9632	D	Pentane	109-66-0	PPBV		4.46 NJ
CEMRC	11/22/2016	12/7/2016	9632	D	Pentane, 2-methyl-	107-83-5	PPBV		1.22 NJ
CEMRC	11/22/2016	12/7/2016	9632	D	Propane	74-98-6	PPBV		9.26 NJ
CEMRC	11/22/2016	12/7/2016	9632	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	11/22/2016	12/7/2016	9632	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	11/22/2016	12/7/2016	9632	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	11/22/2016	12/7/2016	9632	D	1,2-Dichloroethane	107-06-2	PPTV	100	21.42 J
CEMRC	11/22/2016	12/7/2016	9632	D	Carbon Tetrachloride	56-23-5	PPTV	100	87.06 J
CEMRC	11/22/2016	12/7/2016	9632	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	11/22/2016	12/7/2016	9632	D	Chloroform	67-66-3	PPTV	100	14.98 J
CEMRC	11/22/2016	12/7/2016	9632	D	Methylene Chloride	75-09-2	PPTV	100	65.32 J
CEMRC	11/22/2016	12/7/2016	9632	D	Toluene	108-88-3	PPTV	100	385.58
CEMRC	11/22/2016	12/7/2016	9632	D	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	11/22/2016	12/7/2016	9631	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	11/22/2016	12/7/2016	9631	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	11/22/2016	12/7/2016	9631	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	11/22/2016	12/7/2016	9631	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	11/22/2016	12/7/2016	9631	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.1 J
CEMRC	11/22/2016	12/7/2016	9631	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	11/22/2016	12/7/2016	9631	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	11/22/2016	12/7/2016	9631	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	11/22/2016	12/7/2016	9631	C	Toluene	108-88-3	PPBV	0.4	0.34 J
CEMRC	11/22/2016	12/7/2016	9631	C	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	11/22/2016	12/7/2016	9631	C	Butane	106-97-8	PPBV		8.26 NJ

## Qualifiers:

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## Notes:

\* A value will not appear in the MRL column for TICs.

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## Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	11/22/2016	12/7/2016	9631	C	Butane, 2-methyl-	78-78-4	PPBV		4.92 NJ
CEMRC	11/22/2016	12/7/2016	9631	C	Cyclohexane, methyl-	108-87-2	PPBV		0.86 NJ
CEMRC	11/22/2016	12/7/2016	9631	C	Cyclopentane, methyl-	96-37-7	PPBV		0.78 NJ
CEMRC	11/22/2016	12/7/2016	9631	C	Dichlorodifluoromethane	75-71-8	PPBV		1.28 NJ
CEMRC	11/22/2016	12/7/2016	9631	C	Heptane	142-82-5	PPBV		0.46 NJ
CEMRC	11/22/2016	12/7/2016	9631	C	Isobutane	75-28-5	PPBV		2.42 NJ
CEMRC	11/22/2016	12/7/2016	9631	C	Pentane	109-66-0	PPBV		4.48 NJ
CEMRC	11/22/2016	12/7/2016	9631	C	Pentane, 2-methyl-	107-83-5	PPBV		1.26 NJ
CEMRC	11/22/2016	12/7/2016	9631	C	Propane	74-98-6	PPBV		9.1 NJ
CEMRC	11/22/2016	12/7/2016	9631	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	11/22/2016	12/7/2016	9631	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	17.1 J
CEMRC	11/22/2016	12/7/2016	9631	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	11/22/2016	12/7/2016	9631	C	1,2-Dichloroethane	107-06-2	PPTV	100	22.88 J
CEMRC	11/22/2016	12/7/2016	9631	C	Carbon Tetrachloride	56-23-5	PPTV	100	96.88 J
CEMRC	11/22/2016	12/7/2016	9631	C	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	11/22/2016	12/7/2016	9631	C	Chloroform	67-66-3	PPTV	100	17.78 J
CEMRC	11/22/2016	12/7/2016	9631	C	Methylene Chloride	75-09-2	PPTV	100	68.1 J
CEMRC	11/22/2016	12/7/2016	9631	C	Toluene	108-88-3	PPTV	100	391.16
CEMRC	11/22/2016	12/7/2016	9631	C	Trichloroethylene	79-01-6	PPTV	100	18.7 J
CEMRC	11/23/2016	12/7/2016	9634	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	11/23/2016	12/7/2016	9634	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	11/23/2016	12/7/2016	9634	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	11/23/2016	12/7/2016	9634	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U

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### Notes:

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	11/23/2016	12/7/2016	9634	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.1 J
CEMRC	11/23/2016	12/7/2016	9634	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	11/23/2016	12/7/2016	9634	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	11/23/2016	12/7/2016	9634	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	11/23/2016	12/7/2016	9634	D	Toluene	108-88-3	PPBV	0.4	0.1 J
CEMRC	11/23/2016	12/7/2016	9634	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	11/23/2016	12/7/2016	9634	D	Butane	106-97-8	PPBV		2.68 NJ
CEMRC	11/23/2016	12/7/2016	9634	D	Isobutane	75-28-5	PPBV		1 NJ
CEMRC	11/23/2016	12/7/2016	9634	D	Pentane	109-66-0	PPBV		1.1 NJ
CEMRC	11/23/2016	12/7/2016	9634	D	Propane	74-98-6	PPBV		3.46 NJ
CEMRC	11/23/2016	12/7/2016	9634	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	11/23/2016	12/7/2016	9634	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	11/23/2016	12/7/2016	9634	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	11/23/2016	12/7/2016	9634	D	1,2-Dichloroethane	107-06-2	PPTV	100	13.42 J
CEMRC	11/23/2016	12/7/2016	9634	D	Carbon Tetrachloride	56-23-5	PPTV	100	99.22 J
CEMRC	11/23/2016	12/7/2016	9634	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	11/23/2016	12/7/2016	9634	D	Chloroform	67-66-3	PPTV	100	15.34 J
CEMRC	11/23/2016	12/7/2016	9634	D	Methylene Chloride	75-09-2	PPTV	100	65.06 J
CEMRC	11/23/2016	12/7/2016	9634	D	Toluene	108-88-3	PPTV	100	114.68
CEMRC	11/23/2016	12/7/2016	9634	D	Trichloroethylene	79-01-6	PPTV	100	6.7 J
CEMRC	11/23/2016	12/7/2016	9633	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	11/23/2016	12/7/2016	9633	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	11/23/2016	12/7/2016	9633	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	11/23/2016	12/7/2016	9633	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U

## Qualifiers:

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NJ = Presumptive evidence of the presence of the compound at an estimated quantity; only used for tentatively identified compounds (TICs).

## Notes:

\* A value will not appear in the MRL column for TICs.

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	11/23/2016	12/7/2016	9633	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.1 J
CEMRC	11/23/2016	12/7/2016	9633	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	11/23/2016	12/7/2016	9633	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	11/23/2016	12/7/2016	9633	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	11/23/2016	12/7/2016	9633	C	Toluene	108-88-3	PPBV	0.4	0.1 J
CEMRC	11/23/2016	12/7/2016	9633	C	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	11/23/2016	12/7/2016	9633	C	Butane	106-97-8	PPBV		3.02 NJ
CEMRC	11/23/2016	12/7/2016	9633	C	Isobutane	75-28-5	PPBV		0.92 NJ
CEMRC	11/23/2016	12/7/2016	9633	C	Pentane	109-66-0	PPBV		0.9 NJ
CEMRC	11/23/2016	12/7/2016	9633	C	Propane	74-98-6	PPBV		3.98 NJ
CEMRC	11/23/2016	12/7/2016	9633	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	11/23/2016	12/7/2016	9633	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	11/23/2016	12/7/2016	9633	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	11/23/2016	12/7/2016	9633	C	1,2-Dichloroethane	107-06-2	PPTV	100	13.38 J
CEMRC	11/23/2016	12/7/2016	9633	C	Carbon Tetrachloride	56-23-5	PPTV	100	93.3 J
CEMRC	11/23/2016	12/7/2016	9633	C	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	11/23/2016	12/7/2016	9633	C	Chloroform	67-66-3	PPTV	100	14.9 J
CEMRC	11/23/2016	12/7/2016	9633	C	Methylene Chloride	75-09-2	PPTV	100	62.7 J
CEMRC	11/23/2016	12/7/2016	9633	C	Toluene	108-88-3	PPTV	100	117.2
CEMRC	11/23/2016	12/7/2016	9633	C	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	11/29/2016	12/9/2016	9637	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	11/29/2016	12/9/2016	9637	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	11/29/2016	12/9/2016	9637	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U

## Qualifiers:

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## Notes:

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	11/29/2016	12/9/2016	9637	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	11/29/2016	12/9/2016	9637	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	U
CEMRC	11/29/2016	12/9/2016	9637	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	11/29/2016	12/9/2016	9637	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	11/29/2016	12/9/2016	9637	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	11/29/2016	12/9/2016	9637	D	Toluene	108-88-3	PPBV	0.4	U
CEMRC	11/29/2016	12/9/2016	9637	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	11/29/2016	12/9/2016	9637	D	Acetone	67-64-1	PPBV		0.72 NJ
CEMRC	11/29/2016	12/9/2016	9637	D	Butane	106-97-8	PPBV		1.2 NJ
CEMRC	11/29/2016	12/9/2016	9637	D	Dichlorodifluoromethane	75-71-8	PPBV		1.1 NJ
CEMRC	11/29/2016	12/9/2016	9637	D	Isobutane	75-28-5	PPBV		0.48 NJ
CEMRC	11/29/2016	12/9/2016	9637	D	Propane	74-98-6	PPBV		1.78 NJ
CEMRC	11/29/2016	12/9/2016	9637	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	11/29/2016	12/9/2016	9637	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	11/29/2016	12/9/2016	9637	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	11/29/2016	12/9/2016	9637	D	1,2-Dichloroethane	107-06-2	PPTV	100	17.52 J
CEMRC	11/29/2016	12/9/2016	9637	D	Carbon Tetrachloride	56-23-5	PPTV	100	89.76 J
CEMRC	11/29/2016	12/9/2016	9637	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	11/29/2016	12/9/2016	9637	D	Chloroform	67-66-3	PPTV	100	19.12 J
CEMRC	11/29/2016	12/9/2016	9637	D	Methylene Chloride	75-09-2	PPTV	100	72.86 J
CEMRC	11/29/2016	12/9/2016	9637	D	Toluene	108-88-3	PPTV	100	44.44 J
CEMRC	11/29/2016	12/9/2016	9637	D	Trichloroethylene	79-01-6	PPTV	100	U
CEMRC	11/29/2016	12/9/2016	9635	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	11/29/2016	12/9/2016	9635	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U

## Qualifiers:

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## Notes:

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## Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	11/29/2016	12/9/2016	9635	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	11/29/2016	12/9/2016	9635	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	11/29/2016	12/9/2016	9635	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	U
CEMRC	11/29/2016	12/9/2016	9635	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	11/29/2016	12/9/2016	9635	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	11/29/2016	12/9/2016	9635	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	11/29/2016	12/9/2016	9635	C	Toluene	108-88-3	PPBV	0.4	U
CEMRC	11/29/2016	12/9/2016	9635	C	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	11/29/2016	12/9/2016	9635	C	Butane	106-97-8	PPBV		1.96 NJ
CEMRC	11/29/2016	12/9/2016	9635	C	Dichlorodifluoromethane	75-71-8	PPBV		1.82 NJ
CEMRC	11/29/2016	12/9/2016	9635	C	Isobutane	75-28-5	PPBV		0.6 NJ
CEMRC	11/29/2016	12/9/2016	9635	C	Pentane	109-66-0	PPBV		0.58 NJ
CEMRC	11/29/2016	12/9/2016	9635	C	Propane	74-98-6	PPBV		2.46 NJ
CEMRC	11/29/2016	12/9/2016	9635	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	11/29/2016	12/9/2016	9635	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	11.16 J
CEMRC	11/29/2016	12/9/2016	9635	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	11/29/2016	12/9/2016	9635	C	1,2-Dichloroethane	107-06-2	PPTV	100	17.96 J
CEMRC	11/29/2016	12/9/2016	9635	C	Carbon Tetrachloride	56-23-5	PPTV	100	92 J
CEMRC	11/29/2016	12/9/2016	9635	C	Chlorobenzene	108-90-7	PPTV	100	7.28 J
CEMRC	11/29/2016	12/9/2016	9635	C	Chloroform	67-66-3	PPTV	100	19.54 J
CEMRC	11/29/2016	12/9/2016	9635	C	Methylene Chloride	75-09-2	PPTV	100	81.4 J
CEMRC	11/29/2016	12/9/2016	9635	C	Toluene	108-88-3	PPTV	100	53.06 J
CEMRC	11/29/2016	12/9/2016	9635	C	Trichloroethylene	79-01-6	PPTV	100	U

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### Notes:

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## Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	11/30/2016	12/10/2016	9639	D	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	11/30/2016	12/10/2016	9639	D	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	11/30/2016	12/10/2016	9639	D	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	11/30/2016	12/10/2016	9639	D	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	11/30/2016	12/10/2016	9639	D	Carbon Tetrachloride	56-23-5	PPBV	0.4	0.1 J
CEMRC	11/30/2016	12/10/2016	9639	D	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	11/30/2016	12/10/2016	9639	D	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	11/30/2016	12/10/2016	9639	D	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	11/30/2016	12/10/2016	9639	D	Toluene	108-88-3	PPBV	0.4	0.08 J
CEMRC	11/30/2016	12/10/2016	9639	D	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	11/30/2016	12/10/2016	9639	D	Butane	106-97-8	PPBV		2.66 NJ
CEMRC	11/30/2016	12/10/2016	9639	D	Isobutane	75-28-5	PPBV		0.92 NJ
CEMRC	11/30/2016	12/10/2016	9639	D	Pentane	109-66-0	PPBV		0.8 NJ
CEMRC	11/30/2016	12/10/2016	9639	D	Propane	74-98-6	PPBV		3.56 NJ
CEMRC	11/30/2016	12/10/2016	9639	D	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	11/30/2016	12/10/2016	9639	D	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	11/30/2016	12/10/2016	9639	D	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	11/30/2016	12/10/2016	9639	D	1,2-Dichloroethane	107-06-2	PPTV	100	17.1 J
CEMRC	11/30/2016	12/10/2016	9639	D	Carbon Tetrachloride	56-23-5	PPTV	100	99.66 J
CEMRC	11/30/2016	12/10/2016	9639	D	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	11/30/2016	12/10/2016	9639	D	Chloroform	67-66-3	PPTV	100	18.84 J
CEMRC	11/30/2016	12/10/2016	9639	D	Methylene Chloride	75-09-2	PPTV	100	75.22 J
CEMRC	11/30/2016	12/10/2016	9639	D	Toluene	108-88-3	PPTV	100	100.34
CEMRC	11/30/2016	12/10/2016	9639	D	Trichloroethylene	79-01-6	PPTV	100	12.88 J

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### Notes:

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# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	11/30/2016	12/9/2016	9638	C	1,1,1-Trichloroethane	71-55-6	PPBV	0.4	U
CEMRC	11/30/2016	12/9/2016	9638	C	1,1,2,2-Tetrachloroethane	79-34-5	PPBV	0.4	U
CEMRC	11/30/2016	12/9/2016	9638	C	1,1-Dichloroethylene	75-35-4	PPBV	0.4	U
CEMRC	11/30/2016	12/9/2016	9638	C	1,2-Dichloroethane	107-06-2	PPBV	0.4	U
CEMRC	11/30/2016	12/9/2016	9638	C	Carbon Tetrachloride	56-23-5	PPBV	0.4	U
CEMRC	11/30/2016	12/9/2016	9638	C	Chlorobenzene	108-90-7	PPBV	0.4	U
CEMRC	11/30/2016	12/9/2016	9638	C	Chloroform	67-66-3	PPBV	0.4	U
CEMRC	11/30/2016	12/9/2016	9638	C	Methylene Chloride	75-09-2	PPBV	0.4	U
CEMRC	11/30/2016	12/9/2016	9638	C	Toluene	108-88-3	PPBV	0.4	0.1 J
CEMRC	11/30/2016	12/9/2016	9638	C	Trichloroethylene	79-01-6	PPBV	0.4	U
CEMRC	11/30/2016	12/9/2016	9638	C	Butane	106-97-8	PPBV		3.04 NJ
CEMRC	11/30/2016	12/9/2016	9638	C	Butane, 2-methyl-	78-78-4	PPBV		1.42 NJ
CEMRC	11/30/2016	12/9/2016	9638	C	Isobutane	75-28-5	PPBV		1.1 NJ
CEMRC	11/30/2016	12/9/2016	9638	C	Pentane	109-66-0	PPBV		1.02 NJ
CEMRC	11/30/2016	12/9/2016	9638	C	Propane	74-98-6	PPBV		4.5 NJ
CEMRC	11/30/2016	12/9/2016	9638	C	1,1,1-Trichloroethane	71-55-6	PPTV	100	U
CEMRC	11/30/2016	12/9/2016	9638	C	1,1,2,2-Tetrachloroethane	79-34-5	PPTV	100	U
CEMRC	11/30/2016	12/9/2016	9638	C	1,1-Dichloroethylene	75-35-4	PPTV	100	U
CEMRC	11/30/2016	12/9/2016	9638	C	1,2-Dichloroethane	107-06-2	PPTV	100	17.18 J
CEMRC	11/30/2016	12/9/2016	9638	C	Carbon Tetrachloride	56-23-5	PPTV	100	83.16 J
CEMRC	11/30/2016	12/9/2016	9638	C	Chlorobenzene	108-90-7	PPTV	100	U
CEMRC	11/30/2016	12/9/2016	9638	C	Chloroform	67-66-3	PPTV	100	17.7 J
CEMRC	11/30/2016	12/9/2016	9638	C	Methylene Chloride	75-09-2	PPTV	100	74.18 J
CEMRC	11/30/2016	12/9/2016	9638	C	Toluene	108-88-3	PPTV	100	115.26

## Qualifiers:

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## Notes:

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## Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

Lab	Sample Date	Analysis Date	Sample ID	Location	Compound	CAS	UNITS	MRL*	Concentration
CEMRC	11/30/2016	12/9/2016	9638	C	Trichloroethylene	79-01-6	PPTV	100	U

### Qualifiers:

J = Estimated value; below laboratory's method reporting limit (MRL), but above method detection limit (MDL).

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### Notes:

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Attachment 3  
Surface & Underground Derived Waste Currently in Storage at the WIPP Facility (reserved)  
**[Last updated September 30, 2016]**

Attachment 4  
Status of RCRA Contingency Plan Required Activities (reserved)  
**[Last updated September 30, 2016]**

Attachment 5  
Corrective Actions (reserved)  
**[Last updated October 31, 2015]**

Attachment 6  
Recovery-Related Work Activities (reserved)  
**[Last updated September 30, 2016]**

Attachment 7  
WIPP Nitrate Salt Bearing Waste Container Isolation Plan  
Information Required by Administrative Order 3 (reserved)  
**[Last updated November 30, 2015]**