SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lt. Governor

NEW MEXICO
ENVIRONMENT DEPARTMENT

DOE Oversight Bureau

121 Tijeras Ave., NE Suite 1000
Albuquerque, NM
Phone (505) 383-2073 Fax (505) 222-9510
www.env.nm.gov

BUTCH TONGATE
Cabinet Secretary

J. C. BORREGO
Deputy Secretary

September 6, 2018

Steven Black
Point of Contact
Water Quality Program Manager
U.S. Department of Energy
Sandia Field Office
P.O Box 5400 MS 0184
Albuquerque, New Mexico 87185-5400

Subject: **Data Submittal for Soil Vapor Monitoring at Sandia National Laboratories/New Mexico Mixed Waste Landfill Conducted by the New Mexico Environment Department DOE Oversight Bureau for FFY 2018 Q-3**

Mr. Black:

This letter transmits the subject report as final. The report shows soil vapor data results from Mixed Waste Landfill collected by the New Mexico Environment Department DOE Oversight Bureau during a sampling event conducted on April 25, 2018.

The enclosed monitoring results were provided to the U.S Department of Energy in draft form on August 8, 2018 for 30-day review and comment. The final monitoring results are provided to DOE, the State of New Mexico and other federal agencies, the NMED website and interested members of the public. If you have any questions, or if you would like copies of the complete data set, please contact me by phone at (505) 383-2070, by email at chris.armijo1@state.nm.us, or by mail to the address in the above letterhead.

Sincerely,

Chris Armijo
Environmental Scientist
Sandia Oversight Section

Enclosure: (1) Soil Vapor Monitoring at Sandia National Laboratories/New Mexico Mixed Waste Landfill Conducted by the New Mexico Environment Department DOE Oversight Bureau for FFY 2018 Q-1
(2) Table 3-1 Volatile Organic Compounds Results MWL-SV01, 42.5
(3) Table 3-2 Volatile Organic Compounds Results MWL-SV02, 41.5
(4) Table 3-3 Volatile Organic Compound Results MWL-SV03, 50
(5) Table 3-4 Volatile Organic Compound Results MWL-SV03, 100
(6) Table 3-5 Volatile Organic Compound Results MWL-SV03, 200
(7) Table 3-6 Volatile Organic Compound Results MWL-SV03, 300
(8) Table 3-7 Volatile Organic Compound Results MWL-SV03, 400
(9) Table 3-8 Volatile Organic Compound Results MWL-SV04, 50
(10) Table 3-9 Volatile Organic Compound Results MWL-SV04, 100
(11) Table 3-10 Volatile Organic Compound Results MWL-SV04, 200
(12) Table 3-11 Volatile Organic Compound Results MWL-SV04, 300
(13) Table 3-12 Volatile Organic Compound Results MWL-SV04, 400
(14) Table 3-13 Volatile Organic Compound Results MWL-SV05, 50
(15) Table 3-14 Volatile Organic Compound Results MWL-SV05, 100
(16) Table 3-15 Volatile Organic Compound Results MWL-SV05, 200
(17) Table 3-16 Volatile Organic Compound Results MWL-SV05, 300
(18) Table 3-17 Volatile Organic Compound Results MWL-SV05, 400

Distribution: David Rast, DOE/SFO
Michael Skelly, SNL/NM Groundwater
Tim Jackson, SNL/NM Groundwater
Susan Luca Kamat, Bureau Chief, DOE OB

File: SGE42. Soil Vapor Monitoring. MWL. FFY 2018 Q-3

DOE Oversight Bureau, New Mexico Environment Department

Soil Vapor Monitoring at Sandia National Laboratories/New Mexico Mixed Waste Landfill

Conducted by the
New Mexico Environment Department DOE Oversight Bureau
for FFY 2018 Q-3

Prepared by Chris Armijo, Environmental Scientist
Sandia Oversight Section
121 Tijeras Ave. NE Suite 1000
Albuquerque, NM 87102
(505) 383-2070
chris.armijo1@state.nm.us

Final Report

9/6/2018

The purpose of this communication is to transmit soil vapor data collected by the New Mexico Environment Department DOE Oversight Bureau from Sandia National Laboratories/New Mexico Mixed Waste Landfill during the third quarter of Federal Fiscal Year (FFY) 2018.

Acknowledgment:
This material is based upon work supported by the Department of Energy Office of Environmental Management under Award Number *DE-EM0002420*.

Introduction

The New Mexico Environment Department (NMED) DOE Oversight Bureau (DOE-OB or Bureau) has compiled and assessed soil vapor data collected on April 25, 2018. The Bureau collected soil vapor samples from Solid Waste Management Unit (SWMU) 76, Mixed Waste Landfill (MWL) monitoring wells MWL-SV01, MWL-SV02, MWL-SV03, MWL-SV04 and MWL-SV05. Samples were collected using standard Sandia National Laboratories/New Mexico (SNL/NM or Sandia) sampling procedures and equipment in accordance with the MWL Long-Term Monitoring and Maintenance Plan (LTMMP), Appendix D (Soil Vapor Sampling and Analysis Plan). Soil vapor samples were collected in 6-liter SUMMA canisters and analyzed for volatile organic compounds (VOCs) in accordance with EPA method TO-15. The Bureau submitted samples for analysis to an independent analytical laboratory under contract with the NMED.

MWL monitoring wells MWL-SV01 and MWL-SV02 are single port wells at sampling depths approximately 42.5 feet below ground surface (ft. bgs) and 41.5 ft. bgs, respectively. Monitoring wells MWL-SV03, MWL-SV04 and MWL-SV05 are Flexible Liner Underground Technologies (FLUTe™) wells, constructed with multi-ports at sampling depths of approximately Port 1 (50ft bgs), Port 2 (100ft bgs), Port 3 (200ft bgs), Port 4 (300ft bgs), and Port 5 (400ft bgs). Bureau staff collected split samples at all depths from each multi-port well. Bureau staff also collected field blanks before sampling at each monitoring well and duplicate samples were collected from monitoring wells MWL-SV04 300ft and MWL-SV05 200 ft. The well locations are shown in Figure 1.

Split samples were collected in sequence, rather than using the manifold sampling system, designed to collect samples simultaneously. All samples collected from April 2018 were well below established trigger levels for VOCs in soil vapor, as specified in the SNL/NM LTMMP for the MWL.

Data Assessment

Data results are compared to VOC trigger levels listed in the SNL/NM LTMMP for the MWL. Trigger levels for tetrachloroethylene (PCE), trichloroethylene (TCE), and total VOCs in soil vapor at the MWL are 20 parts per million by volume (ppmv) for PCE and TCE, and 25 ppmv for total VOCs. These trigger levels are equivalent to 20,000 parts per billion by volume (ppbv) and 25,000 ppbv, respectively. Trigger levels apply only to samples collected from the deepest sampling port (i.e., 400 feet bgs) in each of the three FLUTe™ multi-port soil vapor monitoring wells (MWL-SV03, MWL-SV04, and MWL-SV05).

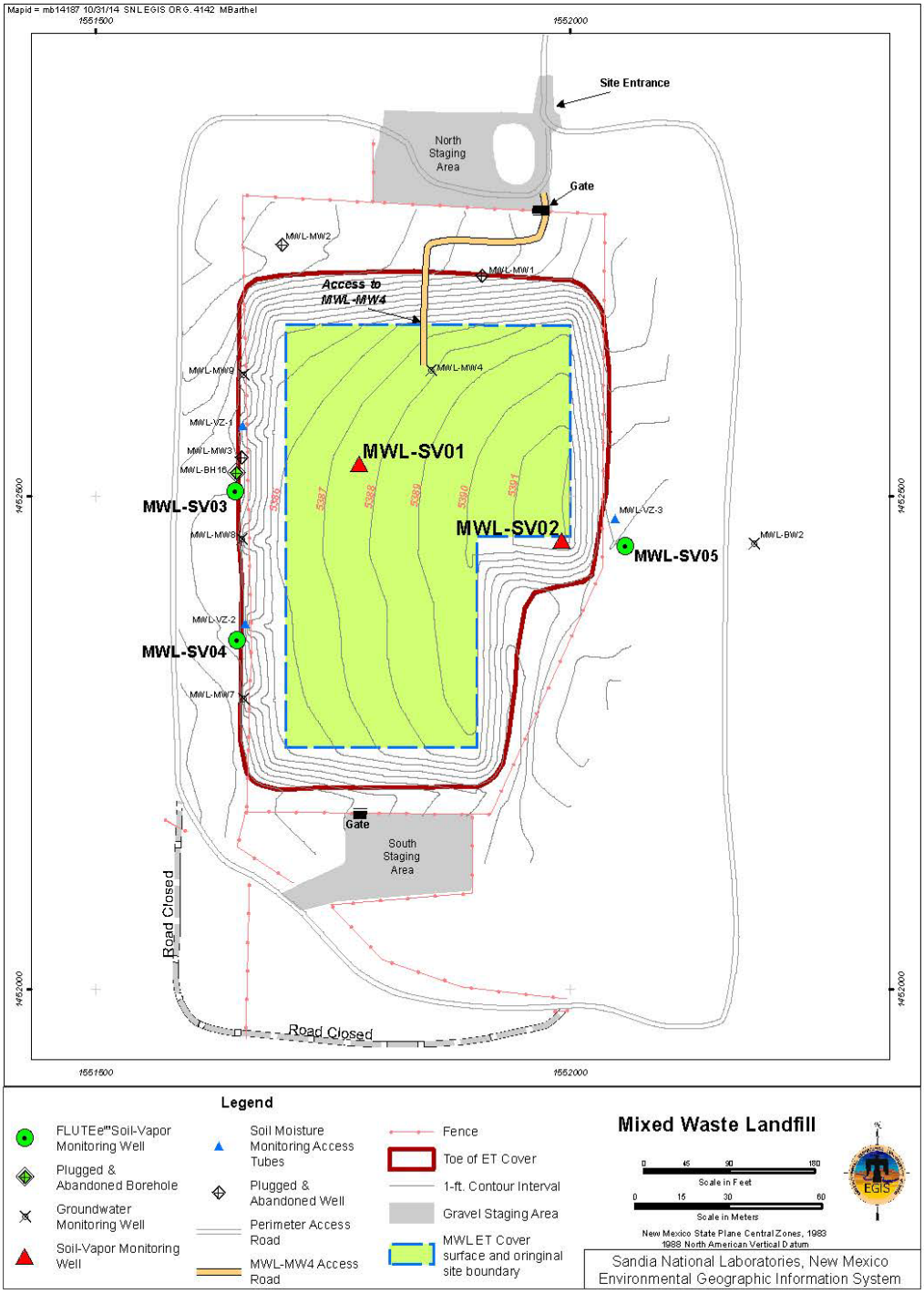

Figure 1
Mixed Waste Landfill Soil-Vapor Monitoring Well Locations

Results

Analytical results for VOCs are presented in Table 3-1 through Table 3-17. All samples were analyzed for VOCs in accordance with EPA method TO-15. A total of twenty-two (22) compounds were detected above the laboratory method detection limit (MDL) in samples collected during April 2018. Below is a summary of the detected compounds.

Acetone	Ethylbenzene
Benzene	Hexanone[2-]
Butanone[2-]	Methylene Chloride
Carbon Disulfide	Tetrachloroethene
Carbon Tetrachloride	Toluene
Chloroform	Trichloro-1,2,2-trifluoroethane[1,1,2-]
Dichlorobenzene[1,2-]	Trichloroethane[1,1,1-]
Dichlorodifluoromethane	Trichloroethene
Dichloroethane[1,1-]	Trichlorofluoromethane
Dichloroethene[1,1-]	Xylene[1,2-]
Dichloroethene[cis-1,2-]	Xylene[1,3-]+Xylene[1,4-]

PCE concentrations ranged from 41 ppbv at (MWL-SV05-50) to 260 ppbv at (MWL-SV01-42.5). TCE concentrations ranged from 34 ppbv at (MWL-SV04-400) to 200 ppbv at (MWL-SV05-200, duplicate). Total VOCs ranged from 165.66 ppbv at (MWL-SV04-300, duplicate) to 714.99 ppbv at (MWL-SV05-200, duplicate). PCE, TCE and total VOCs concentrations for each sample are summarized below in Table 1.

Table 1
Summary of PCE,TCE and Total VOCs Concentrations, April 2018

MWL Well ID & Depth	Port Number	Tetrachlorethene (PCE) (ppbv)	Trichloroethene (TCE) (ppbv)	Total VOCs (ppbv)
MWL-SV01 42.5	Single Port	260	61	605.3
MWL-SV02 41.5	Single Port	43	45	477.9
MWL-SV03-50	Port 1	100	80	481.34
MWL-SV03-100	Port 2	160	140	507.25
MWL-SV03-200	Port 3	170	170	577.08
MWL-SV03-300	Port 4	140	97	396.33
MWL-SV03-400	Port 5	240	130	473.04
MWL-SV04-50	Port 1	46	40	188.43
MWL-SV04-100	Port 2	82	89	339.42
MWL-SV04-200	Port 3	110	140	537.27
MWL-SV04-300	Port 4	60	36	210.52
MWL-SV04-300-Dup	Port 4	60	38	165.66
MWL-SV04-400	Port 5	68	34	187.40
MWL-SV05-50	Port 1	41	53	309.91
MWL-SV05-100	Port 2	69	110	501.03
MWL-SV05-200	Port 3	120	180	645.12
MWL-SV05-200-Dup	Port 3	130	200	714.99
MWL-SV05-300	Port 4	70	81	383.7
MWL-SV05-400	Port 5	63	44	207.03
Trigger Level[a]		20,000	20,000	25,000

Note: [a]= The trigger levels only apply to samples collected from 400ft ports (SNL/NM March 2012).

Conclusions

The DOE-OB collected soil vapor samples from monitoring wells MWL-SV01, MWL-SV02, MWL-SV03, MWL-SV04 and MWL-SV05. Samples were collected at all depths from each multi-port well. Duplicate samples were collected from MWL-SV04-300 and MWL-SV05-200. The soil vapor samples collected by DOE-OB during April 2018 were measured at levels well below the trigger levels listed in the SNL/NM LTMMP for the MWL.

PCE, TCE and total VOCs concentrations from 2014-2018 are presented in Tables 2-1, 2-2 and 2-3. The soil vapor concentrations measured by the analytical laboratories were well below the LTMMP trigger levels during all sampling events.

The DOE-OB will continue to independently monitor soil vapor at the MWL during future SNL/NM semi-annual sampling events and report data results to DOE.

Table 2-1 NMED DOE-OB PCE Concentrations
NMED DOE-OB Soil Vapor Data Results from the MWL 2014-2018

MWL Well ID & Sample Port Depth[b]	PCE Concentrations (ppbv)							
	Sep 2014[c]	Apr 2015[c]	Oct 2015[c]	Apr 2016[c]	Oct 2016[c]	May 2017[c]	Oct 2017[c]	Apr 2018[c]
MWL-SV01-42.5	460	NA	NA	NA	NA	360	320	260
MWL-SV02-41.5	69	NA	NA	NA	NA	54	53	43
MWL-SV03-300	200	270	190	240	260	240	250	140
MWL-SV03-400	350	330	310	340	350	260	310	240
MWL-SV04-300	61	86	85	98	130	83	61	60
MWL-SV04-400	67	93	88	90	110	79	100	68
MWL-SV05-300	70	76	46	91	150	89	86	70
MWL-SV05-400	71	74	71	94	94	69	74	63
Trigger Level[a]	20,000							

Notes:
[a] The trigger levels only apply to samples collected from 400ft ports (SNL/NM March 2012).
[b] Port depth is the last number in the Well ID, and is in feet below ground surface.
[c] If a duplicate sample was collected, then maximum concentration of the environmental-duplicate sample pair is shown.
NA = No data available. No samples were collected during this sampling event.

Table 2-2 NMED DOE-OB TCE Concentrations
NMED DOE-OB Soil Vapor Data Results from the MWL 2014-2018

MWL Well ID & Sample Port Depth[b]	TCE Concentrations (ppbv)							
	Sep 2014[c]	Apr 2015[c]	Oct 2015[c]	Apr 2016[c]	Oct 2016[c]	May 2017[c]	Oct 2017[c]	Apr 2018[c]
MWL-SV01-42.5	110	NA	NA	NA	NA	75	67	61
MWL-SV02-41.5	68	NA	NA	NA	NA	52	51	45
MWL-SV03-300	120	150	140	160	180	140	190	97
MWL-SV03-400	200	210	210	200	230	120	180	130
MWL-SV04-300	33	58	59	82	68	50	42	38
MWL-SV04-400	40	58	67	68	56	32	54	34
MWL-SV05-300	73	72	66	81	150	110	110	81
MWL-SV05-400	56	62	60	71	75	40	67	44
Trigger Level[a]	20,000							

Notes:
[a] The trigger levels only apply to samples collected from 400ft ports (SNL/NM March 2012).
[b] Port depth is the last number in the Well ID, and is in feet below ground surface.
[c] If a duplicate sample was collected, then maximum concentration of the environmental-duplicate sample pair is shown.
NA = No data available. No samples were collected during this sampling event.

Table 2-3 NMED DOE-OB Total VOCs Concentrations
NMED DOE-OB Soil Vapor Data Results from the MWL 2014-2018

MWL Well ID & Sample Port Depth[b]	Total VOCs Concentrations (ppbv)							
	Sep 2014[c]	Apr 2015[c]	Oct 2015[c]	Apr 2016[c]	Oct 2016[c]	May 2017[c]	Oct 2017[c]	Apr 2018[c]
MWL-SV01-42.5	833.7	NA	NA	NA	NA	838.76	780.64	605.3
MWL-SV02-41.5	515.5	NA	NA	NA	NA	607.78	648.72	477.9
MWL-SV03-300	460.6	554.9	493.6	576.8	649.67	593.58	709.38	396.33
MWL-SV03-400	825.4	685.3	661.5	678.6	681.73	437	587.86	473.04
MWL-SV04-300	158.7	237.9	252.4	269.7	320.64	2275.6	227.67	210.52
MWL-SV04-400	147.5	228.9	220.5	234.6	285.08	265.86	295.34	187.40
MWL-SV05-300	282.8	289.9	272.2	335.3	534.19	495.2	472.68	383.7
MWL-SV05-400	802	235.8	241.2	249.7	310.66	192.71	242.63	207.03
Trigger Level[a]	25,000							

Notes:
[a] The trigger levels only apply to samples collected from 400ft ports (SNL/NM March 2012).
[b] Port depth is the last number in the Well ID, and is in feet below ground surface.
[c] If a duplicate sample was collected, then maximum concentration of the environmental-duplicate sample pair is shown.
NA = No data available. No samples were collected during this sampling event.

References

Sandia National Laboratories, New Mexico Environmental Restoration Operations. Long-Term Monitoring and Maintenance Plan for the Mixed Waste Landfill, March 2012.

Soil Vapor Monitoring at SNL/NM MWL Conducted by NMED DOE OB for FFY 2014 Q-4

Soil Vapor Monitoring at SNL/NM MWL Conducted by NMED DOE OB for FFY 2015 Q-3

Soil Vapor Monitoring at SNL/NM MWL Conducted by NMED DOE OB for FFY 2016 Q-1

Soil Vapor Monitoring at SNL/NM MWL Conducted by NMED DOE OB for FFY 2016 Q-3

Soil Vapor Monitoring at SNL/NM MWL Conducted by NMED DOE OB for FFY 2017 Q-1

Soil Vapor Monitoring at SNL/NM MWL Conducted by NMED DOE OB for FFY 2017 Q-3

Soil Vapor Monitoring at SNL/NM MWL Conducted by NMED DOE OB for FFY 2018 Q-1

Table 3-1

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV01 sampled at a depth of approximately 42.5 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV01-42.5 25-Apr-18	Acetone	26	50	26	U
	Benzene	0.71	2	0.71	U
	Benzyl Chloride	1.2	2	1.2	U
	Bromodichloromethane	0.94	2	0.94	U
	Bromoform	0.86	2	0.86	U
	Bromomethane	0.62	2	0.62	U
	Butanone[2-]	2	5	2	U
	Carbon Disulfide	1.2	5	1.2	U
	Carbon Tetrachloride	0.24	2	0.24	U
	Chlorobenzene	0.4	2	0.4	U
	Chlorodibromomethane	0.71	2	0.71	U
	Chloroethane	2.1	5	2.1	U
	Chloroform	13	2	0.52	
	Chloromethane	2.5	5	2.5	U
	Dibromoethane[1,2-]	0.69	2	0.69	U
	Dichloro-1,1,2,2-tetrafluoroethane[1,2-]	0.68	2	0.68	U
	Dichlorobenzene[1,2-]	0.71	2	0.71	U
	Dichlorobenzene[1,3-]	0.82	2	0.82	U
	Dichlorobenzene[1,4-]	0.65	2	0.65	U
	Dichlorodifluoromethane	69	5	2	
	Dichloroethane[1,1-]	2.1	2	0.26	
	Dichloroethane[1,2-]	0.63	2	0.63	U
	Dichloroethene[1,1-]	6	2	0.34	
	Dichloroethene[cis-1,2-]	1.2	2	0.37	J
	Dichloroethene[trans-1,2-]	0.74	2	0.74	U
	Dichloropropane[1,2-]	1.2	2	1.2	U
	Dichloropropene[cis-1,3-]	0.98	2	0.98	U
	Dichloropropene[trans-1,3-]	1.2	2	1.2	U
	Ethylbenzene	0.73	2	0.73	U
	Ethyltoluene[4-]	0.69	2	0.69	U
	Hexachlorobutadiene	0.82	2	0.82	U

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-1

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV01 sampled at a depth of approximately 42.5 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV01-42.5 25-Apr-18	Hexanone[2-]	4.2	5	4.2	U
	Methyl-2-pentanone[4-]	3.6	5	3.6	U
	Methylene Chloride	2	5	2	U
	Styrene	0.86	2	0.86	U
	Tetrachloroethane[1,1,2,2-]	0.76	2	0.76	U
	Tetrachloroethene	260	2	0.29	
	Toluene	0.69	2	0.69	U
	Trichloro-1,2,2-trifluoroethane[1,1,2-]	56	2	0.31	
	Trichlorobenzene[1,2,4-]	2.4	5	2.4	U
	Trichloroethane[1,1,1-]	27	2	0.68	
	Trichloroethane[1,1,2-]	0.78	2	0.78	U
	Trichloroethene	61	2	0.3	
	Trichlorofluoromethane	110	2	0.62	
	Trimethylbenzene[1,2,4-]	0.8	2	0.8	U
	Trimethylbenzene[1,3,5-]	0.58	2	0.58	U
	Vinyl acetate	23	50	23	U
	Vinyl Chloride	0.41	2	0.41	U
	Xylene[1,2-]	0.71	2	0.71	U
	Xylene[1,3-]+Xylene[1,4-]	0.7	5	0.7	U
	Total Organics	605.3	NA	NA	

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-2

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV02 sampled at a depth of approximately 41.5 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV02-41.5 25-Apr-18	Acetone	21	40	21	U
	Benzene	0.57	1.6	0.57	U
	Benzyl Chloride	0.96	1.6	0.96	U
	Bromodichloromethane	0.75	1.6	0.75	U
	Bromoform	0.69	1.6	0.69	U
	Bromomethane	0.5	1.6	0.5	U
	Butanone[2-]	2.2	4	1.6	J
	Carbon Disulfide	0.96	4	0.96	U
	Carbon Tetrachloride	0.25	1.6	0.19	J
	Chlorobenzene	0.32	1.6	0.32	U
	Chlorodibromomethane	0.57	1.6	0.57	U
	Chloroethane	1.7	4	1.7	U
	Chloroform	2.6	1.6	0.42	
	Chloromethane	2	4	2	U
	Dibromoethane[1,2-]	0.55	1.6	0.55	U
	Dichloro-1,1,2,2-tetrafluoroethane[1,2-]	0.54	1.6	0.54	U
	Dichlorobenzene[1,2-]	0.57	1.6	0.57	U
	Dichlorobenzene[1,3-]	0.66	1.6	0.66	U
	Dichlorobenzene[1,4-]	0.52	1.6	0.52	U
	Dichlorodifluoromethane	74	4	1.6	
	Dichloroethane[1,1-]	2	1.6	0.21	
	Dichloroethane[1,2-]	0.5	1.6	0.5	U
	Dichloroethene[1,1-]	8.2	1.6	0.27	
	Dichloroethene[cis-1,2-]	0.65	1.6	0.3	J
	Dichloroethene[trans-1,2-]	0.59	1.6	0.59	U
	Dichloropropane[1,2-]	0.96	1.6	0.96	U
	Dichloropropene[cis-1,3-]	0.78	1.6	0.78	U
	Dichloropropene[trans-1,3-]	0.96	1.6	0.96	U
	Ethylbenzene	0.58	1.6	0.58	U
	Ethyltoluene[4-]	0.55	1.6	0.55	U
	Hexachlorobutadiene	0.66	1.6	0.66	U

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-2

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV02 sampled at a depth of approximately 41.5 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV02-41.5 25-Apr-18	Hexanone[2-]	3.4	4	3.4	U
	Methyl-2-pentanone[4-]	2.9	4	2.9	U
	Methylene Chloride	1.6	4	1.6	U
	Styrene	0.69	1.6	0.69	U
	Tetrachloroethane[1,1,2,2-]	0.61	1.6	0.61	U
	Tetrachloroethene	43	1.6	0.23	
	Toluene	0.55	1.6	0.55	U
	Trichloro-1,2,2-trifluoroethane[1,1,2-]	38	1.6	0.25	
	Trichlorobenzene[1,2,4-]	1.9	4	1.9	U
	Trichloroethane[1,1,1-]	52	1.6	0.54	
	Trichloroethane[1,1,2-]	0.62	1.6	0.62	U
	Trichloroethene	45	1.6	0.24	
	Trichlorofluoromethane	210	1.6	0.5	
	Trimethylbenzene[1,2,4-]	0.64	1.6	0.64	U
	Trimethylbenzene[1,3,5-]	0.46	1.6	0.46	U
	Vinyl acetate	18	40	18	U
	Vinyl Chloride	0.33	1.6	0.33	U
	Xylene[1,2-]	0.57	1.6	0.57	U
	Xylene[1,3-]+Xylene[1,4-]	0.56	4	0.56	U
	Total Organics	477.9	NA	NA	

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-3

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV03 sampled at a depth of approximately 50 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV03-50 25-Apr-18	Acetone	59	20	10	
	Benzene	0.47	0.8	0.28	J
	Benzyl Chloride	0.48	0.8	0.48	U
	Bromodichloromethane	0.38	0.8	0.38	U
	Bromoform	0.34	0.8	0.34	U
	Bromomethane	0.25	0.8	0.25	U
	Butanone[2-]	94	2	0.8	
	Carbon Disulfide	0.48	2	0.48	U
	Carbon Tetrachloride	0.2	0.8	0.096	J
	Chlorobenzene	0.16	0.8	0.16	U
	Chlorodibromomethane	0.28	0.8	0.28	U
	Chloroethane	0.84	2	0.84	U
	Chloroform	1.5	0.8	0.21	
	Chloromethane	1	2	1	U
	Dibromoethane[1,2-]	0.28	0.8	0.28	U
	Dichloro-1,1,2,2-tetrafluoroethane[1,2-]	0.27	0.8	0.27	U
	Dichlorobenzene[1,2-]	0.28	0.8	0.28	U
	Dichlorobenzene[1,3-]	0.33	0.8	0.33	U
	Dichlorobenzene[1,4-]	0.26	0.8	0.26	U
	Dichlorodifluoromethane	23	2	0.8	
	Dichloroethane[1,1-]	2.8	0.8	0.1	
	Dichloroethane[1,2-]	0.25	0.8	0.25	U
	Dichloroethene[1,1-]	9.3	0.8	0.14	
	Dichloroethene[cis-1,2-]	1.6	0.8	0.15	
	Dichloroethene[trans-1,2-]	0.3	0.8	0.3	U
	Dichloropropane[1,2-]	0.48	0.8	0.48	U
	Dichloropropene[cis-1,3-]	0.39	0.8	0.39	U
	Dichloropropene[trans-1,3-]	0.48	0.8	0.48	U
	Ethylbenzene	0.29	0.8	0.29	U
	Ethyltoluene[4-]	0.28	0.8	0.28	U
	Hexachlorobutadiene	0.33	0.8	0.33	U

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-3

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV03 sampled at a depth of approximately 50 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV03-50 25-Apr-18	Hexanone[2-]	36	2	1.7	
	Methyl-2-pentanone[4-]	1.4	2	1.4	U
	Methylene Chloride	0.97	2	0.8	J
	Styrene	0.34	0.8	0.34	U
	Tetrachloroethane[1,1,2,2-]	0.3	0.8	0.3	U
	Tetrachloroethene	100	0.8	0.12	
	Toluene	0.28	0.8	0.28	U
	Trichloro-1,2,2-trifluoroethane[1,1,2-]	52	0.8	0.12	
	Trichlorobenzene[1,2,4-]	0.96	2	0.96	U
	Trichloroethane[1,1,1-]	2.5	0.8	0.27	
	Trichloroethane[1,1,2-]	0.31	0.8	0.31	U
	Trichloroethene	80	0.8	0.12	
	Trichlorofluoromethane	18	0.8	0.25	
	Trimethylbenzene[1,2,4-]	0.32	0.8	0.32	U
	Trimethylbenzene[1,3,5-]	0.23	0.8	0.23	U
	Vinyl acetate	9.2	20	9.2	U
	Vinyl Chloride	0.16	0.8	0.16	U
	Xylene[1,2-]	0.28	0.8	0.28	U
	Xylene[1,3-]+Xylene[1,4-]	0.28	2	0.28	U
	Total Organics	481.34	NA	NA	

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-4

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV03 sampled at a depth of approximately 100 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV03-100 25-Apr-18	Acetone	21	40	21	U
	Benzene	0.57	1.6	0.57	U
	Benzyl Chloride	0.96	1.6	0.96	U
	Bromodichloromethane	0.75	1.6	0.75	U
	Bromoform	0.69	1.6	0.69	U
	Bromomethane	0.5	1.6	0.5	U
	Butanone[2-]	1.6	4	1.6	U
	Carbon Disulfide	0.96	4	0.96	U
	Carbon Tetrachloride	0.35	1.6	0.19	J
	Chlorobenzene	0.32	1.6	0.32	U
	Chlorodibromomethane	0.57	1.6	0.57	U
	Chloroethane	1.7	4	1.7	U
	Chloroform	2.4	1.6	0.42	
	Chloromethane	2	4	2	U
	Dibromoethane[1,2-]	0.55	1.6	0.55	U
	Dichloro-1,1,2,2-tetrafluoroethane[1,2-]	0.54	1.6	0.54	U
	Dichlorobenzene[1,2-]	0.57	1.6	0.57	U
	Dichlorobenzene[1,3-]	0.66	1.6	0.66	U
	Dichlorobenzene[1,4-]	0.52	1.6	0.52	U
	Dichlorodifluoromethane	41	4	1.6	
	Dichloroethane[1,1-]	5.3	1.6	0.21	
	Dichloroethane[1,2-]	0.5	1.6	0.5	U
	Dichloroethene[1,1-]	18	1.6	0.27	
	Dichloroethene[cis-1,2-]	3.2	1.6	0.3	
	Dichloroethene[trans-1,2-]	0.59	1.6	0.59	U
	Dichloropropane[1,2-]	0.96	1.6	0.96	U
	Dichloropropene[cis-1,3-]	0.78	1.6	0.78	U
	Dichloropropene[trans-1,3-]	0.96	1.6	0.96	U
	Ethylbenzene	0.58	1.6	0.58	U
	Ethyltoluene[4-]	0.55	1.6	0.55	U
	Hexachlorobutadiene	0.66	1.6	0.66	U

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-4

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV03 sampled at a depth of approximately 100 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV03-100 25-Apr-18	Hexanone[2-]	3.4	4	3.4	U
	Methyl-2-pentanone[4-]	2.9	4	2.9	U
	Methylene Chloride	2.1	4	1.6	J
	Styrene	0.69	1.6	0.69	U
	Tetrachloroethane[1,1,2,2-]	0.61	1.6	0.61	U
	Tetrachloroethene	160	1.6	0.23	
	Toluene	0.55	1.6	0.55	U
	Trichloro-1,2,2-trifluoroethane[1,1,2-]	100	1.6	0.25	
	Trichlorobenzene[1,2,4-]	1.9	4	1.9	U
	Trichloroethane[1,1,1-]	3.9	1.6	0.54	
	Trichloroethane[1,1,2-]	0.62	1.6	0.62	U
	Trichloroethene	140	1.6	0.24	
	Trichlorofluoromethane	31	1.6	0.5	
	Trimethylbenzene[1,2,4-]	0.64	1.6	0.64	U
	Trimethylbenzene[1,3,5-]	0.46	1.6	0.46	U
	Vinyl acetate	18	40	18	U
	Vinyl Chloride	0.33	1.6	0.33	U
	Xylene[1,2-]	0.57	1.6	0.57	U
	Xylene[1,3-]+Xylene[1,4-]	0.56	4	0.56	U
	Total Organics	507.25	NA	NA	

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-5

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV03 sampled at a depth of approximately 200 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV03-200 25-Apr-18	Acetone	26	50	26	U
	Benzene	0.71	2	0.71	U
	Benzyl Chloride	1.2	2	1.2	U
	Bromodichloromethane	0.94	2	0.94	U
	Bromoform	0.86	2	0.86	U
	Bromomethane	0.62	2	0.62	U
	Butanone[2-]	2	5	2	U
	Carbon Disulfide	1.2	5	1.2	U
	Carbon Tetrachloride	0.38	2	0.24	J
	Chlorobenzene	0.4	2	0.4	U
	Chlorodibromomethane	0.71	2	0.71	U
	Chloroethane	2.1	5	2.1	U
	Chloroform	2.1	2	0.52	
	Chloromethane	2.5	5	2.5	U
	Dibromoethane[1,2-]	0.69	2	0.69	U
	Dichloro-1,1,2,2-tetrafluoroethane[1,2-]	0.68	2	0.68	U
	Dichlorobenzene[1,2-]	0.71	2	0.71	U
	Dichlorobenzene[1,3-]	0.82	2	0.82	U
	Dichlorobenzene[1,4-]	0.65	2	0.65	U
	Dichlorodifluoromethane	46	5	2	
	Dichloroethane[1,1-]	6.6	2	0.26	
	Dichloroethane[1,2-]	0.63	2	0.63	U
	Dichloroethene[1,1-]	24	2	0.34	
	Dichloroethene[cis-1,2-]	3.8	2	0.37	
	Dichloroethene[trans-1,2-]	0.74	2	0.74	U
	Dichloropropane[1,2-]	1.2	2	1.2	U
	Dichloropropene[cis-1,3-]	0.98	2	0.98	U
	Dichloropropene[trans-1,3-]	1.2	2	1.2	U
	Ethylbenzene	0.73	2	0.73	U
	Ethyltoluene[4-]	0.69	2	0.69	U
	Hexachlorobutadiene	0.82	2	0.82	U

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-5

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV03 sampled at a depth of approximately 200 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV03-200 25-Apr-18	Hexanone[2-]	4.2	5	4.2	U
	Methyl-2-pentanone[4-]	3.6	5	3.6	U
	Methylene Chloride	3.8	5	2	J
	Styrene	0.86	2	0.86	U
	Tetrachloroethane[1,1,2,2-]	0.76	2	0.76	U
	Tetrachloroethene	170	2	0.29	
	Toluene	0.69	2	0.69	U
	Trichloro-1,2,2-trifluoroethane[1,1,2-]	120	2	0.31	
	Trichlorobenzene[1,2,4-]	2.4	5	2.4	U
	Trichloroethane[1,1,1-]	2.4	2	0.68	
	Trichloroethane[1,1,2-]	0.78	2	0.78	U
	Trichloroethene	170	2	0.3	
	Trichlorofluoromethane	28	2	0.62	
	Trimethylbenzene[1,2,4-]	0.8	2	0.8	U
	Trimethylbenzene[1,3,5-]	0.58	2	0.58	U
	Vinyl acetate	23	50	23	U
	Vinyl Chloride	0.41	2	0.41	U
	Xylene[1,2-]	0.71	2	0.71	U
	Xylene[1,3-]+Xylene[1,4-]	0.7	5	0.7	U
	Total Organics	577.08	NA	NA	

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-6

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV03 sampled at a depth of approximately 300 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV03-300 25-Apr-18	Acetone	21	40	21	U
	Benzene	0.57	1.6	0.57	U
	Benzyl Chloride	0.96	1.6	0.96	U
	Bromodichloromethane	0.75	1.6	0.75	U
	Bromoform	0.69	1.6	0.69	U
	Bromomethane	0.5	1.6	0.5	U
	Butanone[2-]	1.6	4	1.6	U
	Carbon Disulfide	0.96	4	0.96	U
	Carbon Tetrachloride	0.26	1.6	0.19	J
	Chlorobenzene	0.32	1.6	0.32	U
	Chlorodibromomethane	0.57	1.6	0.57	U
	Chloroethane	1.7	4	1.7	U
	Chloroform	0.77	1.6	0.42	J
	Chloromethane	2	4	2	U
	Dibromoethane[1,2-]	0.55	1.6	0.55	U
	Dichloro-1,1,2,2-tetrafluoroethane[1,2-]	0.54	1.6	0.54	U
	Dichlorobenzene[1,2-]	0.57	1.6	0.57	U
	Dichlorobenzene[1,3-]	0.66	1.6	0.66	U
	Dichlorobenzene[1,4-]	0.52	1.6	0.52	U
	Dichlorodifluoromethane	35	4	1.6	
	Dichloroethane[1,1-]	2.1	1.6	0.21	
	Dichloroethane[1,2-]	0.5	1.6	0.5	U
	Dichloroethene[1,1-]	16	1.6	0.27	
	Dichloroethene[cis-1,2-]	1.2	1.6	0.3	J
	Dichloroethene[trans-1,2-]	0.59	1.6	0.59	U
	Dichloropropane[1,2-]	0.96	1.6	0.96	U
	Dichloropropene[cis-1,3-]	0.78	1.6	0.78	U
	Dichloropropene[trans-1,3-]	0.96	1.6	0.96	U
	Ethylbenzene	0.58	1.6	0.58	U
	Ethyltoluene[4-]	0.55	1.6	0.55	U
	Hexachlorobutadiene	0.66	1.6	0.66	U

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-6

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV03 sampled at a depth of approximately 300 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV03-300 25-Apr-18	Hexanone[2-]	3.4	4	3.4	U
	Methyl-2-pentanone[4-]	2.9	4	2.9	U
	Methylene Chloride	1.6	4	1.6	U
	Styrene	0.69	1.6	0.69	U
	Tetrachloroethane[1,1,2,2-]	0.61	1.6	0.61	U
	Tetrachloroethene	140	1.6	0.23	
	Toluene	0.55	1.6	0.55	U
	Trichloro-1,2,2-trifluoroethane[1,1,2-]	92	1.6	0.25	
	Trichlorobenzene[1,2,4-]	1.9	4	1.9	U
	Trichloroethane[1,1,1-]	0.54	1.6	0.54	U
	Trichloroethane[1,1,2-]	0.62	1.6	0.62	U
	Trichloroethene	97	1.6	0.24	
	Trichlorofluoromethane	12	1.6	0.5	
	Trimethylbenzene[1,2,4-]	0.64	1.6	0.64	U
	Trimethylbenzene[1,3,5-]	0.46	1.6	0.46	U
	Vinyl acetate	18	40	18	U
	Vinyl Chloride	0.33	1.6	0.33	U
	Xylene[1,2-]	0.57	1.6	0.57	U
	Xylene[1,3-]+Xylene[1,4-]	0.56	4	0.56	U
	Total Organics	396.33	NA	NA	

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-7

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV03 sampled at a depth of approximately 400 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV03-400 25-Apr-18	Acetone	26	50	26	U
	Benzene	0.71	2	0.71	U
	Benzyl Chloride	1.2	2	1.2	U
	Bromodichloromethane	0.94	2	0.94	U
	Bromoform	0.86	2	0.86	U
	Bromomethane	0.62	2	0.62	U
	Butanone[2-]	2	5	2	U
	Carbon Disulfide	1.2	5	1.2	U
	Carbon Tetrachloride	0.28	2	0.24	J
	Chlorobenzene	0.4	2	0.4	U
	Chlorodibromomethane	0.71	2	0.71	U
	Chloroethane	2.1	5	2.1	U
	Chloroform	0.98	2	0.52	J
	Chloromethane	2.5	5	2.5	U
	Dibromoethane[1,2-]	0.69	2	0.69	U
	Dichloro-1,1,2,2-tetrafluoroethane[1,2-]	0.68	2	0.68	U
	Dichlorobenzene[1,2-]	0.71	2	0.71	U
	Dichlorobenzene[1,3-]	0.82	2	0.82	U
	Dichlorobenzene[1,4-]	0.65	2	0.65	U
	Dichlorodifluoromethane	9.7	5	2	
	Dichloroethane[1,1-]	2.2	2	0.26	
	Dichloroethane[1,2-]	0.63	2	0.63	U
	Dichloroethene[1,1-]	16	2	0.34	
	Dichloroethene[cis-1,2-]	1.1	2	0.37	J
	Dichloroethene[trans-1,2-]	0.74	2	0.74	U
	Dichloropropane[1,2-]	1.2	2	1.2	U
	Dichloropropene[cis-1,3-]	0.98	2	0.98	U
	Dichloropropene[trans-1,3-]	1.2	2	1.2	U
	Ethylbenzene	0.73	2	0.73	U
	Ethyltoluene[4-]	0.69	2	0.69	U
	Hexachlorobutadiene	0.82	2	0.82	U

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-7

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV03 sampled at a depth of approximately 400 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV03-400 25-Apr-18	Hexanone[2-]	4.2	5	4.2	U
	Methyl-2-pentanone[4-]	3.6	5	3.6	U
	Methylene Chloride	2	5	2	U
	Styrene	0.86	2	0.86	U
	Tetrachloroethane[1,1,2,2-]	0.76	2	0.76	U
	Tetrachloroethene	240	2	0.29	
	Toluene	0.78	2	0.69	J
	Trichloro-1,2,2-trifluoroethane[1,1,2-]	58	2	0.31	
	Trichlorobenzene[1,2,4-]	2.4	5	2.4	U
	Trichloroethane[1,1,1-]	0.68	2	0.68	U
	Trichloroethane[1,1,2-]	0.78	2	0.78	U
	Trichloroethene	130	2	0.3	
	Trichlorofluoromethane	14	2	0.62	
	Trimethylbenzene[1,2,4-]	0.8	2	0.8	U
	Trimethylbenzene[1,3,5-]	0.58	2	0.58	U
	Vinyl acetate	23	50	23	U
	Vinyl Chloride	0.41	2	0.41	U
	Xylene[1,2-]	0.71	2	0.71	U
	Xylene[1,3-]+Xylene[1,4-]	0.7	5	0.7	U
	Total Organics	473.04	NA	NA	

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-8

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV04 sampled at a depth of approximately 50 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV04-50 25-Apr-18	Acetone	5.2	10	5.2	U
	Benzene	0.37	0.4	0.14	J
	Benzyl Chloride	0.24	0.4	0.24	U
	Bromodichloromethane	0.19	0.4	0.19	U
	Bromoform	0.17	0.4	0.17	U
	Bromomethane	0.12	0.4	0.12	U
	Butanone[2-]	0.71	1	0.4	J
	Carbon Disulfide	0.24	1	0.24	U
	Carbon Tetrachloride	0.19	0.4	0.048	J
	Chlorobenzene	0.08	0.4	0.08	U
	Chlorodibromomethane	0.14	0.4	0.14	U
	Chloroethane	0.42	1	0.42	U
	Chloroform	1.7	0.4	0.1	
	Chloromethane	0.5	1	0.5	U
	Dibromoethane[1,2-]	0.14	0.4	0.14	U
	Dichloro-1,1,2,2-tetrafluoroethane[1,2-]	0.14	0.4	0.14	U
	Dichlorobenzene[1,2-]	0.38	0.4	0.14	J
	Dichlorobenzene[1,3-]	0.16	0.4	0.16	U
	Dichlorobenzene[1,4-]	0.13	0.4	0.13	U
	Dichlorodifluoromethane	19	1	0.4	
	Dichloroethane[1,1-]	1.2	0.4	0.052	
	Dichloroethane[1,2-]	0.13	0.4	0.13	U
	Dichloroethene[1,1-]	5.1	0.4	0.068	
	Dichloroethene[cis-1,2-]	0.46	0.4	0.074	
	Dichloroethene[trans-1,2-]	0.15	0.4	0.15	U
	Dichloropropane[1,2-]	0.24	0.4	0.24	U
	Dichloropropene[cis-1,3-]	0.2	0.4	0.2	U
	Dichloropropene[trans-1,3-]	0.24	0.4	0.24	U
	Ethylbenzene	0.17	0.4	0.15	J
	Ethyltoluene[4-]	0.14	0.4	0.14	U
	Hexachlorobutadiene	0.16	0.4	0.16	U

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-8

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV04 sampled at a depth of approximately 50 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV04-50 25-Apr-18	Hexanone[2-]	0.84	1	0.84	U
	Methyl-2-pentanone[4-]	0.72	1	0.72	U
	Methylene Chloride	0.43	1	0.4	J
	Styrene	0.17	0.4	0.17	U
	Tetrachloroethane[1,1,2,2-]	0.15	0.4	0.15	U
	Tetrachloroethene	46	0.4	0.058	
	Toluene	1.2	0.4	0.14	
	Trichloro-1,2,2-trifluoroethane[1,1,2-]	45	0.4	0.062	
	Trichlorobenzene[1,2,4-]	0.48	1	0.48	U
	Trichloroethane[1,1,1-]	5.8	0.4	0.14	
	Trichloroethane[1,1,2-]	0.16	0.4	0.16	U
	Trichloroethene	40	0.4	0.06	
	Trichlorofluoromethane	20	0.4	0.12	
	Trimethylbenzene[1,2,4-]	0.16	0.4	0.16	U
	Trimethylbenzene[1,3,5-]	0.12	0.4	0.12	U
	Vinyl acetate	4.6	10	4.6	U
	Vinyl Chloride	0.082	0.4	0.082	U
	Xylene[1,2-]	0.33	0.4	0.14	J
	Xylene[1,3-]+Xylene[1,4-]	0.39	1	0.14	J
	Total Organics	188.43	NA	NA	

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-9

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV04 sampled at a depth of approximately 100 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV04-100 25-Apr-18	Acetone	10	20	10	U
	Benzene	0.4	0.8	0.28	J
	Benzyl Chloride	0.48	0.8	0.48	U
	Bromodichloromethane	0.38	0.8	0.38	U
	Bromoform	0.34	0.8	0.34	U
	Bromomethane	0.25	0.8	0.25	U
	Butanone[2-]	0.9	2	0.8	J
	Carbon Disulfide	2.1	2	0.48	
	Carbon Tetrachloride	0.31	0.8	0.096	J
	Chlorobenzene	0.16	0.8	0.16	U
	Chlorodibromomethane	0.28	0.8	0.28	U
	Chloroethane	0.84	2	0.84	U
	Chloroform	2	0.8	0.21	
	Chloromethane	1	2	1	U
	Dibromoethane[1,2-]	0.28	0.8	0.28	U
	Dichloro-1,1,2,2-tetrafluoroethane[1,2-]	0.27	0.8	0.27	U
	Dichlorobenzene[1,2-]	0.28	0.8	0.28	U
	Dichlorobenzene[1,3-]	0.33	0.8	0.33	U
	Dichlorobenzene[1,4-]	0.26	0.8	0.26	U
	Dichlorodifluoromethane	32	2	0.8	
	Dichloroethane[1,1-]	2.8	0.8	0.1	
	Dichloroethane[1,2-]	0.25	0.8	0.25	U
	Dichloroethene[1,1-]	13	0.8	0.14	
	Dichloroethene[cis-1,2-]	1.4	0.8	0.15	
	Dichloroethene[trans-1,2-]	0.3	0.8	0.3	U
	Dichloropropane[1,2-]	0.48	0.8	0.48	U
	Dichloropropene[cis-1,3-]	0.39	0.8	0.39	U
	Dichloropropene[trans-1,3-]	0.48	0.8	0.48	U
	Ethylbenzene	0.29	0.8	0.29	U
	Ethyltoluene[4-]	0.28	0.8	0.28	U
	Hexachlorobutadiene	0.33	0.8	0.33	U

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-9

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV04 sampled at a depth of approximately 100 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV04-100 25-Apr-18	Hexanone[2-]	1.7	2	1.7	U
	Methyl-2-pentanone[4-]	1.4	2	1.4	U
	Methylene Chloride	0.8	2	0.8	U
	Styrene	0.34	0.8	0.34	U
	Tetrachloroethane[1,1,2,2-]	0.3	0.8	0.3	U
	Tetrachloroethene	82	0.8	0.12	
	Toluene	0.28	0.8	0.28	U
	Trichloro-1,2,2-trifluoroethane[1,1,2-]	77	0.8	0.12	
	Trichlorobenzene[1,2,4-]	0.96	2	0.96	U
	Trichloroethane[1,1,1-]	5.2	0.8	0.27	
	Trichloroethane[1,1,2-]	0.31	0.8	0.31	U
	Trichloroethene	89	0.8	0.12	
	Trichlorofluoromethane	31	0.8	0.25	
	Trimethylbenzene[1,2,4-]	0.32	0.8	0.32	U
	Trimethylbenzene[1,3,5-]	0.23	0.8	0.23	U
	Vinyl acetate	9.2	20	9.2	U
	Vinyl Chloride	0.16	0.8	0.16	U
	Xylene[1,2-]	0.28	0.8	0.28	U
	Xylene[1,3-]+Xylene[1,4-]	0.31	2	0.28	J
	Total Organics	339.42	NA	NA	

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-10

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV04 sampled at a depth of approximately 200 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV04-200 25-Apr-18	Acetone	16	30	16	U
	Benzene	0.43	1.2	0.43	U
	Benzyl Chloride	0.72	1.2	0.72	U
	Bromodichloromethane	0.56	1.2	0.56	U
	Bromoform	0.52	1.2	0.52	U
	Bromomethane	0.37	1.2	0.37	U
	Butanone[2-]	1.2	3	1.2	U
	Carbon Disulfide	0.72	3	0.72	U
	Carbon Tetrachloride	0.47	1.2	0.14	J
	Chlorobenzene	0.24	1.2	0.24	U
	Chlorodibromomethane	0.43	1.2	0.43	U
	Chloroethane	1.3	3	1.3	U
	Chloroform	1.4	1.2	0.31	
	Chloromethane	1.5	3	1.5	U
	Dibromoethane[1,2-]	0.41	1.2	0.41	U
	Dichloro-1,1,2,2-tetrafluoroethane[1,2-]	0.41	1.2	0.41	U
	Dichlorobenzene[1,2-]	0.43	1.2	0.43	U
	Dichlorobenzene[1,3-]	0.49	1.2	0.49	U
	Dichlorobenzene[1,4-]	0.39	1.2	0.39	U
	Dichlorodifluoromethane	46	3	1.2	
	Dichloroethane[1,1-]	4.9	1.2	0.16	
	Dichloroethane[1,2-]	0.38	1.2	0.38	U
	Dichloroethene[1,1-]	25	1.2	0.2	
	Dichloroethene[cis-1,2-]	2.8	1.2	0.22	
	Dichloroethene[trans-1,2-]	0.44	1.2	0.44	U
	Dichloropropane[1,2-]	0.72	1.2	0.72	U
	Dichloropropene[cis-1,3-]	0.59	1.2	0.59	U
	Dichloropropene[trans-1,3-]	0.72	1.2	0.72	U
	Ethylbenzene	0.44	1.2	0.44	U
	Ethyltoluene[4-]	0.41	1.2	0.41	U
	Hexachlorobutadiene	0.49	1.2	0.49	U

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-10

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV04 sampled at a depth of approximately 200 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV04-200 25-Apr-18	Hexanone[2-]	2.5	3	2.5	U
	Methyl-2-pentanone[4-]	2.2	3	2.2	U
	Methylene Chloride	1.9	3	1.2	J
	Styrene	0.52	1.2	0.52	U
	Tetrachloroethane[1,1,2,2-]	0.46	1.2	0.46	U
	Tetrachloroethene	110	1.2	0.17	
	Toluene	0.41	1.2	0.41	U
	Trichloro-1,2,2-trifluoroethane[1,1,2-]	120	1.2	0.19	
	Trichlorobenzene[1,2,4-]	1.4	3	1.4	U
	Trichloroethane[1,1,1-]	1.6	1.2	0.41	
	Trichloroethane[1,1,2-]	0.47	1.2	0.47	U
	Trichloroethene	140	1.2	0.18	
	Trichlorofluoromethane	29	1.2	0.37	
	Trimethylbenzene[1,2,4-]	0.48	1.2	0.48	U
	Trimethylbenzene[1,3,5-]	0.35	1.2	0.35	U
	Vinyl acetate	14	30	14	U
	Vinyl Chloride	0.25	1.2	0.25	U
	Xylene[1,2-]	0.43	1.2	0.43	U
	Xylene[1,3-]+Xylene[1,4-]	0.42	3	0.42	U
	Total Organics	537.27	NA	NA	

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-11

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV04 sampled at a depth of approximately 300 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV04-300 25-Apr-18	Acetone	5.2	10	5.2	J
	Benzene	0.27	0.4	0.14	J
	Benzyl Chloride	0.24	0.4	0.24	U
	Bromodichloromethane	0.19	0.4	0.19	U
	Bromoform	0.17	0.4	0.17	U
	Bromomethane	0.12	0.4	0.12	U
	Butanone[2-]	0.83	1	0.4	J
	Carbon Disulfide	0.24	1	0.24	U
	Carbon Tetrachloride	0.23	0.4	0.048	J
	Chlorobenzene	0.08	0.4	0.08	U
	Chlorodibromomethane	0.14	0.4	0.14	U
	Chloroethane	0.42	1	0.42	U
	Chloroform	0.29	0.4	0.1	J
	Chloromethane	0.5	1	0.5	U
	Dibromoethane[1,2-]	0.14	0.4	0.14	U
	Dichloro-1,1,2,2-tetrafluoroethane[1,2-]	0.14	0.4	0.14	U
	Dichlorobenzene[1,2-]	0.14	0.4	0.14	U
	Dichlorobenzene[1,3-]	0.16	0.4	0.16	U
	Dichlorobenzene[1,4-]	0.13	0.4	0.13	U
	Dichlorodifluoromethane	26	1	0.4	
	Dichloroethane[1,1-]	0.39	0.4	0.052	J
	Dichloroethane[1,2-]	0.13	0.4	0.13	U
	Dichloroethene[1,1-]	8.7	0.4	0.068	
	Dichloroethene[cis-1,2-]	0.21	0.4	0.074	J
	Dichloroethene[trans-1,2-]	0.15	0.4	0.15	U
	Dichloropropane[1,2-]	0.24	0.4	0.24	U
	Dichloropropene[cis-1,3-]	0.2	0.4	0.2	U
	Dichloropropene[trans-1,3-]	0.24	0.4	0.24	U
	Ethylbenzene	0.15	0.4	0.15	U
	Ethyltoluene[4-]	0.14	0.4	0.14	U
	Hexachlorobutadiene	0.16	0.4	0.16	U

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-11

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV04 sampled at a depth of approximately 300 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV04-300 25-Apr-18	Hexanone[2-]	0.84	1	0.84	U
	Methyl-2-pentanone[4-]	0.72	1	0.72	U
	Methylene Chloride	0.4	1	0.4	U
	Styrene	0.17	0.4	0.17	U
	Tetrachloroethane[1,1,2,2-]	0.15	0.4	0.15	U
	Tetrachloroethene	60	0.4	0.058	
	Toluene	0.16	0.4	0.14	J
	Trichloro-1,2,2-trifluoroethane[1,1,2-]	62	0.4	0.062	
	Trichlorobenzene[1,2,4-]	0.48	1	0.48	U
	Trichloroethane[1,1,1-]	0.24	0.4	0.14	J
	Trichloroethane[1,1,2-]	0.16	0.4	0.16	U
	Trichloroethene	36	0.4	0.06	
	Trichlorofluoromethane	10	0.4	0.12	
	Trimethylbenzene[1,2,4-]	0.16	0.4	0.16	U
	Trimethylbenzene[1,3,5-]	0.12	0.4	0.12	U
	Vinyl acetate	4.6	10	4.6	U
	Vinyl Chloride	0.082	0.4	0.082	U
	Xylene[1,2-]	0.14	0.4	0.14	U
	Xylene[1,3-]+Xylene[1,4-]	0.14	1	0.14	U
	Total Organics	210.52	NA	NA	

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-11

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV04 sampled at a depth of approximately 300 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV04-300 25-Apr-18 (Duplicate)	Acetone	5.5	10	5.2	J
	Benzene	0.23	0.4	0.14	J
	Benzyl Chloride	0.24	0.4	0.24	U
	Bromodichloromethane	0.19	0.4	0.19	U
	Bromoform	0.17	0.4	0.17	U
	Bromomethane	0.12	0.4	0.12	U
	Butanone[2-]	0.86	1	0.4	J
	Carbon Disulfide	0.24	1	0.24	U
	Carbon Tetrachloride	0.21	0.4	0.048	J
	Chlorobenzene	0.08	0.4	0.08	U
	Chlorodibromomethane	0.14	0.4	0.14	U
	Chloroethane	0.42	1	0.42	U
	Chloroform	0.23	0.4	0.1	J
	Chloromethane	0.5	1	0.5	U
	Dibromoethane[1,2-]	0.14	0.4	0.14	U
	Dichloro-1,1,2,2-tetrafluoroethane[1,2-]	0.14	0.4	0.14	U
	Dichlorobenzene[1,2-]	0.14	0.4	0.14	U
	Dichlorobenzene[1,3-]	0.16	0.4	0.16	U
	Dichlorobenzene[1,4-]	0.13	0.4	0.13	U
	Dichlorodifluoromethane	27	1	0.4	
	Dichloroethane[1,1-]	0.3	0.4	0.052	J
	Dichloroethane[1,2-]	0.13	0.4	0.13	U
	Dichloroethene[1,1-]	10	0.4	0.068	
	Dichloroethene[cis-1,2-]	0.074	0.4	0.074	U
	Dichloroethene[trans-1,2-]	0.15	0.4	0.15	U
	Dichloropropane[1,2-]	0.24	0.4	0.24	U
	Dichloropropene[cis-1,3-]	0.2	0.4	0.2	U
	Dichloropropene[trans-1,3-]	0.24	0.4	0.24	U
	Ethylbenzene	0.15	0.4	0.15	U
	Ethyltoluene[4-]	0.14	0.4	0.14	U
	Hexachlorobutadiene	0.16	0.4	0.16	U

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-11

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV04 sampled at a depth of approximately 300 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV04-300 25-Apr-18 (Duplicate)	Hexanone[2-]	0.84	1	0.84	U
	Methyl-2-pentanone[4-]	0.72	1	0.72	U
	Methylene Chloride	0.4	1	0.4	U
	Styrene	0.17	0.4	0.17	U
	Tetrachloroethane[1,1,2,2-]	0.15	0.4	0.15	U
	Tetrachloroethene	60	0.4	0.058	B
	Toluene	0.15	0.4	0.14	J
	Trichloro-1,2,2-trifluoroethane[1,1,2-]	72	0.4	0.062	
	Trichlorobenzene[1,2,4-]	0.48	1	0.48	U
	Trichloroethane[1,1,1-]	0.18	0.4	0.14	J
	Trichloroethane[1,1,2-]	0.16	0.4	0.16	U
	Trichloroethene	38	0.4	0.06	
	Trichlorofluoromethane	11	0.4	0.12	
	Trimethylbenzene[1,2,4-]	0.16	0.4	0.16	U
	Trimethylbenzene[1,3,5-]	0.12	0.4	0.12	U
	Vinyl acetate	4.6	10	4.6	U
	Vinyl Chloride	0.082	0.4	0.082	U
	Xylene[1,2-]	0.14	0.4	0.14	U
	Xylene[1,3-]+Xylene[1,4-]	0.14	1	0.14	U
	Total Organics	165.66	NA	NA	

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-12

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV04 sampled at a depth of approximately 400 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV04-400 25-Apr-18	Acetone	5.2	10	5.2	U
	Benzene	0.5	0.4	0.14	
	Benzyl Chloride	0.24	0.4	0.24	U
	Bromodichloromethane	0.19	0.4	0.19	U
	Bromoform	0.17	0.4	0.17	U
	Bromomethane	0.12	0.4	0.12	U
	Butanone[2-]	0.4	1	0.4	U
	Carbon Disulfide	0.87	1	0.24	J
	Carbon Tetrachloride	0.098	0.4	0.048	J
	Chlorobenzene	0.08	0.4	0.08	U
	Chlorodibromomethane	0.14	0.4	0.14	U
	Chloroethane	0.42	1	0.42	U
	Chloroform	0.19	0.4	0.1	J
	Chloromethane	0.5	1	0.5	U
	Dibromoethane[1,2-]	0.14	0.4	0.14	U
	Dichloro-1,1,2,2-tetrafluoroethane[1,2-]	0.14	0.4	0.14	U
	Dichlorobenzene[1,2-]	0.14	0.4	0.14	U
	Dichlorobenzene[1,3-]	0.16	0.4	0.16	U
	Dichlorobenzene[1,4-]	0.13	0.4	0.13	U
	Dichlorodifluoromethane	18	1	0.4	
	Dichloroethane[1,1-]	0.15	0.4	0.052	J
	Dichloroethane[1,2-]	0.13	0.4	0.13	U
	Dichloroethene[1,1-]	4.6	0.4	0.068	
	Dichloroethene[cis-1,2-]	0.085	0.4	0.074	J
	Dichloroethene[trans-1,2-]	0.15	0.4	0.15	U
	Dichloropropane[1,2-]	0.24	0.4	0.24	U
	Dichloropropene[cis-1,3-]	0.2	0.4	0.2	U
	Dichloropropene[trans-1,3-]	0.24	0.4	0.24	U
	Ethylbenzene	0.15	0.4	0.15	U
	Ethyltoluene[4-]	0.14	0.4	0.14	U
	Hexachlorobutadiene	0.16	0.4	0.16	U

B = Compound was found in the blank and sample

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-12

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV04 sampled at a depth of approximately 400 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV04-400 25-Apr-18	Hexanone[2-]	0.84	1	0.84	U
	Methyl-2-pentanone[4-]	0.72	1	0.72	U
	Methylene Chloride	0.4	1	0.4	U
	Styrene	0.17	0.4	0.17	U
	Tetrachloroethane[1,1,2,2-]	0.15	0.4	0.15	U
	Tetrachloroethene	68	0.4	0.058	B
	Toluene	0.16	0.4	0.14	J
	Trichloro-1,2,2-trifluoroethane[1,1,2-]	54	0.4	0.062	
	Trichlorobenzene[1,2,4-]	0.48	1	0.48	U
	Trichloroethane[1,1,1-]	0.15	0.4	0.14	J
	Trichloroethane[1,1,2-]	0.16	0.4	0.16	U
	Trichloroethene	34	0.4	0.06	
	Trichlorofluoromethane	6.6	0.4	0.12	
	Trimethylbenzene[1,2,4-]	0.16	0.4	0.16	U
	Trimethylbenzene[1,3,5-]	0.12	0.4	0.12	U
	Vinyl acetate	4.6	10	4.6	U
	Vinyl Chloride	0.082	0.4	0.082	U
	Xylene[1,2-]	0.14	0.4	0.14	U
	Xylene[1,3-]+Xylene[1,4-]	0.14	1	0.14	U
	Total Organics	187.4	NA	NA	

B = Compound was found in the blank and sample

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-13

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV05 sampled at a depth of approximately 50 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV05-50 25-Apr-18	Acetone	7.8	15	7.8	U
	Benzene	0.88	0.6	0.21	
	Benzyl Chloride	0.36	0.6	0.36	U
	Bromodichloromethane	0.28	0.6	0.28	U
	Bromoform	0.26	0.6	0.26	U
	Bromomethane	0.19	0.6	0.19	U
	Butanone[2-]	1.6	1.5	0.6	
	Carbon Disulfide	3.8	1.5	0.36	
	Carbon Tetrachloride	0.28	0.6	0.072	J
	Chlorobenzene	0.12	0.6	0.12	U
	Chlorodibromomethane	0.21	0.6	0.21	U
	Chloroethane	0.63	1.5	0.63	U
	Chloroform	1.3	0.6	0.16	
	Chloromethane	0.75	1.5	0.75	U
	Dibromoethane[1,2-]	0.21	0.6	0.21	U
	Dichloro-1,1,2,2-tetrafluoroethane[1,2-]	0.2	0.6	0.2	U
	Dichlorobenzene[1,2-]	0.21	0.6	0.21	U
	Dichlorobenzene[1,3-]	0.25	0.6	0.25	U
	Dichlorobenzene[1,4-]	0.2	0.6	0.2	U
	Dichlorodifluoromethane	41	1.5	0.6	
	Dichloroethane[1,1-]	1.7	0.6	0.078	
	Dichloroethane[1,2-]	0.19	0.6	0.19	U
	Dichloroethene[1,1-]	9.8	0.6	0.1	
	Dichloroethene[cis-1,2-]	0.55	0.6	0.11	J
	Dichloroethene[trans-1,2-]	0.22	0.6	0.22	U
	Dichloropropane[1,2-]	0.36	0.6	0.36	U
	Dichloropropene[cis-1,3-]	0.29	0.6	0.29	U
	Dichloropropene[trans-1,3-]	0.36	0.6	0.36	U
	Ethylbenzene	0.22	0.6	0.22	U
	Ethyltoluene[4-]	0.21	0.6	0.21	U
	Hexachlorobutadiene	0.25	0.6	0.25	U

B = Compound was found in the blank and sample

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-13

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV05 sampled at a depth of approximately 50 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV05-50 25-Apr-18	Hexanone[2-]	1.3	1.5	1.3	U
	Methyl-2-pentanone[4-]	1.1	1.5	1.1	U
	Methylene Chloride	0.6	1.5	0.6	U
	Styrene	0.26	0.6	0.26	U
	Tetrachloroethane[1,1,2,2-]	0.23	0.6	0.23	U
	Tetrachloroethene	41	0.6	0.087	B
	Toluene	0.21	0.6	0.21	U
	Trichloro-1,2,2-trifluoroethane[1,1,2-]	43	0.6	0.093	
	Trichlorobenzene[1,2,4-]	0.72	1.5	0.72	U
	Trichloroethane[1,1,1-]	14	0.6	0.2	
	Trichloroethane[1,1,2-]	0.23	0.6	0.23	U
	Trichloroethene	53	0.6	0.09	
	Trichlorofluoromethane	98	0.6	0.19	
	Trimethylbenzene[1,2,4-]	0.24	0.6	0.24	U
	Trimethylbenzene[1,3,5-]	0.17	0.6	0.17	U
	Vinyl acetate	6.9	15	6.9	U
	Vinyl Chloride	0.12	0.6	0.12	U
	Xylene[1,2-]	0.21	0.6	0.21	U
	Xylene[1,3-]+Xylene[1,4-]	0.21	1.5	0.21	U
	Total Organics	309.91	NA	NA	

B = Compound was found in the blank and sample

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-14

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV05 sampled at a depth of approximately 100 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV05-100 25-Apr-18	Acetone	10	20	10	U
	Benzene	0.28	0.8	0.28	U
	Benzyl Chloride	0.48	0.8	0.48	U
	Bromodichloromethane	0.38	0.8	0.38	U
	Bromoform	0.34	0.8	0.34	U
	Bromomethane	0.25	0.8	0.25	U
	Butanone[2-]	0.8	2	0.8	U
	Carbon Disulfide	0.7	2	0.48	J
	Carbon Tetrachloride	0.53	0.8	0.096	J
	Chlorobenzene	0.16	0.8	0.16	U
	Chlorodibromomethane	0.28	0.8	0.28	U
	Chloroethane	0.84	2	0.84	U
	Chloroform	2.1	0.8	0.21	
	Chloromethane	1	2	1	U
	Dibromoethane[1,2-]	0.28	0.8	0.28	U
	Dichloro-1,1,2,2-tetrafluoroethane[1,2-]	0.27	0.8	0.27	U
	Dichlorobenzene[1,2-]	0.28	0.8	0.28	U
	Dichlorobenzene[1,3-]	0.33	0.8	0.33	U
	Dichlorobenzene[1,4-]	0.26	0.8	0.26	U
	Dichlorodifluoromethane	62	2	0.8	
	Dichloroethane[1,1-]	3.4	0.8	0.1	
	Dichloroethane[1,2-]	0.25	0.8	0.25	U
	Dichloroethene[1,1-]	21	0.8	0.14	
	Dichloroethene[cis-1,2-]	1.3	0.8	0.15	
	Dichloroethene[trans-1,2-]	0.3	0.8	0.3	U
	Dichloropropane[1,2-]	0.48	0.8	0.48	U
	Dichloropropene[cis-1,3-]	0.39	0.8	0.39	U
	Dichloropropene[trans-1,3-]	0.48	0.8	0.48	U
	Ethylbenzene	0.29	0.8	0.29	U
	Ethyltoluene[4-]	0.28	0.8	0.28	U
	Hexachlorobutadiene	0.33	0.8	0.33	U

B = Compound was found in the blank and sample

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-14

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV05 sampled at a depth of approximately 100 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV05-100 25-Apr-18	Hexanone[2-]	1.7	2	1.7	U
	Methyl-2-pentanone[4-]	1.4	2	1.4	U
	Methylene Chloride	1	2	0.8	J
	Styrene	0.34	0.8	0.34	U
	Tetrachloroethane[1,1,2,2-]	0.3	0.8	0.3	U
	Tetrachloroethene	69	0.8	0.12	B
	Toluene	0.28	0.8	0.28	U
	Trichloro-1,2,2-trifluoroethane[1,1,2-]	86	0.8	0.12	
	Trichlorobenzene[1,2,4-]	0.96	2	0.96	U
	Trichloroethane[1,1,1-]	14	0.8	0.27	
	Trichloroethane[1,1,2-]	0.31	0.8	0.31	U
	Trichloroethene	110	0.8	0.12	
	Trichlorofluoromethane	130	0.8	0.25	
	Trimethylbenzene[1,2,4-]	0.32	0.8	0.32	U
	Trimethylbenzene[1,3,5-]	0.23	0.8	0.23	U
	Vinyl acetate	9.2	20	9.2	U
	Vinyl Chloride	0.16	0.8	0.16	U
	Xylene[1,2-]	0.28	0.8	0.28	U
	Xylene[1,3-]+Xylene[1,4-]	0.28	2	0.28	U
	Total Organics	501.03	NA	NA	

B = Compound was found in the blank and sample

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-15

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV05 sampled at a depth of approximately 200 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV05-200 25-Apr-18	Acetone	16	30	16	U
	Benzene	0.43	1.2	0.43	U
	Benzyl Chloride	0.72	1.2	0.72	U
	Bromodichloromethane	0.56	1.2	0.56	U
	Bromoform	0.52	1.2	0.52	U
	Bromomethane	0.37	1.2	0.37	U
	Butanone[2-]	1.2	3	1.2	U
	Carbon Disulfide	0.92	3	0.72	J
	Carbon Tetrachloride	1	1.2	0.14	J
	Chlorobenzene	0.24	1.2	0.24	U
	Chlorodibromomethane	0.43	1.2	0.43	U
	Chloroethane	1.3	3	1.3	U
	Chloroform	1.9	1.2	0.31	
	Chloromethane	1.5	3	1.5	U
	Dibromoethane[1,2-]	0.41	1.2	0.41	U
	Dichloro-1,1,2,2-tetrafluoroethane[1,2-]	0.41	1.2	0.41	U
	Dichlorobenzene[1,2-]	0.43	1.2	0.43	U
	Dichlorobenzene[1,3-]	0.49	1.2	0.49	U
	Dichlorobenzene[1,4-]	0.39	1.2	0.39	U
	Dichlorodifluoromethane	59	3	1.2	
	Dichloroethane[1,1-]	5.4	1.2	0.16	
	Dichloroethane[1,2-]	0.38	1.2	0.38	U
	Dichloroethene[1,1-]	40	1.2	0.2	
	Dichloroethene[cis-1,2-]	2.4	1.2	0.22	
	Dichloroethene[trans-1,2-]	0.44	1.2	0.44	U
	Dichloropropane[1,2-]	0.72	1.2	0.72	U
	Dichloropropene[cis-1,3-]	0.59	1.2	0.59	U
	Dichloropropene[trans-1,3-]	0.72	1.2	0.72	U
	Ethylbenzene	0.44	1.2	0.44	U
	Ethyltoluene[4-]	0.41	1.2	0.41	U
	Hexachlorobutadiene	0.49	1.2	0.49	U

B = Compound was found in the blank and sample

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-15

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV05 sampled at a depth of approximately 200 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV05-200 25-Apr-18	Hexanone[2-]	2.5	3	2.5	U
	Methyl-2-pentanone[4-]	2.2	3	2.2	U
	Methylene Chloride	3.2	3	1.2	
	Styrene	0.52	1.2	0.52	U
	Tetrachloroethane[1,1,2,2-]	0.46	1.2	0.46	U
	Tetrachloroethene	120	1.2	0.17	B
	Toluene	0.41	1.2	0.41	U
	Trichloro-1,2,2-trifluoroethane[1,1,2-]	150	1.2	0.19	
	Trichlorobenzene[1,2,4-]	1.4	3	1.4	U
	Trichloroethane[1,1,1-]	3.3	1.2	0.41	
	Trichloroethane[1,1,2-]	0.47	1.2	0.47	U
	Trichloroethene	180	1.2	0.18	
	Trichlorofluoromethane	78	1.2	0.37	
	Trimethylbenzene[1,2,4-]	0.48	1.2	0.48	U
	Trimethylbenzene[1,3,5-]	0.35	1.2	0.35	U
	Vinyl acetate	14	30	14	U
	Vinyl Chloride	0.25	1.2	0.25	U
	Xylene[1,2-]	0.43	1.2	0.43	U
	Xylene[1,3-]+Xylene[1,4-]	0.42	3	0.42	U
	Total Organics	645.12	NA	NA	

B = Compound was found in the blank and sample

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-15

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV05 sampled at a depth of approximately 200 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV05-200 25-Apr-18 (Duplicate)	Acetone	21	40	21	U
	Benzene	0.57	1.6	0.57	U
	Benzyl Chloride	0.96	1.6	0.96	U
	Bromodichloromethane	0.75	1.6	0.75	U
	Bromoform	0.69	1.6	0.69	U
	Bromomethane	0.5	1.6	0.5	U
	Butanone[2-]	1.6	4	1.6	U
	Carbon Disulfide	1.4	4	0.96	J
	Carbon Tetrachloride	0.99	1.6	0.19	J
	Chlorobenzene	0.32	1.6	0.32	U
	Chlorodibromomethane	0.57	1.6	0.57	U
	Chloroethane	1.7	4	1.7	U
	Chloroform	2.1	1.6	0.42	
	Chloromethane	2	4	2	U
	Dibromoethane[1,2-]	0.55	1.6	0.55	U
	Dichloro-1,1,2,2-tetrafluoroethane[1,2-]	0.54	1.6	0.54	U
	Dichlorobenzene[1,2-]	0.57	1.6	0.57	U
	Dichlorobenzene[1,3-]	0.66	1.6	0.66	U
	Dichlorobenzene[1,4-]	0.52	1.6	0.52	U
	Dichlorodifluoromethane	65	4	1.6	
	Dichloroethane[1,1-]	6	1.6	0.21	
	Dichloroethane[1,2-]	0.5	1.6	0.5	U
	Dichloroethene[1,1-]	45	1.6	0.27	
	Dichloroethene[cis-1,2-]	2.3	1.6	0.3	
	Dichloroethene[trans-1,2-]	0.59	1.6	0.59	U
	Dichloropropane[1,2-]	0.96	1.6	0.96	U
	Dichloropropene[cis-1,3-]	0.78	1.6	0.78	U
	Dichloropropene[trans-1,3-]	0.96	1.6	0.96	U
	Ethylbenzene	0.58	1.6	0.58	U
	Ethyltoluene[4-]	0.55	1.6	0.55	U
	Hexachlorobutadiene	0.66	1.6	0.66	U

B = Compound was found in the blank and sample

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-15

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV05 sampled at a depth of approximately 200 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV05-200 25-Apr-18 (Duplicate)	Hexanone[2-]	3.4	4	3.4	U
	Methyl-2-pentanone[4-]	2.9	4	2.9	U
	Methylene Chloride	3.6	4	1.6	J
	Styrene	0.69	1.6	0.69	U
	Tetrachloroethane[1,1,2,2-]	0.61	1.6	0.61	U
	Tetrachloroethene	130	1.6	0.23	B
	Toluene	0.55	1.6	0.55	U
	Trichloro-1,2,2-trifluoroethane[1,1,2-]	170	1.6	0.25	
	Trichlorobenzene[1,2,4-]	1.9	4	1.9	U
	Trichloroethane[1,1,1-]	3.6	1.6	0.54	
	Trichloroethane[1,1,2-]	0.62	1.6	0.62	U
	Trichloroethene	200	1.6	0.24	
	Trichlorofluoromethane	85	1.6	0.5	
	Trimethylbenzene[1,2,4-]	0.64	1.6	0.64	U
	Trimethylbenzene[1,3,5-]	0.46	1.6	0.46	U
	Vinyl acetate	18	40	18	U
	Vinyl Chloride	0.33	1.6	0.33	U
	Xylene[1,2-]	0.57	1.6	0.57	U
	Xylene[1,3-]+Xylene[1,4-]	0.56	4	0.56	U
	Total Organics	714.99	NA	NA	

B = Compound was found in the blank and sample

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-16

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV05 sampled at a depth of approximately 300 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV05-300 25-Apr-18	Acetone	10	20	10	U
	Benzene	0.28	0.8	0.28	U
	Benzyl Chloride	0.48	0.8	0.48	U
	Bromodichloromethane	0.38	0.8	0.38	U
	Bromoform	0.34	0.8	0.34	U
	Bromomethane	0.25	0.8	0.25	U
	Butanone[2-]	1.8	2	0.8	J
	Carbon Disulfide	7.1	2	0.48	
	Carbon Tetrachloride	0.88	0.8	0.096	
	Chlorobenzene	0.16	0.8	0.16	U
	Chlorodibromomethane	0.28	0.8	0.28	U
	Chloroethane	0.84	2	0.84	U
	Chloroform	0.49	0.8	0.21	J
	Chloromethane	1	2	1	U
	Dibromoethane[1,2-]	0.28	0.8	0.28	U
	Dichloro-1,1,2,2-tetrafluoroethane[1,2-]	0.27	0.8	0.27	U
	Dichlorobenzene[1,2-]	0.28	0.8	0.28	U
	Dichlorobenzene[1,3-]	0.33	0.8	0.33	U
	Dichlorobenzene[1,4-]	0.26	0.8	0.26	U
	Dichlorodifluoromethane	35	2	0.8	
	Dichloroethane[1,1-]	1.4	0.8	0.1	
	Dichloroethane[1,2-]	0.25	0.8	0.25	U
	Dichloroethene[1,1-]	28	0.8	0.14	
	Dichloroethene[cis-1,2-]	0.55	0.8	0.15	J
	Dichloroethene[trans-1,2-]	0.3	0.8	0.3	U
	Dichloropropane[1,2-]	0.48	0.8	0.48	U
	Dichloropropene[cis-1,3-]	0.39	0.8	0.39	U
	Dichloropropene[trans-1,3-]	0.48	0.8	0.48	U
	Ethylbenzene	0.29	0.8	0.29	U
	Ethyltoluene[4-]	0.28	0.8	0.28	U
	Hexachlorobutadiene	0.33	0.8	0.33	U

B = Compound was found in the blank and sample

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-16

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV05 sampled at a depth of approximately 300 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV05-300 25-Apr-18	Hexanone[2-]	1.7	2	1.7	U
	Methyl-2-pentanone[4-]	1.4	2	1.4	U
	Methylene Chloride	1	2	0.8	J
	Styrene	0.34	0.8	0.34	U
	Tetrachloroethane[1,1,2,2-]	0.3	0.8	0.3	U
	Tetrachloroethene	70	0.8	0.12	B
	Toluene	0.28	0.8	0.28	U
	Trichloro-1,2,2-trifluoroethane[1,1,2-]	130	0.8	0.12	
	Trichlorobenzene[1,2,4-]	0.96	2	0.96	U
	Trichloroethane[1,1,1-]	0.48	0.8	0.27	J
	Trichloroethane[1,1,2-]	0.31	0.8	0.31	U
	Trichloroethene	81	0.8	0.12	
	Trichlorofluoromethane	26	0.8	0.25	
	Trimethylbenzene[1,2,4-]	0.32	0.8	0.32	U
	Trimethylbenzene[1,3,5-]	0.23	0.8	0.23	U
	Vinyl acetate	9.2	20	9.2	U
	Vinyl Chloride	0.16	0.8	0.16	U
	Xylene[1,2-]	0.28	0.8	0.28	U
	Xylene[1,3-]+Xylene[1,4-]	0.28	2	0.28	U
	Total Organics	383.7	NA	NA	

B = Compound was found in the blank and sample

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-17

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV05 sampled at a depth of approximately 400 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV05-400 25-Apr-18	Acetone	5.2	10	5.2	U
	Benzene	0.38	0.4	0.14	J
	Benzyl Chloride	0.24	0.4	0.24	U
	Bromodichloromethane	0.19	0.4	0.19	U
	Bromoform	0.17	0.4	0.17	U
	Bromomethane	0.12	0.4	0.12	U
	Butanone[2-]	0.45	1	0.4	J
	Carbon Disulfide	0.46	1	0.24	J
	Carbon Tetrachloride	0.27	0.4	0.048	J
	Chlorobenzene	0.08	0.4	0.08	U
	Chlorodibromomethane	0.14	0.4	0.14	U
	Chloroethane	0.42	1	0.42	U
	Chloroform	0.25	0.4	0.1	J
	Chloromethane	0.5	1	0.5	U
	Dibromoethane[1,2-]	0.14	0.4	0.14	U
	Dichloro-1,1,2,2-tetrafluoroethane[1,2-]	0.14	0.4	0.14	U
	Dichlorobenzene[1,2-]	0.14	0.4	0.14	U
	Dichlorobenzene[1,3-]	0.16	0.4	0.16	U
	Dichlorobenzene[1,4-]	0.13	0.4	0.13	U
	Dichlorodifluoromethane	16	1	0.4	
	Dichloroethane[1,1-]	0.64	0.4	0.052	
	Dichloroethane[1,2-]	0.13	0.4	0.13	U
	Dichloroethene[1,1-]	8.4	0.4	0.068	
	Dichloroethene[cis-1,2-]	0.21	0.4	0.074	J
	Dichloroethene[trans-1,2-]	0.15	0.4	0.15	U
	Dichloropropane[1,2-]	0.24	0.4	0.24	U
	Dichloropropene[cis-1,3-]	0.2	0.4	0.2	U
	Dichloropropene[trans-1,3-]	0.24	0.4	0.24	U
	Ethylbenzene	0.15	0.4	0.15	U
	Ethyltoluene[4-]	0.14	0.4	0.14	U
	Hexachlorobutadiene	0.16	0.4	0.16	U

B = Compound was found in the blank and sample

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.

Table 3-17

Soil Vapor Quality Results: Volatile Organic Compounds (EPA Method TO-15)

Sandia National Laboratories/New Mexico Mixed Waste Landfill

New Mexico Environment Department DOE Oversight Bureau

April 2018

MWL-SV05 sampled at a depth of approximately 400 feet below ground surface

Trigger levels are 20,000 ppbv for PCE and TCE and 25,000 ppbv for total VOCs in samples collected from 400ft ports.

Monitoring Well/ Sample Depth	Analyte	Result (ppbv)	Laboratory Detection Limit (ppbv)	MDL (ppbv)	Laboratory Qualifier
MWL-SV05-400 25-Apr-18	Hexanone[2-]	0.84	1	0.84	U
	Methyl-2-pentanone[4-]	0.72	1	0.72	U
	Methylene Chloride	0.4	1	0.4	U
	Styrene	0.17	0.4	0.17	U
	Tetrachloroethane[1,1,2,2-]	0.15	0.4	0.15	U
	Tetrachloroethene	63	0.4	0.058	B
	Toluene	2.5	0.4	0.14	
	Trichloro-1,2,2-trifluoroethane[1,1,2-]	53	0.4	0.062	
	Trichlorobenzene[1,2,4-]	0.48	1	0.48	U
	Trichloroethane[1,1,1-]	0.47	0.4	0.14	
	Trichloroethane[1,1,2-]	0.16	0.4	0.16	U
	Trichloroethene	44	0.4	0.06	
	Trichlorofluoromethane	17	0.4	0.12	
	Trimethylbenzene[1,2,4-]	0.16	0.4	0.16	U
	Trimethylbenzene[1,3,5-]	0.12	0.4	0.12	U
	Vinyl acetate	4.6	10	4.6	U
	Vinyl Chloride	0.082	0.4	0.082	U
	Xylene[1,2-]	0.14	0.4	0.14	U
	Xylene[1,3-]+Xylene[1,4-]	0.14	1	0.14	U
	Total Organics	207.03	NA	NA	

B = Compound was found in the blank and sample

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NA = Not applicable

U = Indicates the analyte was analyzed for but not detected.