

Ramona, Kansas, Corrective Action Monitoring Report for 2014

Environmental Science Division



United States Department of Agriculture

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by
Applied Geosciences and Environmental Management Section
Environmental Science Division, Argonne National Laboratory

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Notation

AGEM	Applied Geosciences and Environmental Management
AMSL	above mean sea level
BGL	below ground level
°C	degree(s) Celsius
CAS	<i>Corrective Action Study</i>
CCC	Commodity Credit Corporation
CD	compact disc
EPA	U.S. Environmental Protection Agency
ft	foot (feet)
gal	gallon(s)
in.	inch(es)
KDHE	Kansas Department of Health and Environment
L	liter(s)
µg/L	microgram(s) per liter
µS/cm	microsiemen(s) per centimeter
mg/L	milligram(s) per liter
mi	mile(s)
min	minute
mV	millivolt(s)
RWD	Marion County Rural Water District #1
TOC	top of casing
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
VOC	volatile organic compound

Ramona, Kansas, Corrective Action Monitoring Report for 2014

1 Introduction and Background

This report describes groundwater monitoring in 2014 for the property at Ramona, Kansas, on which a grain storage facility was formerly operated by the Commodity Credit Corporation of the U.S. Department of Agriculture (CCC/USDA). The monitoring was implemented on behalf of the CCC/USDA by Argonne National Laboratory and was conducted as specified in the *Long-Term Groundwater Monitoring Plan* (Argonne 2012) approved by the Kansas Department of Health and Environment (KDHE 2012).

Background information and details of the Ramona site investigation and the Ramona *Corrective Action Study* (CAS) were presented previously (Argonne 2005, 2007, 2011). The procedures followed for the monitoring activities in 2014 are described in the *Master Work Plan* (Argonne 2002) and the site-specific *Long-Term Groundwater Monitoring Plan* (Argonne 2012). The monitoring plan specifies sampling in years 1, 2, 3, 5, and 10 following that document's issuance.

Ramona, Kansas, is a small rural town with 187 residents (2010 Census). Located in the north-central portion of Marion County, Ramona is 104 mi southwest of Topeka, Kansas, in the SE 1/4 of Section 2, Township 17 South, Range 3 East (Figure 1.1). Grain storage has occurred over the years at multiple locations in Ramona, including the former CCC/USDA facility and the facility operated by the Agri Producers, Inc., of Tampa, Kansas (the co-op). The co-op operates on the opposite side of the railroad right-of-way from the former CCC/USDA facility (Figure 1.2).

The former CCC/USDA facility operated from 1950 to 1966 on one acre of leased land in the southeastern part of Ramona. No structures remain on the property. The land is currently used for agriculture. The property (Figure 1.2) is privately owned by the Noeth family (who reside at 506 East First Street, outside the former grain storage facility) and is located within the Ramona municipal boundaries. For tax purposes, the property is zoned residential.

The principal water source for Ramona residents, including the Noeth family, is the Marion County Rural Water District #1 (the RWD). This public water supply was installed in

1995 with funding provided under an emergency grant by the USDA Farmers Home Administration.

Groundwater contamination resulting from grain storage activities has been detected at both the former CCC/USDA facility and the co-op, as summarized previously (Argonne 2005). Sources of the groundwater contamination associated with the co-op are under investigation. Studies by the CCC/USDA (Argonne 2007, 2011) indicated that the concentrations of carbon tetrachloride in groundwater that can potentially be attributed to past CCC/USDA activities are localized and isolated from groundwater being impacted by the co-op. In 2006, an investigation by the KDHE (with split sampling by Argonne) confirmed source areas for carbon tetrachloride and fuel contamination within the co-op property, upgradient from the former CCC/USDA facility, but found no evidence for contamination between the co-op property and the former CCC/USDA property (KDHE 2006).

Consistent with recommendations in the Ramona CAS (Argonne 2011) and the KDHE's *Agency Decision Statement* (KDHE 2011), one element of the remedial action selected to address groundwater at the former CCC/USDA facility is groundwater monitoring, as described in the *Long-Term Groundwater Monitoring Plan* (Argonne 2012). The results of monitoring for wells MW04-MW08 in 2012 and 2013 were reported previously (Argonne 2013, 2014). This present report documents the results of the third year's monitoring in 2014. This optional monitoring (Argonne 2012) was conducted because of changes in the monitoring network in late 2013-early 2014. Sampling of the approved monitoring well network and one private water well was conducted on November 24-25, 2014, while sampling of one monitoring well prior to its removal at the request of the property owner was conducted on January 22-23, 2014 (Argonne 2014).

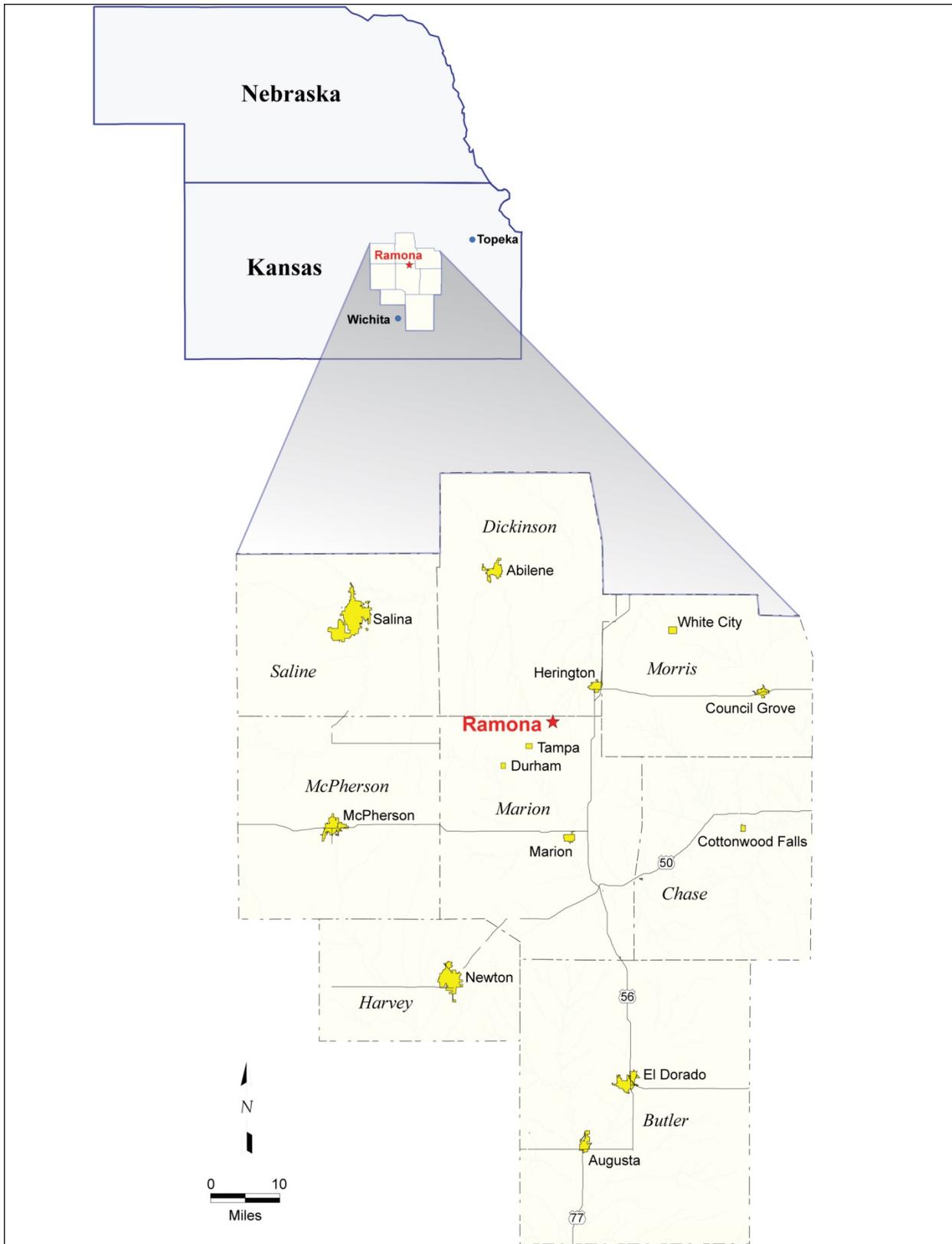


FIGURE 1.1 Location of Ramona, Kansas.

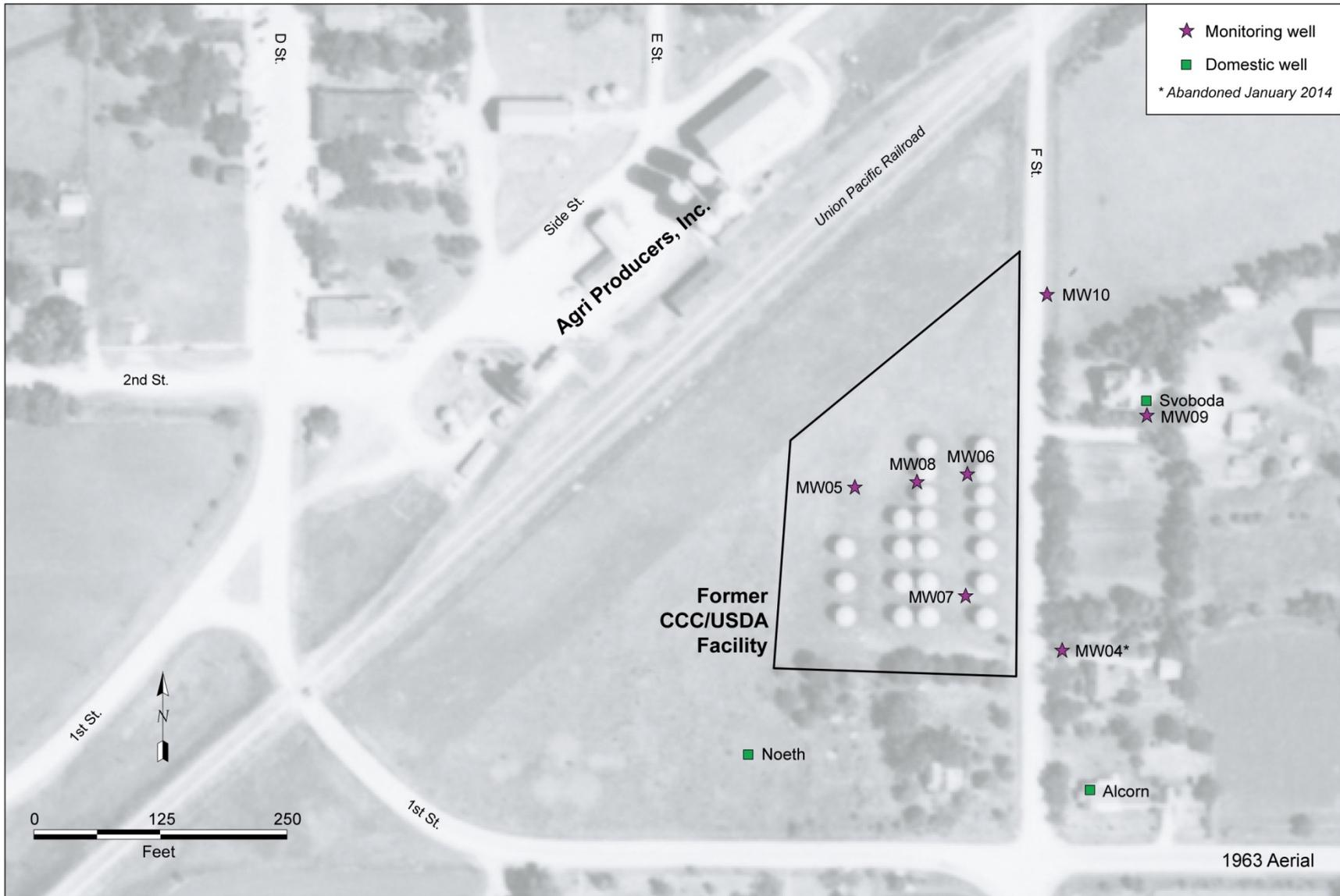


FIGURE 1.2 Boundary of the former CCC/USDA property and locations of monitoring wells MW04-MW10 and the private wells evaluated in 2014. Source of photograph: USGS (1963).

2 Sampling and Analysis in 2014

2.1 Measurement of Groundwater Levels

Groundwater levels were measured continuously from July 2006 to November 2010 in wells MW04, MW05, MW06, MW07, and MW08 (Figure 1.2). The results demonstrated that groundwater flow is predominantly toward the north and northeast beneath the portion of the former CCC/USDA facility impacted by carbon tetrachloride contamination. In the wider area, water level contours constructed by the KDHE (2006) and by Argonne (2011) also showed that groundwater flow is toward the north and northwest in the vicinity of the co-op property, as well as across much of the area to the west and northwest of the former CCC/USDA facility (Figure 2.12 in Argonne 2011).

Groundwater levels are now measured manually in conjunction with sampling activities, the direction of groundwater flow having been established through prior investigation. In 2014, water levels were measured in monitoring wells MW04-MW10, as discussed in Section 3.1. The water level measurement at MW04 in January 2014 was the last reading prior to the well's abandonment by Argonne at the request of new property owner Billy Alcorn (Argonne 2014). The water levels at MW05-MW10 were measured again during the monitoring event in November 2014.

2.2 Well Sampling and Analyses

Groundwater samples were collected from monitoring wells MW05-MW10 and the Noeth private well on November 24-25, 2014. Monitoring well MW04 was sampled for a final time on January 22-23, 2014, prior to its removal on January 23, 2014 (Section 2.3). During the November 2014 event, purged samples could not be collected from monitoring wells MW06 and MW09 because of insufficient water recovery in these wells. Per the sampling procedures for monitoring wells outlined in the *Long-Term Groundwater Monitoring Plan* (Argonne 2012), the first, unpurged grab samples from MW06 and MW09 were used instead for analysis.

Neither the Alcorn (formerly Riddle) well nor the Svoboda (formerly Buxman) well was sampled during the November 2014 monitoring event. Alcorn refused access for sampling of the private well on his property. The Svoboda private well is no longer part of the monitoring

network because of its poor condition; it was replaced in the monitoring network by well MW09 in January 2014, and well MW10 was added (Section 2.3). The well locations sampled in November 2014 are shown in Figure 2.1. Construction information for these wells is in Table 2.1. A chronological summary of the field activities in 2014 is in Appendix A, Table A.1.

Before implementation of the sampling procedure specified in the *Long-Term Groundwater Monitoring Plan* (Argonne 2012), the depth to groundwater and the total depth of each well were measured manually, to within 0.01 ft, from the top of the well casing. After these measurements, the monitoring wells were purged and sampled as specified (Section 3.3.1 in Argonne 2012). The Noeth private well was sampled at its faucet after purging for 5 min (Table A.1 in Appendix A). The field measurements for the groundwater samples are in Appendix A, Table A.2.

Groundwater samples designated for analyses for volatile organic compounds (VOCs) were collected in appropriate laboratory containers, labeled, packaged, and chilled to 4°C by placement in ice-filled coolers. The samples were shipped overnight to the Applied Geosciences and Environmental Management (AGEM) Laboratory at Argonne for VOCs analyses with U.S. Environmental Protection Agency (EPA) Method 524.2 (EPA 1995). Aliquots of selected samples (chosen in the field) were also shipped to TestAmerica Laboratories, Inc., South Burlington, Vermont, for verification VOCs analyses according to EPA Contract Laboratory Program protocols.

The analytical results are presented and discussed in Section 3.2.

2.3 Modifications to the Monitoring Well Network

In response to a KDHE (2013) request to expand the monitoring well network at Ramona, the CCC/USDA inspected the Svoboda private well with a downhole camera in September 2013 to determine the feasibility of monitoring VOCs concentrations in this well. The inspection indicated that the poor condition of the well made it unsuitable for monitoring. Therefore, the CCC/USDA submitted a work plan for monitoring well installation (Appendix B in Argonne 2014).

Permission was obtained from Svoboda for the installation of two additional wells on his property, east of the former CCC/USDA facility. Wells MW09 and MW10 were installed on December 17-19, 2013, at the locations shown in Figure 1.2, with KDHE (2014a) approval. A replacement pump was provided for the existing Svoboda private well, so that the homeowner could continue to use the well for lawn and garden watering. Both wells MW09 and MW10 were completed with flush mounts and were screened at 45-55 ft below ground level (BGL). The wells were developed during the subsequent field visit in January 2014 because of slow water recovery. Well registration was completed (Argonne 2014).

In early January 2014, Argonne learned that the property formerly owned by Riddle had been purchased by Billy Alcorn, who indicated his intention to remove MW04. The CCC/USDA offered to remove MW04 as a courtesy. With Alcorn's permission, Argonne field staff removed the concrete and flush mount from MW04 on January 22, 2014, then plugged the well and pulled the casing on January 23, 2014. The surface was backfilled with native material. Registration of the abandonment was completed (Argonne 2014). During the January 2014 site visit, wells MW09 and MW10 were developed.

Homeowners Alcorn, Noeth, and Svoboda indicated in December 2013-January 2014 that no additional monitoring well installations will be permitted on their respective properties.

2.4 Private Well Evaluations

The use and condition of the Alcorn, Noeth, and Svoboda private wells were evaluated, as requested by the KDHE (2014b). The results are presented in Section 3.3.

2.5 Handling and Disposal of Investigation-Derived Waste

Currently, no investigation-derived waste from the Ramona site requires disposal. Approximately 0.5 gal of purge water from the installation, development, and sampling of wells MW09 and MW10 in December 2013 and January 2014 was containerized on-site. During the annual monitoring event in November 2014, however, field staff observed that the storage container was empty, the purge water having evaporated during the intervening ten months. During the November 2014 sampling event, water levels at the site were very low. Field staff were able to collect enough water from the monitoring network wells to fill sample vials. The

small amount of purge water collected was retained for storage of meter probes (which need to be immersed in natural groundwater to remain fresh). Therefore, disposal of purge water was not required.

2.6 Quality Control for Sample Collection, Handling, and Analysis

Quality assurance/quality control procedures followed during the November 2014 monitoring event are described in detail in the *Master Work Plan* (Argonne 2002). The results are summarized as follows:

- Sample collection and handling activities were monitored by the documentation of samples as they were collected and the use of chain-of-custody forms and custody seals to ensure sample integrity during handling and shipment.
- Samples designated for VOCs analyses were received with custody seals intact and at the appropriate preservation temperature. All samples sent to the AGEM Laboratory were analyzed within the required holding times.
- Quality control samples collected to monitor sample-handling activities (a trip blank and an equipment rinsate) and method blanks analyzed with the samples to monitor analytical methodologies were all free of carbon tetrachloride and chloroform contamination. Analytical results for quality control samples collected to monitor sample-handling activities are in Appendix B, Table B.1.
- Groundwater samples were analyzed for VOCs at the AGEM Laboratory by the purge-and-trap method on a gas chromatograph-mass spectrometer system. Calibration checks analyzed with each sample delivery group were required to be within $\pm 20\%$ of the standard. Surrogate standard determinations performed on samples and blanks were within the specified range of 80-120% for all samples, in either the initial analysis or a successful reanalysis.

- Results from the AGEM Laboratory for duplicate analyses of two groundwater samples are in Appendix B, Table B.1. The results of the dual analyses compare well, with relative percent difference values for carbon tetrachloride and chloroform of approximately 14% and 12%, respectively, for the sample from MW06 (the only detections), indicating consistency in the sampling and analytical methodologies.
- In accordance with the procedures defined in the *Master Work Plan* (Argonne 2002), groundwater samples were submitted to a second laboratory (TestAmerica) for verification analysis according to the protocols of the EPA's Contract Laboratory Program. Documentation is in Supplement 1 (on the compact disc [CD] inside the back cover of this report). The results from TestAmerica are summarized in Appendix B, Table B.2. The TestAmerica results support the results from the AGEM Laboratory. Neither laboratory detected carbon tetrachloride or chloroform in the samples from the Noeth private well or MW10, or in trip blank RAQCTB-W-36391, while both laboratories detected carbon tetrachloride at similar concentrations in the samples from MW08. Neither laboratory detected chloroform in the sample from MW08. Trace detections of methylene chloride were detected by TestAmerica in all three samples and the trip blank; however, these results are marked with a B qualifier because methylene chloride was also detected in an associated laboratory blank.

TABLE 2.1 Construction details for monitoring wells designated for sampling in November 2014.

Well	Kansas Registration Number ^a	Diameter (in.)	Depth (ft BGL)			Casing Elevation (ft AMSL)
			Screen Interval	Filter Pack Interval	Total	
MW05	393241	1	45-55	44-55	55	1435.19
MW06	392883	1	45-55	44-55	55	1436.63
MW07	392884	1	45-55	44-55	55	1438.15
MW08	392885	1	45-55	44-55	55	1435.72
MW09	474255	1	45-55	42-55	55	1437.90
MW10	474256	1	45-55	42-55	55	1435.08

^a Registration number in the Kansas Geological Survey well registration database.

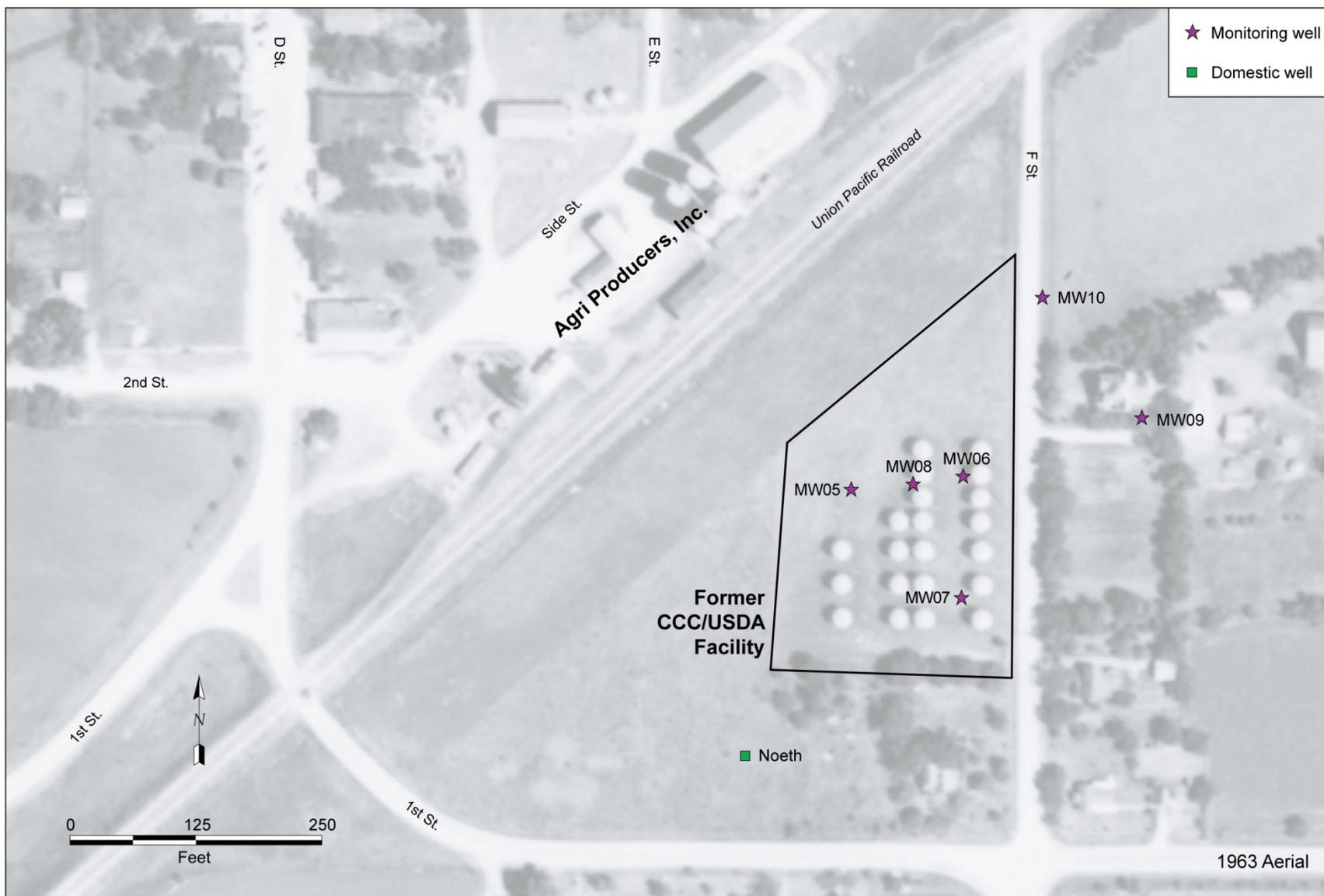


FIGURE 2.1 Locations of the wells sampled in November 2014. Source of photograph: USGS (1963).

3 Results and Discussion

3.1 Groundwater Level Data

Manual water level measurements taken during sampling on January 22, 2014, and November 24, 2014, are in Table 3.1, along with manual measurements made on October 9-10, 2013, and April 27, 2009, for comparison. Figure 3.1 illustrates the potentiometric surface in the immediate vicinity of the former CCC/USDA property, for data collected on November 24, 2014. The map indicates a predominant direction of groundwater flow to the north and northeast across the portion of the former CCC/USDA facility in which groundwater contamination has been identified, consistent with earlier findings (Argonne 2011, 2013, 2014).

The groundwater “low” centered on well MW06 (Figure 3.1) has become more apparent with the addition of MW09 and MW10 to the water level monitoring network, but it is not a new feature (Argonne 2011, 2013, 2014). The physical basis for this feature is unclear.

The higher water levels observed at MW09 and MW10 suggest southward groundwater flow in the area north of the observed carbon tetrachloride contamination. This flow direction would appear to provide a natural barrier to further expansion of the plume toward the north.

3.2 Analytical Results for Volatile Organic Compounds in Groundwater Samples and Lateral Extent of the Contaminants

The analytical data for VOCs in the groundwater samples collected in 2014 are in Table 3.2, together with data for previous sampling events. The highest concentration of carbon tetrachloride in 2014 was found at well MW07 (located in the southeast portion of the former CCC/USDA facility and screened at 45-55 ft BGL). In MW07, carbon tetrachloride was detected at 20 µg/L in November 2014, compared to concentrations of 10-15 µg/L in 2009-2013. Similarly, the concentration in MW06 (located near the eastern edge of the former facility) was 15 µg/L, higher than values of 2.4-8.2 µg/L in 2009-2013.

The lateral extent of carbon tetrachloride in groundwater in November 2014 (Figure 3.1) is similar to the extent in 2009 (Figure 3.2). Carbon tetrachloride was not detected in the Noeth private well in November 2014. Although the Svoboda private well is no longer sampled as part

of the monitoring network, newly installed MW09 replaces this monitoring point. The November 2014 carbon tetrachloride detection at MW09 (1.1 µg/L) is consistent with that in October 2013 at the Svoboda private well (1.4 µg/L; Argonne 2014). These carbon tetrachloride levels remain similar to those observed historically in the vicinity of the Svoboda well (Argonne 2005); in June 1994, carbon tetrachloride was detected in the Buxman (now Svoboda) private well at 2.2 µg/L (on-site analysis) and 1.7 µg/L (off-site analysis). Carbon tetrachloride was not detected at MW10 in 2014, constraining the limit of the contamination in the north.

The lateral extent of chloroform in groundwater in 2014 is also similar to that during previous sampling events. The highest concentration of chloroform in sitewide sampling has consistently been found at well MW07 (1.2-2.1 µg/L; Table 3.2), in the southeastern portion of the former CCC/USDA facility. In the vicinity of the Svoboda private well, chloroform was not detected in MW09 in November 2014, although a trace concentration of chloroform was detected in the Svoboda well in October 2013 (Table 3.2). In June 1994, chloroform was not detected in the Buxman (now Svoboda) private well (Argonne 2005).

3.3 Results of Private Well Evaluations

Information collected regarding the use and condition of the Alcorn (formerly Riddle and Bura; DW46), Noeth (DW45), and Svoboda (formerly Buxman; DW47) private wells is summarized in Table 3.3.

TABLE 3.1 Hand-measured groundwater levels.

Well	Reference Elevation ^a (ft AMSL)	April 27, 2009		October 9-10, 2013		January 17, 2014		November 24, 2014	
		Depth to Water (ft TOC)	Water Level Elevation (ft AMSL)	Depth to Water (ft TOC)	Water Level Elevation (ft AMSL)	Depth to Water (ft TOC)	Water Level Elevation (ft AMSL)	Depth to Water (ft TOC)	Water Level Elevation (ft AMSL)
MW04 ^{b,c}	1439.52	46.00	1393.52	50.70	1388.82	53.30	1386.22	–	–
MW05 ^b	1435.19	46.70	1388.49	46.07	1389.12	49.18	1386.01	51.02	1384.17
MW06 ^b	1436.63	49.20	1387.43	49.05	1387.58	51.83	1384.80	53.69	1382.94
MW07 ^b	1438.15	49.20	1388.95	48.85	1389.30	52.00	1386.15	53.45	1384.70
MW08 ^b	1435.72	47.00	1388.72	46.32	1389.40	49.50	1386.22	51.15	1384.57
MW09 ^d	1437.90	–	–	–	–	51.95	1385.95	53.65	1384.25
MW10 ^d	1435.08	–	–	–	–	46.70	1388.38	47.23	1387.85
Svoboda ^e	1439.40	–	–	51.00	1388.40	–	–	–	–

^a Reference elevation is the top of the well's casing.

^b Reference elevation from survey associated with 2006 site investigation (Argonne 2007).

^c Well MW04 abandoned in January 2014, at the request of the property owner (Argonne 2014).

^d Reference elevation is based on transit shots on December 18, 2013, comparing the tops of the MW05, MW06, and MW08 casings with the top of the MW09 or MW10 casing.

^e Reference elevation is based on transit shots on November 15, 2013, comparing the tops of the MW04-MW08 casings with the top of the concrete around the Svoboda well pit. Svoboda well was replaced in the monitoring network by MW09 and MW10 in December 2013 (Argonne 2014).

TABLE 3.2 Analytical results for volatile organic compounds in groundwater samples.^a

Location	Sample	Sample Date	Depth (ft BGL)		Concentration (µg/L)		
			Screen Interval	Groundwater	Carbon Tetrachloride	Chloroform	Methylene Chloride
MW04	RATI16-W-21449	07/13/06	45-55	51	ND ^b	ND	ND
MW04	RAMW4-W-21466	04/27/09	45-55	46	ND	ND	ND
MW04	RAMW4-W-21472	04/28/09	45-55	–	ND	ND	ND
MW04	RAMW4-W-21495	10/11/12	45-55	51	ND	ND	ND
MW04	RAMW4-W-36359	10/10/13	45-55	51	0.4 J ^c	ND	ND
MW04	RAMW4-W-36373	01/23/14	45-55	53	ND	ND	ND
MW04	Not sampled ^d	11/25/14	–	–	–	–	–
MW05	RATI17-W-21450	07/13/06	45-55	47	0.9 J	0.3 J	ND
MW05	RAMW5-W-21467	04/27/09	45-55	47	2.1	ND	ND
MW05	RAMW5-W-21473	04/28/09	45-55	–	1.7	0.4 J	ND
MW05	RAMW5-W-21496	10/10/12	45-55	49	1.3	0.5 J	ND
MW05	RAMW5-W-36360	10/09/13	45-55	46	3.2	1.3	ND
MW05	RAMW5-W-36383	11/25/14	45-55	51	1.2	ND	ND
MW06	RATI18-W-21452	07/13/06	45-55	50	1.8	1.1	ND
MW06	RAMW6-W-21468	04/27/09	45-55	49	1.5	ND	ND
MW06	RAMW6-W-21474	04/28/09	45-55	–	2.4	0.3 J	ND
MW06	RAMW6-W-21497	10/11/12	45-55	51	8.2	1.0	ND
MW06	RAMW6-W-36361	10/09/13	45-55	49	6.5	0.8 J	ND
MW06	RAMW6GRAB-W-36378 ^e	11/24/14	45-55	54	15	1.7	ND
MW07	RATI19-W-21453	07/13/06	45-55	50	6.3	1.6	ND
MW07	RAMW7-W-21469	04/27/09	45-55	49	12	1.7	ND
MW07	RAMW7-W-21475	04/28/09	45-55	–	10	1.7	ND
MW07	RAMW7-W-21498	10/11/12	45-55	52	15	1.2	ND
MW07	RAMW7-W-36362	10/10/13	45-55	49	11	1.4	ND
MW07	RAMW7-W-36385	11/25/14	45-55	53	20	2.1	ND
MW08	RATI20-W-21451	07/13/06	45-55	47	0.7 J	ND	ND
MW08	RAMW8-W-21470	04/27/09	45-55	47	ND	ND	ND
MW08	RAMW8-W-21476	04/28/09	45-55	–	0.8 J	ND	ND
MW08	RAMW8-W-21499	10/10/12	45-55	49	1.0	ND	ND
MW08	RAMW8-W-36363	10/09/13	45-55	46	1.5	0.4 J	ND
MW08	RAMW8-W-36386	11/24/14	45-55	51	1.4	ND	ND

TABLE 3.2 (Cont.)

Location	Sample	Sample Date	Depth (ft BGL)		Concentration (µg/L)		
			Screen Interval	Groundwater	Carbon Tetrachloride	Chloroform	Methylene Chloride
MW09	RAMW9-W-36374	01/23/14	45-55	52	0.7 J	ND	ND
MW09	RAMW9GRAB-W-36381 ^f	11/24/14	45-55	54	1.1	ND	ND
MW10	RAMW10-W-36375	01/23/14	45-55	46	ND	ND	ND
MW10	RAMW10-W-36388	11/25/14	45-55	47	ND	ND	ND
Riddle (formerly Bura)	RARIDDLE-W-21503	10/10/12	–	–	ND	ND	ND
Riddle (formerly Bura)	RARIDDLE-W-36366	10/09/13	–	–	ND	ND	ND
Alcorn (formerly Riddle)	Not sampled ^g	11/25/14	–	–	–	–	–
Noeth	RANOETH-W-21501	10/10/12	–	–	ND	ND	ND
Noeth	RANOETH-W-36365	10/09/13	–	–	ND	ND	ND
Noeth	RANOETH-W-36390	11/25/14	–	–	ND	ND	ND
DW47 (Buxman)	RADW47-W-02137	06/11/94	–	–	2.2	ND	ND
Svoboda (formerly Buxman)	Not sampled ^h	10/10/12	–	–	–	–	–
Svoboda (formerly Buxman)	RASVOBODA-W-36368	10/10/13	–	–	1.4	0.4 J	ND
Svoboda (formerly Buxman)	Not sampled ^h	11/25/14	–	–	–	–	–

See next page for footnotes.

TABLE 3.2 (Cont.)

- a Because of the low productivity of the monitoring wells at Ramona, the following sampling strategy was used in April 2009: (1) a sample of the water available in each well casing was obtained; (2) the well was purged of three well volumes or to the extent possible; and (3) a second sample was collected after the well had recovered.
- b ND, compound analyzed for but not detected at a level greater than or equal to the method detection limit ($< 1 \mu\text{g/L}$).
- c J, compound identified with an estimated concentration between the instrument detection limit and the method detection limit.
- d Well MW04 abandoned after sampling in January 2014, at the request of the property owner (Argonne 2014).
- e Well went dry after collection of a grab sample on 11/24/14, prior to purging; insufficient recovery overnight to collect a purged sample on 11/25/14.
- f Well went dry after collection of a grab sample and purging of one volume on 11/24/14; insufficient recovery overnight to collect a sample on 11/25/14.
- g Private well not sampled. Access denied by new property owner (Argonne 2014).
- h Pump in Svoboda (formerly Buxman) private well not operational in 2012 sampling. Permission to sample and replace the pump obtained prior to October 2013 sampling event. Because of its poor condition, well was replaced in monitoring network by MW09 in December 2013, and MW10 was added (Argonne 2014).

TABLE 3.3 Evaluation results for private wells.

Well	Depth (ft BGL)	Date of Last Sampling	Owner on Date of Last Sampling	Current Owner	Well Location	Use and Condition
DW46 (formerly Bura)	Unknown	10/09/13	B. Riddle	B. Alcorn	102 N. F Street, Ramona, KS 67475	Alcorn purchased the property from Riddle between October 2013 and January 2014. The home on the property was connected to the RWD. The domestic well was located in the back part of the home (under a cellar door); it was never used for any purpose by Riddle. Alcorn informed Argonne in January 2014 that he was razing the house and everything else on the property, including the old domestic well. Alcorn will no longer be allowing access to the property. The house and well awaited demolition in late 2014.
Noeth (DW45)	Unknown	11/25/14	B. and J. Noeth	No change	506 E. 1st Street, Ramona, KS 67475	The home on the property is connected to the RWD. The residents receive all potable water from the RWD and use the private well only for non-drinking purposes. The private well is in the basement, and samples are collected from a faucet on the south side of the home.
DW47 (formerly Buxman)	Unknown	10/10/13	A. and S. Svoboda	No change	501 N. A Street, Ramona, KS 67475	The private well was determined to be in poor condition and unsuitable for monitoring after inspection with a downhole camera in September 2013. As a result, the well will no longer be sampled as part of the monitoring network. However, Argonne provided a replacement pump at the request of the property owner. In return, the owner agreed to allow access for installation of additional monitoring wells on the property and for future sampling. The owner wants to be able to continue to use the old domestic well for non-drinking purposes. The home is rented and is connected to the RWD.

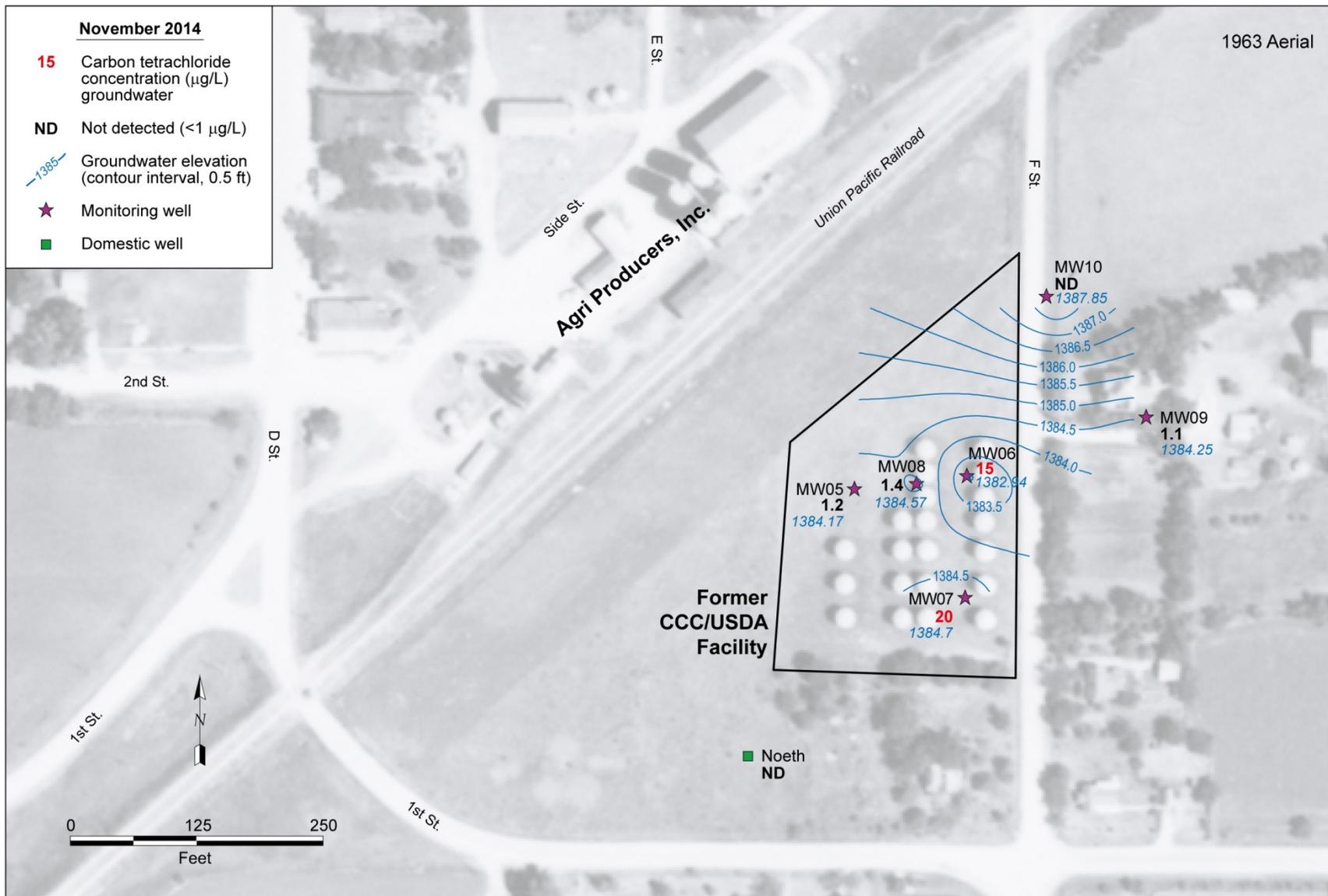


FIGURE 3.1 Distribution of carbon tetrachloride in groundwater samples collected in November 2014, with potentiometric surface interpreted from manual groundwater level measurements made on November 24, 2014. Source of photograph: USGS (1963).

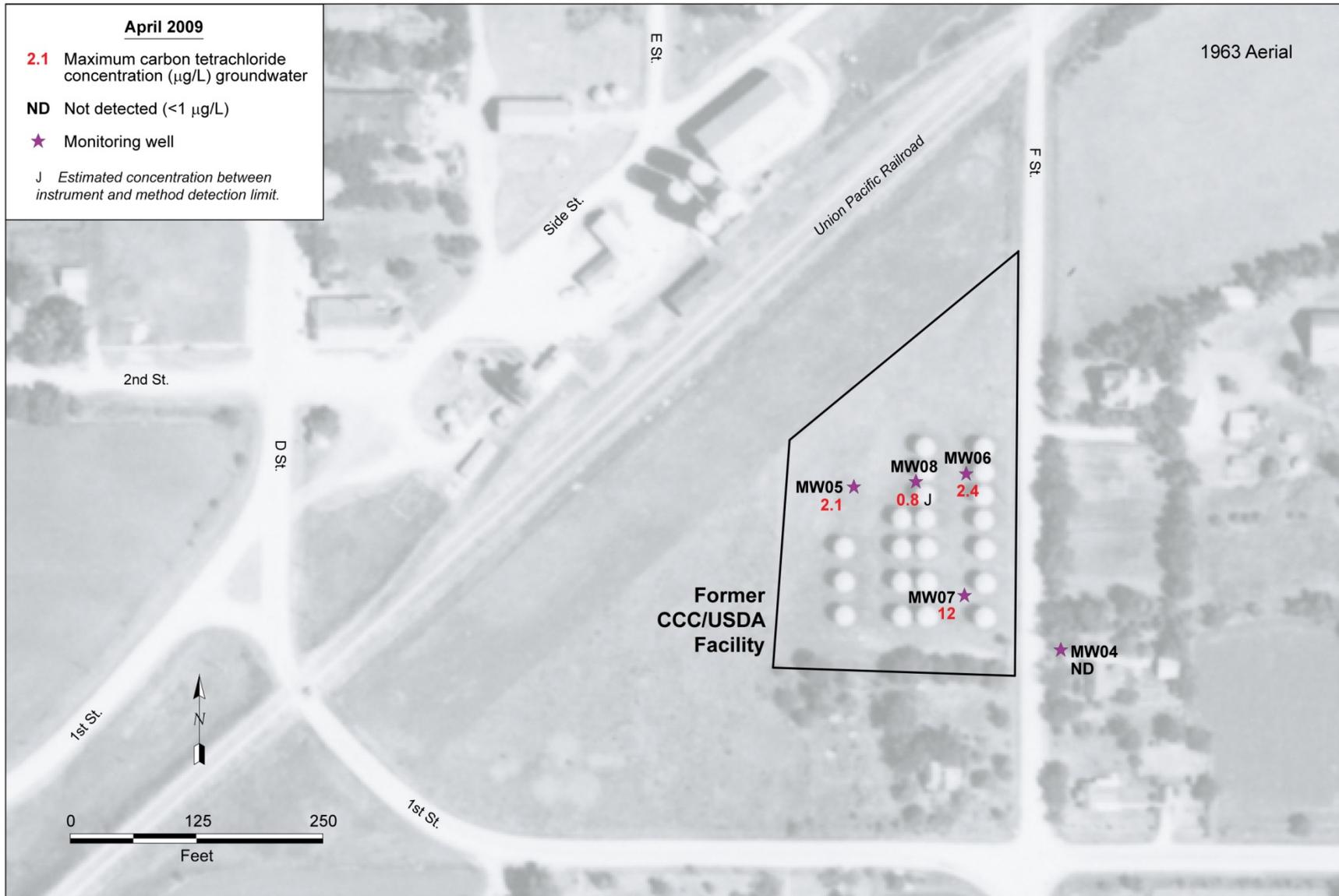


FIGURE 3.2 Maximum carbon tetrachloride concentrations detected in groundwater in April 2009. Source of photograph: USGS (1963).

4 Conclusions and Recommendations

4.1 Conclusions

The findings of the 2014 activities at Ramona support the following conclusions:

- The site and the groundwater flow direction are well-characterized. The potentiometric surface and groundwater flow direction determined in 2014 remain consistent with previous findings.
- The contamination on the former CCC/USDA property appears to be confined in proximity to the property boundaries. To date, carbon tetrachloride concentrations exceeding the MCL for this contaminant (5.0 µg/L) have been detected at only two locations (MW06 and MW07) on the property. Carbon tetrachloride at unacceptable levels has not been detected at the remaining long-term monitoring points, within or outside the former facility boundaries.
- November 2014 results at MW09 (east of the former CCC/USDA facility) were consistent with concentrations observed previously in the Svoboda private well, which historically showed low concentrations of contamination. No contamination was detected at MW10, northeast of the former facility. No evidence has been found to suggest that the contaminated area is expanding. Continued sampling at new monitoring wells MW09 and MW10 will confirm the apparent stability of the contamination boundary to the east and northeast of the former facility.
- Although the VOCs concentrations at on-site wells MW05 and MW08 have been consistent since 2006, the levels in on-site wells MW06 and MW07 have fluctuated above the MCL and showed increases in 2014.
- The owners of the three properties on which monitoring wells are/have been located have stated their intention not to allow additional installations on their properties. In addition, monitoring well MW04 was abandoned in January 2014, at the request of property owner Alcorn.

- The evaluations of the Noeth (DW45) and Svoboda (formerly Buxman; DW47) private wells indicated that these wells have not been used for drinking purposes for several years, and the homes on the properties are connected to the rural water district. Both Noeth and Svoboda have stated that they intend to use water from their private wells only for non-drinking water purposes in the future. The Alcorn house and private well (formerly Riddle; DW46) are to be razed, though the house was still on the property in late 2014.

4.2 Recommendations

The findings of the 2014 monitoring support the following recommendations:

- The schedule of monitoring well sampling defined in the *Long-Term Groundwater Monitoring Plan* (Argonne 2012) calls for sampling in year 2 (2013); year 3, if needed (2014); year 5 (2016); and year 10 (2021). The option to sample in 2014 was exercised after the changes in the monitoring network in late 2013-early 2014. Because of the increases in carbon tetrachloride concentrations at wells MW06 and MW07 in 2014, the CCC/USDA recommends sampling in 2015 (year 4).
- Continue annual evaluations of the use and condition of the Svoboda, Noeth, and Alcorn private wells and notify the KDHE of changes in ownership or use.
- In view of the absence of contamination in the Noeth private well and the consistency of the lateral extent of the contamination, resample this well at five-year intervals (in 2016 and 2021), unless results for the monitoring well network indicate a change in contaminant concentrations or groundwater flow direction, with the concurrence of the KDHE (2014b).

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USGS, 1963, aerial photograph AYG-2DD-253, U.S. Geological Survey, Washington, D.C., August 2.

Appendix A:

Sampling Activities and Field Measurements in 2014

TABLE A.1 Sequence of groundwater sampling activities in 2014.

Sample Date and Time	Location	Sample	Sample Type ^a	Depth (ft BGL)	Matrix ^b	Chain of Custody	Shipping Date	Sample Description
1/22/14 11:40	MW04	RAMW4GRAB-W-36370	N	45-55	WG	123141	01/23/14	Depth to water = 52.81 ft TOC. Depth of well = 55 ft. Grab sample collected without purging.
1/23/14 11:00	MW04	RAMW4-W-36373	N	45-55	WG	123141	01/23/14	Bailer lowered to bottom of well and withdrawn. Sampled after purging of dry with Waterra (300 mL).
11/24/14 14:30	MW09	RAMW9GRAB-W-36381	N	45-55	WG	1125141	11/25/14	Depth to water = 53.65 ft TOC. Depth of well = 55 ft. Grab sample collected without purging.
11/24/14 14:55	MW10	RAMW10GRAB-W-36382	N	45-55	WG	1125141	11/25/14	Bailer lowered to bottom of well and withdrawn. Insufficient recovery overnight to collect a purged sample.
11/24/14 15:30	MW06	RAMW6GRAB-W-36378	N	45-55	WG	1125141	11/25/14	Depth to water = 47.23 ft TOC. Depth of well = 55 ft. Grab sample collected without purging.
11/24/14 15:30	MW06	RAMW6GRAB-W-36378DUP	DUP-L	45-55	WG	1125141	11/25/14	Bailer lowered to bottom of well and withdrawn. Duplicate laboratory analysis.
11/24/14 15:40	MW08	RAMW8GRAB-W-36380	N	45-55	WG	1125141	11/25/14	Depth to water = 51.15 ft TOC. Depth of well = 55 ft. Grab sample collected without purging.
11/24/14 15:50	MW08	RAMW8-W-36386	N	45-55	WG	1125141	11/25/14	Bailer lowered to bottom of well and withdrawn. Sample collected after purging of 3 well volumes with Waterra pump (1.8 L).
11/24/14 15:50	MW08	RAMW8-W-36386VER	VER	45-55	WG	1125142	11/25/14	Verification sample sent to TestAmerica.
11/24/14 16:04	MW05	RAMW5GRAB-W-36377	N	45-55	WG	1125141	11/25/14	Depth to water = 51.02 ft TOC. Depth of well = 55 ft. Grab sample collected without purging.
11/24/14 16:28	MW07	RAMW7GRAB-W-36379	N	45-55	WG	1125141	11/25/14	Bailer lowered to bottom of well and withdrawn. Depth to water = 53.45 ft TOC. Depth of well = 55 ft. Grab sample collected without purging.
11/25/14 8:00	QC	RAQCTB-W-36391	TB	-	WQC	1125141	11/25/14	Bailer lowered to bottom of well and withdrawn. Trip blank sent to the AGEM Laboratory with water samples for organic analysis.
11/25/14 8:00	QC	RAQCTB-W-36391VER	VER	-	WQC	1125142	11/25/14	Verification sample sent to TestAmerica.
11/25/14 13:50	MW05	RAMW5-W-36383	N	45-55	WG	1125141	11/25/14	Well went dry after purging of one volume (1.2 L). Sample collected with bailer after purging.
11/25/14 14:15	MW07	RAMW7-W-36385	N	45-55	WG	1125141	11/25/14	Well went dry after purging of one volume (0.3 L). Sample collected with bailer after purging.
11/25/14 14:20	QC	RAQCIR-W-36389	RI	-	WQC	1125141	11/25/14	Rinsate of decontaminated sampling line after collection of sample RAMW7-W-36385.
11/25/14 14:36	MW10	RAMW10-W-36388	N	45-55	WG	1125141	11/25/14	Well went dry after purging of one volume (2 L). Sample collected with bailer after purging.

TABLE A.1 (Cont.)

Sample Date and Time	Location	Sample	Sample Type ^a	Depth (ft BGL)	Matrix ^b	Chain of Custody	Shipping Date	Sample Description
11/25/14 14:36	MW10	RAMW10-W-36388	VER	45-55	WG	1125142	11/25/14	Verification sample sent to TestAmerica.
11/25/14 14:50	NOETH	RANOETH-W-36390	N	–	WG	1125141	11/25/14	Sample collected from faucet on south side of Noeth home (connected to well in basement) after running faucet for 5 min.
11/25/14 14:50	NOETH	RANOETH-W-36390	DUP-L	–	WG	1125141	11/25/14	Duplicate laboratory analysis.
11/25/14 14:50	NOETH	RANOETH-W-36390	VER	–	WG	1125142	11/25/14	Verification sample sent to TestAmerica.

^a Sample type codes: DUP-L, laboratory duplicate; N, primary sample; RI, rinsate; TB, trip blank; VER, verification sample.

^b Matrix type codes: WG, groundwater; WQC, quality control water sample (e.g., trip blank).

TABLE A.2 Field measurements for groundwater samples collected in 2014.

Well	Screen Interval (ft BGL)	Sample Date	Temperature (°C)	pH	Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Oxidation- Reduction Potential (mV)
MW04	45-55	01/23/14	9.8	5.23	795	34.77	52
MW05	45-55	11/25/14	13.0	7.61	603	8.38	110
MW06	45-55	11/24/14	NR ^a	NR	NR	NR	NR
MW07	45-55	11/25/14	10.8	7.72	586	7.56	93
MW08	45-55	11/24/14	11.0	7.64	635	6.95	94
MW09	45-55	11/24/14	14.3	7.84	705	7.86	95
MW10	45-55	11/25/14	12.5	7.57	857	5.39	100

^a NR, field measurements not recorded. Well went dry after collection of grab sample on 11/24/14, preventing collection of field measurements.

Appendix B:

Results of Quality Control and Verification Analyses

TABLE B.1 Analytical results from the AGEM Laboratory for quality control samples collected to monitor sample collection and handling activities in 2014.

Location	Sample	Sample Date	Sample Type ^a	Depth (ft BGL)	Concentration (µg/L)		
					Carbon Tetrachloride	Chloroform	Methylene Chloride
MW06	RAMW6GRAB-W-36378	11/24/14	N	45-55	15	1.7	ND ^b
MW06	RAMW6GRAB-W-36378DUP	11/24/14	DUP-L	45-55	13	1.5	ND
NOETH	RANOETH-W-36390	11/25/14	N	–	ND	ND	ND
NOETH	RANOETH-W-36390DUP	11/25/14	DUP-L	–	ND	ND	ND
QC	RAQCIR-W-36389	11/25/14	RI	–	ND	ND	ND
QC	RAQCTB-W-36391	11/25/14	TB	–	ND	ND	ND

^a Sample type codes: DUP-L, laboratory duplicate; N, primary sample.

^b ND, compound analyzed for but not detected at a level greater than or equal to the method detection limit (< 1 µg/L).

TABLE B.2 Results for verification organic analyses during groundwater monitoring in 2014.

Location	Sample	Sample Date	Sample Type ^a	Analytical Laboratory	Concentration (µg/L)			Method Detection Limit
					Carbon Tetrachloride	Chloroform	Methylene Chloride	
MW08	RAMW8-W-36386	11/24/2014	N	AGEM	1.4	ND ^b	ND	1
MW08	RAMW8-W-36386VER	11/24/2014	VER	TestAmerica	0.8	ND	0.09 J ^c B ^d	0.5
MW10	RAMW10-W-36388	11/25/2014	N	AGEM	ND	ND	ND	1
MW10	RAMW10-W-36388VER	11/25/2014	VER	TestAmerica	ND	ND	0.09 J B	0.5
NOETH	RANOETH-W-36390	11/25/2014	N	AGEM	ND	ND	ND	1
NOETH	RANOETH-W-36390VER	11/25/2014	VER	TestAmerica	ND	ND	0.08 J B	0.5
QC	RAQCTB-W-36391	11/25/2014	TB	AGEM	ND	ND	ND	1
QC	RAQCTB-W-36391VER	11/25/2014	VER	TestAmerica	ND	ND	0.1 J B	0.5

^a Sample type codes: N, primary sample; TB, trip blank; VER, verification sample.

^b ND, compound analyzed for but not detected at a level greater than or equal to the indicated method detection limit.

^c J, compound identified with an estimated concentration between the instrument detection limit and the method detection limit.

^d B, compound detected in associated laboratory blank.

Supplement 1:

Sample Documentation from TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

Job Number: 200-25620-1

SDG Number: 25620

Job Description: Ramona (200-25620)

Contract Number: 1E-30401

For:

Argonne National Laboratory

9700 South Cass Avenue

Building 203

Office B-141

Argonne, IL 60439

Attention: Ms. Esther Bowen



Approved for release.
Kirk F Young
Senior Project Manager
12/9/2014 11:05 AM

Kirk F Young, Senior Project Manager
30 Community Drive, South Burlington, VT, 05403
(802)660-1990
kirk.young@testamericainc.com
12/09/2014

The test results in this report relate only to sample(s) as received by the laboratory. These test results were derived under a quality system that adheres to the requirements of NELAC. Pursuant to NELAC, this report may not be produced in full without written approval from the laboratory

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CASE NARRATIVE

Client: Argonne National Laboratory

Project: Ramona (200-25620)

Report Number: 200- 25620-1

Enclosed is the data set for the referenced project work. With the exceptions noted as flags or footnotes, standard analytical protocols were followed in performing the analytical work and the applied control limits were met.

Calculations were performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

Receipt

The samples were received on 11/26/2014. Documentation of the condition of the samples at the time of their receipt and any exception to the laboratory's Sample Acceptance Policy is documented in the Shipping Documentation section of this submittal. The samples, as received, were not acid preserved. On that basis, the laboratory did provide for the analysis of the samples within seven days of sample collection.

SOM01.2 Volatile Organics (Trace Level Water)

A storage blank was prepared for volatile organics analysis, and stored in association with the storage of the samples. That storage blank, identified as VHBLK01, was carried through the holding period with the samples, and analyzed.

Each sample was analyzed without a dilution. Each of the analyses associated with the sample set exhibited an acceptable internal standard performance, and there was an acceptable recovery of each deuterated monitoring compound (DMC) in each analysis. Matrix spike and matrix spike duplicate analyses were not performed on samples in this sample set. Trace concentrations of bromomethane, acetone, and methylene chloride were identified in the analysis of the method blank associated with the analytical work. The concentration of each target analyte in that analysis was below the established reporting limit, and the analysis did meet the technical acceptance criteria for a compliant method blank analysis. Trace concentrations of acetone and methylene chloride were identified in the analysis of the storage blank associated with the sample set. The concentration of each target analyte in that analysis was below the established reporting limit, and the analysis did meet the technical acceptance criteria for a compliant storage blank analysis. Present in the method blank and storage blank analyses was a non-target constituent that represents a compound that is related to the DMC formulation. The fact that the presence of this compound is not within the laboratory's control is at issue. The derived results for that compound have been qualified with an "X" qualifier to reflect the source of the contamination.

The responses for each target analyte met the relative standard deviation criterion in the initial calibration. The response for each target analyte met the percent difference criterion in the opening continuing calibration check acquisition. The response for each target analyte met the 50.0 percent difference criterion in the closing calibration check acquisition.

The primary quantitation mass for methylcyclohexane that is specified in the Statement of Work is

mass 83. The laboratory did identify a contribution to mass 83 from 1,2-dichloropropane-d₆, one of the deuterated monitoring compounds (DMCs). The laboratory did change the primary quantitation mass assignment to mass 55 for the quantification of methylcyclohexane.

Manual integration was employed in deriving certain of the analytical results. The values that have been derived from manual integration are qualified on the quantitation reports. Extracted ion current profiles for each manual integration are included in the data package, and further documented at the end of this submittal.

DATA REPORTING QUALIFIERS

Client: Argonne National Laboratory

Job Number: 200-25620-1

Sdg Number: 25620

Lab Section	Qualifier	Description
GC/MS VOA	U	Analyzed for but not detected.
	J	Indicates an Estimated Value for TICs
	J	Indicates an estimated value.
	X	See case narrative notes for explanation of the 'X' flag
	B	The analyte was found in an associated blank, as well as in the sample.
	N	This flag indicates the presumptive evidence of a compound.

From: (402) 416-7255
Travis Kamler
Argonne National Lab
9700 S CASS AVE
LEMONT, IL 60439

Origin ID: ENLA



J142214092303uv

Ship Date: 25NOV14
ActWgt: 15.0 LB
CAD: 104734835/INET3550
Dims: 14 X 9 X 11 IN

Delivery Address Bar Code



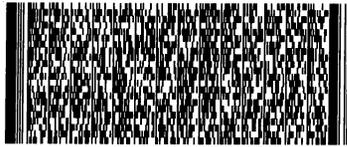
SHIP TO: (802) 660-1990
Kirk Young
Test America
30 COMMUNITY DR
STE 11
SOUTH BURLINGTON, VT 05403

BILL SENDER

Ref # 8A727-G1-167
Invoice #
PO # Ramona
Dept #

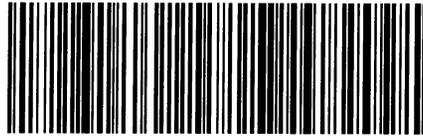
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Shipping and Receiving Documents

Login Sample Receipt Checklist

Client: Argonne National Laboratory

Job Number: 200-25620-1

SDG Number: 25620

Login Number: 25620

List Source: TestAmerica Burlington

List Number: 1

Creator: Goodrich, Kenneth L

Question	Answer	Comment
Radioactivity wasn't checked or is <= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	NO NUMBERS
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.4°C IR GUN 181, CF 0.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Sample Login Acknowledgement

Job 200-25620-1

Client Job Description:	Ramona (200-25620)	Report To:	Argonne National Laboratory
Purchase Order #:	1E-30401		Jorge Alvarado
Work Order #:	1E-30401		9700 South Cass Avenue
Project Manager:	Kirk F Young		Building 203
Job Due Date:	12/10/2014		Office B-141
Job TAT:	14 Days		Argonne, IL 60439
Max Deliverable Level:	IV	Bill To:	Argonne National Laboratory
			Accounts Payable
Earliest Deliverable Due:	12/10/2014		Chief Financial Offices
			9700 S. Cass Ave.
			Building 201
			Argonne, IL 60439

Login 200-25620

Sample Receipt:	11/26/2014 10:20:00 AM	Number of Coolers:	1
Method of Delivery:	FedEx Priority Overnight	Cooler Temperature(s) (C°):	5.4;

Lab Sample #	Client Sample ID	Date Sampled	Matrix	Rpt Basis	Dry / Wet **
Method	Method Description / Work Location				
200-25620-1	RAMW8-W-36386	11/24/2014 3:50:00 PM	Water		
SOM01.2_Vol_Tr	SOM01.2 Trace Volatile Organics / In-Lab			Total	Wet
200-25620-2	RAMW10-W-36388	11/25/2014 2:36:00 PM	Water		
SOM01.2_Vol_Tr	SOM01.2 Trace Volatile Organics / In-Lab			Total	Wet
200-25620-3	RANOETH-W-36390	11/25/2014 2:50:00 PM	Water		
SOM01.2_Vol_Tr	SOM01.2 Trace Volatile Organics / In-Lab			Total	Wet
200-25620-4	RAQCTB-W-36391	11/25/2014 8:00:00 AM	Water		
SOM01.2_Vol_Tr	SOM01.2 Trace Volatile Organics / In-Lab			Total	Wet
200-25620-5	VHBLK01	11/26/2014 12:00:00 AM	Water		
SOM01.2_Vol_Tr	SOM01.2 Trace Volatile Organics / In-Lab			Total	Wet

* Method on-hold

** Wet/Dry indicates whether the reported results will be corrected for moisture based on sample Wet weight or Dry weight.

METHODOLOGY SUMMARY

Laboratory: TestAmerica Laboratories

Project No:

Location: South Burlington, Vermont

SDG No: 25620

VOA

Volatile Organics Trace - USEPA CLP SOM01.2

2A - FORM II VOA-1
WATER VOLATILE DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: TESTAMERICA BURLINGTON

Contract: 8E-00302

Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____

SDG No.: 25620

Level: (TRACE or LOW) TRACE

	EPA SAMPLE NO.	VDMC1 (VCL) #	VDMC2 (CLA) #	VDMC3 (DCE) #	VDMC4 (BUT) #	VDMC5 (CLF) #	VDMC6 (DCA) #	VDMC7 (BEN) #
01	VBLKDK	97	96	77	83	94	97	101
02	RAMW8-W-36386	100	98	77	121	94	99	100
03	RAMW10-W-36388	100	93	78	120	93	98	102
04	RANOETH-W-36390	102	93	78	115	96	101	103
05	RAQCTB-W-36391	101	98	78	92	95	99	102
06	VHBLK01	101	97	80	82	94	97	101

		QC LIMITS
VDMC1	(VCL) = Vinyl Chloride-d3	(65-131)
VDMC2	(CLA) = Chloroethane-d5	(71-131)
VDMC3	(DCE) = 1,1-Dichloroethene-d2	(55-104)
VDMC4	(BUT) = 2-Butanone-d5	(49-155)
VDMC5	(CLF) = Chloroform-d	(78-121)
VDMC6	(DCA) = 1,2-Dichloroethane-d4	(78-129)
VDMC7	(BEN) = Benzene-d6	(77-124)

Column to be used to flag recovery values
* Values outside of contract required QC limits

2B - FORM II VOA-2
WATER VOLATILE DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: TESTAMERICA BURLINGTON

Contract: 8E-00302

Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____

SDG No.: 25620

Level: (TRACE or LOW) TRACE

	EPA SAMPLE NO.	VDMC8 (DPA) #	VDMC9 (TOL) #	VDMC10 (TDP) #	VDMC11 (HEX) #	VDMC12 (TCA) #	VDMC13 (DCZ) #	OTHER	TOT OUT
01	VBLKDK	96	101	82	87	88	102		0
02	RAMW8-W-36386	94	99	79	117	84	100		0
03	RAMW10-W-36388	95	101	80	116	90	101		0
04	RANOETH-W-36390	96	103	80	110	89	104		0
05	RAQCTB-W-36391	94	102	79	92	88	99		0
06	VHBLK01	95	102	77	86	86	102		0

		QC LIMITS
VDMC8	(DPA) = 1,2-Dichloropropane-d6	(79-124)
VDMC9	(TOL) = Toluene-d8	(77-121)
VDMC10	(TDP) = trans-1,3-Dichloropropene-d4	(73-121)
VDMC11	(HEX) = 2-Hexanone-d5	(28-135)
VDMC12	(TCA) = 1,1,2,2-Tetrachloroethane-d2	(73-125)
VDMC13	(DCZ) = 1,2-Dichlorobenzene-d4	(80-131)

Column to be used to flag recovery values
* Values outside of contract required QC limits

Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only

4A - FORM IV VOA
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLKDK

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Lab File ID: DMGF05.D Lab Sample ID: MB 200-81350/5
 Instrument ID: D.i
 Matrix: (SOIL/SED/WATER) Water Date Analyzed: 11/26/2014
 Level: (TRACE or LOW/MED) TRACE Time Analyzed: 1252
 GC Column: DB-624 ID: 0.20 (mm) Heated Purge: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	RAMW8-W-3638 6	200-25620-1	DMGF20.D	1904
02	RAMW10-W-363 88	200-25620-2	DMGF21.D	1929
03	RANOETH-W-36 390	200-25620-3	DMGF22.D	1954
04	RAQCTB-W-363 91	200-25620-4	DMGF23.D	2019
05	VHBLK01	200-25620-5	DMGF24.D	2044

COMMENTS: _____

5A - FORM V VOA
 VOLATILE ORGANICS INSTRUMENT
 PERFORMANCE CHECK
 BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFBDE

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Lab File Id: DMG01.D BFB Injection Date: 11/13/2014
 Instrument Id: D.i BFB Injection Time: 1230
 GC Column: DB-624 ID: 0.20 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.2
75	30.0 - 80.0% of mass 95	50.8
95	Base peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.5 (0.7)1
174	50.0 - 120% of mass 95	77.3
175	5.0 - 9.0% of mass 174	5.3 (6.9)1
176	95.0 - 101% of mass 174	75.5 (97.7)1
177	5.0 - 9.0% of mass 176	4.8 (6.4)2

1 - Value is %mass 174

2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0.5DE	IC 200-80554/6	DMG06.D	11/13/2014	1431
02	VSTD001DE	IC 200-80554/7	DMG07.D	11/13/2014	1456
03	VSTD005DE	ICIS 200-80554/8	DMG08.D	11/13/2014	1521
04	VSTD010DE	IC 200-80554/9	DMG09.D	11/13/2014	1546
05	VSTD020DE	IC 200-80554/10	DMG10.D	11/13/2014	1611

5A - FORM V VOA
VOLATILE ORGANICS INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFBDK

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Lab File Id: DMGF01.D BFB Injection Date: 11/26/2014
 Instrument Id: D.i BFB Injection Time: 1118
 GC Column: DB-624 ID: 0.20 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.9
75	30.0 - 80.0% of mass 95	52.0
95	Base peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.5 (0.6)1
174	50.0 - 120% of mass 95	85.9
175	5.0 - 9.0% of mass 174	6.0 (6.9)1
176	95.0 - 101% of mass 174	84.8 (98.7)1
177	5.0 - 9.0% of mass 176	5.4 (6.4)2

1 - Value is %mass 174

2 - Value is %mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005DK	CCVIS 200-81350/3	DMGF03.D	11/26/2014	1202
02	VBLKDK	MB 200-81350/5	DMGF05.D	11/26/2014	1252
03	RAMW8-W-36 386	200-25620-1	DMGF20.D	11/26/2014	1904
04	RAMW10-W-3 6388	200-25620-2	DMGF21.D	11/26/2014	1929
05	RANOETH-W- 36390	200-25620-3	DMGF22.D	11/26/2014	1954
06	RAQCTB-W-3 6391	200-25620-4	DMGF23.D	11/26/2014	2019
07	VHBLK01	200-25620-5	DMGF24.D	11/26/2014	2044
08	VSTD005KD	CCVC 200-81350/25	DMGF25.D	11/26/2014	2108

8A - FORM VIII VOA
VOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 GC Column: DB-624 ID: 0.20 (mm) Init. Calib. Date(s): 11/13/2014 11/13/2014
 EPA Sample No. (VSTD#####): VSTD005DK Date Analyzed: 11/26/2014
 Lab File ID (Standard): DMGF03.D Time Analyzed: 1202
 Instrument ID: D.i Heated Purge: (Y/N) N

	IS1 (CBZ)		IS2 (DFB)		IS3 (DCB)				
	AREA	#	RT	#	AREA	#	RT	#	
12 HOUR STD	468797		9.36		554723	5.99		241309	12.18
UPPER LIMIT	656316		9.69		776612	6.32		337833	12.51
LOWER LIMIT	281278		9.03		332834	5.66		144785	11.85
EPA SAMPLE NO.									
01 VBLKDK	452668		9.36		554528	6.00		216349	12.18
02 RAMW8-W-36386	423402		9.36		509228	5.99		205431	12.18
03 RAMW10-W-36388	425163		9.36		519942	5.99		207573	12.18
04 RANOETH-W-36390	440912		9.36		537080	5.99		209847	12.18
05 RAQCTB-W-36391	419283		9.36		510328	5.99		203684	12.18
06 VHBLK01	419467		9.36		511678	6.00		203521	12.18

IS1 (CBZ) = Chlorobenzene-d5
 IS2 (DFB) = 1,4-Difluorobenzene
 IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = 140% (Trace Volatiles) of internal standard area
 AREA LOWER LIMIT = 60% (Trace Volatiles) of internal standard area
 RT UPPER LIMIT = + 0.33 (Trace Volatiles) minutes of internal standard RT
 RT LOWER LIMIT = - 0.33 (Trace Volatiles) minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 200-25620-2
 Sample wt/vol: 25.0 (g/mL) mL Lab File ID: DMGF21.D
 Level: (TRACE/LOW/MED) TRACE Date Received: 11/26/2014
 % Moisture: not dec. Date Analyzed: 11/26/2014
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
 Purge Volume: 25.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) <u>ug/L</u>	<u>Q</u>
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U
67-64-1	Acetone	2.2	J B
75-15-0	Carbon disulfide	0.50	U
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.092	J B
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-Butanone	5.0	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
56-23-5	Carbon tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U

Report 1,4-Dioxane for Low-Medium VOA analysis only

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 200-25620-2
 Sample wt/vol: 25.0 (g/mL) mL Lab File ID: DMGF21.D
 Level: (TRACE/LOW/MED) TRACE Date Received: 11/26/2014
 % Moisture: not dec. Date Analyzed: 11/26/2014
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
 Purge Volume: 25.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
79-01-6	Trichloroethene	0.50	U
108-87-2	Methylcyclohexane	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	0.011	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
95-47-6	o-Xylene	0.50	U
179601-23-1	m,p-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1J - FORM I VOA-TIC
 VOLATILE ORGANICS ANALYSIS DATA SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RAMW10-W-36388

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 200-25620-2
 Sample wt/vol: 25.0 (g/mL) mL Lab File ID: DMGF21.D
 Level: (TRACE or LOW/MED) TRACE Date Received: 11/26/2014
 % Moisture: not dec. _____ Date Analyzed: 11/26/2014
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown	7.32	2.8	J B X
02	E966796 ¹	Total Alkanes	N/A		

¹EPA-designated Registry Number.

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 200-25620-1
 Sample wt/vol: 25.0 (g/mL) mL Lab File ID: DMGF20.D
 Level: (TRACE/LOW/MED) TRACE Date Received: 11/26/2014
 % Moisture: not dec. Date Analyzed: 11/26/2014
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
 Purge Volume: 25.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) <u>ug/L</u>	<u>Q</u>
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U
67-64-1	Acetone	2.0	J B
75-15-0	Carbon disulfide	0.50	U
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.092	J B
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-Butanone	5.0	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
56-23-5	Carbon tetrachloride	0.76	
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U

Report 1,4-Dioxane for Low-Medium VOA analysis only

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 200-25620-1
 Sample wt/vol: 25.0 (g/mL) mL Lab File ID: DMGF20.D
 Level: (TRACE/LOW/MED) TRACE Date Received: 11/26/2014
 % Moisture: not dec. Date Analyzed: 11/26/2014
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
 Purge Volume: 25.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
79-01-6	Trichloroethene	0.50	U
108-87-2	Methylcyclohexane	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
95-47-6	o-Xylene	0.50	U
179601-23-1	m,p-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1J - FORM I VOA-TIC
 VOLATILE ORGANICS ANALYSIS DATA SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RAMW8-W-36386

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 200-25620-1
 Sample wt/vol: 25.0 (g/mL) mL Lab File ID: DMGF20.D
 Level: (TRACE or LOW/MED) TRACE Date Received: 11/26/2014
 % Moisture: not dec. _____ Date Analyzed: 11/26/2014
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown	7.32	2.8	J B X
02	541-05-9	Cyclotrisiloxane, hexamethyl-	8.25	0.96	J B N
03		Unknown	11.07	0.94	J
04	E966796 ¹	Total Alkanes	N/A		

¹EPA-designated Registry Number.

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 200-25620-3
 Sample wt/vol: 25.0 (g/mL) mL Lab File ID: DMGF22.D
 Level: (TRACE/LOW/MED) TRACE Date Received: 11/26/2014
 % Moisture: not dec. Date Analyzed: 11/26/2014
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
 Purge Volume: 25.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) <u>ug/L</u>	<u>Q</u>
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon disulfide	0.50	U
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.084	J B
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-Butanone	5.0	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
56-23-5	Carbon tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U

Report 1,4-Dioxane for Low-Medium VOA analysis only

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 200-25620-3
 Sample wt/vol: 25.0 (g/mL) mL Lab File ID: DMGF22.D
 Level: (TRACE/LOW/MED) TRACE Date Received: 11/26/2014
 % Moisture: not dec. Date Analyzed: 11/26/2014
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
 Purge Volume: 25.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
79-01-6	Trichloroethene	0.50	U
108-87-2	Methylcyclohexane	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	0.011	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
95-47-6	o-Xylene	0.50	U
179601-23-1	m,p-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1J - FORM I VOA-TIC
 VOLATILE ORGANICS ANALYSIS DATA SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RANOETH-W-36390

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 200-25620-3
 Sample wt/vol: 25.0 (g/mL) mL Lab File ID: DMGF22.D
 Level: (TRACE or LOW/MED) TRACE Date Received: 11/26/2014
 % Moisture: not dec. _____ Date Analyzed: 11/26/2014
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown	7.32	2.9	J B X
02	E966796 ¹	Total Alkanes	N/A		

¹EPA-designated Registry Number.

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 200-25620-4
 Sample wt/vol: 25.0 (g/mL) mL Lab File ID: DMGF23.D
 Level: (TRACE/LOW/MED) TRACE Date Received: 11/26/2014
 % Moisture: not dec. Date Analyzed: 11/26/2014
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
 Purge Volume: 25.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U
67-64-1	Acetone	2.6	J B
75-15-0	Carbon disulfide	0.50	U
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.10	J B
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-Butanone	5.0	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
56-23-5	Carbon tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U

Report 1,4-Dioxane for Low-Medium VOA analysis only

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 200-25620-4
 Sample wt/vol: 25.0 (g/mL) mL Lab File ID: DMGF23.D
 Level: (TRACE/LOW/MED) TRACE Date Received: 11/26/2014
 % Moisture: not dec. Date Analyzed: 11/26/2014
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
 Purge Volume: 25.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) <u>ug/L</u>	<u>Q</u>
79-01-6	Trichloroethene	0.063	J
108-87-2	Methylcyclohexane	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	0.10	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.013	J
95-47-6	o-Xylene	0.039	J
179601-23-1	m,p-Xylene	0.031	J
100-42-5	Styrene	0.014	J
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1J - FORM I VOA-TIC
 VOLATILE ORGANICS ANALYSIS DATA SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RAQCTB-W-36391

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 200-25620-4
 Sample wt/vol: 25.0 (g/mL) mL Lab File ID: DMGF23.D
 Level: (TRACE or LOW/MED) TRACE Date Received: 11/26/2014
 % Moisture: not dec. _____ Date Analyzed: 11/26/2014
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown	7.32	2.8	J B X
02	E966796 ¹	Total Alkanes	N/A		

¹EPA-designated Registry Number.

6A - FORM VI VOA-1
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Instrument ID: D.i Calibration Date(s): 11/13/2014 11/13/2014
 Heated Purge: (Y/N) N Calibration Time(s): 1431 1611
 Purge Volume: 25.0 (mL)
 GC Column: DB-624 ID: 0.20 (mm) Length: 25 (m)

LAB FILE ID: _____ RRF_{0.5} = DMG06.D RRF_{1.0} = DMG07.D
 RRF_{5.0} = DMG08.D RRF₁₀ = DMG09.D RRF₂₀ = DMG10.D

COMPOUND	RRF _{0.5}	RRF _{1.0}	RRF _{5.0}	RRF ₁₀	RRF ₂₀	RRF	%RSD
Dichlorodifluoromethane	0.591	0.570	0.584	0.584	0.571	0.580	1.6
Chloromethane	0.610	0.530	0.480	0.485	0.459	0.513	11.7
Vinyl chloride	0.455	0.432	0.442	0.445	0.438	0.443	1.9
Bromomethane	0.154	0.120	0.122	0.139	0.138	0.135	10.5
Chloroethane	0.220	0.216	0.227	0.224	0.207	0.219	3.5
Trichlorofluoromethane	0.554	0.524	0.539	0.546	0.524	0.537	2.5
1,1-Dichloroethene	0.317	0.261	0.290	0.279	0.268	0.283	7.8
1,1,2-Trichloro- 1,2,2-trifluoroethane	0.298	0.300	0.320	0.306	0.293	0.303	3.5
Acetone	0.027	0.021	0.026	0.025	0.025	0.025	8.3
Carbon disulfide	0.832	0.785	0.818	0.834	0.821	0.818	2.4
Methyl acetate	0.061	0.069	0.068	0.063	0.062	0.065	5.6
Methylene Chloride	0.304	0.272	0.260	0.260	0.256	0.270	7.3
trans-1,2-Dichloroethene	0.319	0.306	0.320	0.320	0.316	0.316	1.9
Methyl tert-butyl ether	0.413	0.388	0.416	0.429	0.425	0.414	3.9
1,1-Dichloroethane	0.598	0.582	0.605	0.616	0.601	0.600	2.1
cis-1,2-Dichloroethene	0.313	0.291	0.313	0.316	0.313	0.309	3.2
2-Butanone	0.040	0.039	0.042	0.045	0.044	0.042	6.8
Bromochloromethane	0.095	0.088	0.096	0.098	0.098	0.095	4.2
Chloroform	0.527	0.509	0.535	0.547	0.536	0.531	2.6
1,1,1-Trichloroethane	0.633	0.639	0.646	0.661	0.647	0.645	1.6
Cyclohexane	0.836	0.830	0.827	0.824	0.798	0.823	1.8
Carbon tetrachloride	0.536	0.541	0.564	0.577	0.572	0.558	3.3
Benzene	1.728	1.716	1.627	1.633	1.569	1.655	4.0
1,2-Dichloroethane	0.266	0.249	0.269	0.277	0.272	0.267	3.9
Trichloroethene	0.415	0.414	0.411	0.419	0.406	0.413	1.1
Methylcyclohexane	0.676	0.709	0.684	0.695	0.671	0.687	2.2

Report 1,4-Dioxane for Low-Medium VOA analysis only

6B - FORM VI VOA-2
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Instrument ID: D.i Calibration Date(s): 11/13/2014 11/13/2014
 Heated Purge: (Y/N) N Calibration Time(s): 1431 1611
 Purge Volume: 25.0 (mL)
 GC Column: DB-624 ID: 0.20 (mm) Length: 25 (m)

LAB FILE ID: _____	RRF _{0.5} = <u>DMG06.D</u>	RRF _{1.0} = <u>DMG07.D</u>
RRF _{5.0} = <u>DMG08.D</u>	RRF ₁₀ = <u>DMG09.D</u>	RRF ₂₀ = <u>DMG10.D</u>

COMPOUND	RRF _{0.5}	RRF _{1.0}	RRF _{5.0}	RRF ₁₀	RRF ₂₀	RRF	%RSD
1,2-Dichloropropane	0.342	0.348	0.335	0.346	0.334	0.341	1.9
Bromodichloromethane	0.342	0.316	0.365	0.381	0.379	0.356	7.7
cis-1,3-Dichloropropene	0.435	0.419	0.475	0.490	0.481	0.460	6.7
4-Methyl-2-pentanone	0.109	0.113	0.122	0.125	0.122	0.118	5.7
Toluene	1.764	1.672	1.742	1.756	1.698	1.726	2.3
trans-1,3-Dichloropropene	0.300	0.284	0.330	0.342	0.343	0.320	8.3
1,1,2-Trichloroethane	0.228	0.202	0.174	0.169	0.162	0.187	14.6
Tetrachloroethene	0.374	0.357	0.375	0.378	0.372	0.371	2.3
2-Hexanone	0.074	0.074	0.083	0.086	0.084	0.080	7.0
Dibromochloromethane	0.157	0.156	0.185	0.197	0.202	0.179	12.1
1,2-Dibromoethane	0.137	0.131	0.141	0.146	0.145	0.140	4.6
Chlorobenzene	1.018	0.997	1.027	1.035	1.005	1.016	1.5
Ethylbenzene	2.111	2.043	2.111	2.131	2.079	2.095	1.6
o-Xylene	0.727	0.718	0.762	0.772	0.770	0.750	3.4
m,p-Xylene	0.804	0.778	0.821	0.838	0.828	0.814	2.9
Styrene	1.081	1.062	1.145	1.183	1.190	1.132	5.2
Bromoform	0.131	0.123	0.148	0.161	0.171	0.147	13.7
Isopropylbenzene	2.174	2.112	2.203	2.246	2.222	2.192	2.4
1,1,2,2-Tetrachloroethane	0.161	0.151	0.163	0.170	0.167	0.162	4.6
1,3-Dichlorobenzene	1.693	1.633	1.694	1.721	1.700	1.688	1.9
1,4-Dichlorobenzene	1.650	1.581	1.640	1.654	1.629	1.631	1.8
1,2-Dichlorobenzene	1.331	1.293	1.358	1.376	1.366	1.345	2.5
1,2-Dibromo-3-Chloropropane	0.041	0.039	0.044	0.046	0.046	0.043	7.9
1,2,4-Trichlorobenzene	0.868	0.823	0.866	0.909	0.920	0.877	4.4
1,2,3-Trichlorobenzene	0.652	0.614	0.650	0.683	0.692	0.658	4.7

6C - FORM VI VOA-3
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Instrument ID: D.i Calibration Date(s): 11/13/2014 11/13/2014
 Heated Purge: (Y/N) N Calibration Time(s): 1431 1611
 Purge Volume: 25.0 (mL)
 GC Column: DB-624 ID: 0.20 (mm) Length: 25 (m)

LAB FILE ID: _____ RRF_{0.5} = DMG06.D RRF_{1.0} = DMG07.D
 RRF_{5.0} = DMG08.D RRF₁₀ = DMG09.D RRF₂₀ = DMG10.D

COMPOUND	RRF _{0.5}	RRF _{1.0}	RRF _{5.0}	RRF ₁₀	RRF ₂₀	RRF	%RSD
Vinyl Chloride-d3	0.357	0.331	0.340	0.345	0.341	0.343	2.8
Chloroethane-d5	0.247	0.251	0.253	0.247	0.224	0.244	4.7
1,1-Dichloroethene-d2	0.644	0.607	0.652	0.624	0.589	0.623	4.2
2-Butanone-d5	0.044	0.038	0.040	0.042	0.041	0.041	4.6
Chloroform-d	0.576	0.547	0.579	0.589	0.578	0.574	2.8
1,2-Dichloroethane-d4	0.227	0.217	0.224	0.229	0.223	0.224	2.0
Benzene-d6	1.560	1.575	1.559	1.554	1.498	1.549	1.9
1,2-Dichloropropane-d6	0.411	0.413	0.410	0.399	0.399	0.406	1.6
Toluene-d8	1.507	1.436	1.498	1.511	1.461	1.483	2.2
trans-1,3-Dichloropropene-d4	0.268	0.258	0.292	0.309	0.313	0.288	8.4
2-Hexanone-d5	0.033	0.033	0.037	0.039	0.038	0.036	8.2
1,1,2,2-Tetrachloroethane-d2	0.161	0.157	0.163	0.170	0.168	0.164	3.3
1,2-Dichlorobenzene-d4	1.045	0.913	0.870	0.876	0.865	0.914	8.3

Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only

7A - FORM VII VOA-1
VOLATILE CONTINUING CALIBRATION DATA

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Instrument ID: D.i Calibration Date: 11/26/2014 Time: 1202
 Lab File Id: DMGF03.D Init. Calib. Date(s): 11/13/2014 11/13/2014
 EPA Sample No. (VSTD####): VSTD005DK Init. Calib. Time(s): 1431 1611
 Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.20 (mm) Length: 25 (m)
 Purge Volume: 25.0 (mL)

COMPOUND	RRF	RRF5.0	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.580	0.592	0.010	2.0	40.0
Chloromethane	0.513	0.499	0.010	-2.7	40.0
Vinyl chloride	0.443	0.452	0.100	2.1	30.0
Bromomethane	0.135	0.123	0.100	-8.4	30.0
Chloroethane	0.219	0.218	0.010	-0.3	40.0
Trichlorofluoromethane	0.537	0.614	0.010	14.2	40.0
1,1-Dichloroethene	0.283	0.256	0.100	-9.6	30.0
1,1,2-Trichloro-1,2,2-trifluoroethane	0.303	0.309	0.010	1.9	40.0
Acetone	0.025	0.024	0.010	-2.7	40.0
Carbon disulfide	0.818	0.752	0.010	-8.1	40.0
Methyl acetate	0.065	0.062	0.010	-4.6	40.0
Methylene Chloride	0.270	0.271	0.010	0.1	40.0
trans-1,2-Dichloroethene	0.316	0.326	0.010	3.2	40.0
Methyl tert-butyl ether	0.414	0.365	0.010	-11.9	40.0
1,1-Dichloroethane	0.600	0.610	0.200	1.6	30.0
cis-1,2-Dichloroethene	0.309	0.317	0.010	2.7	40.0
2-Butanone	0.042	0.044	0.010	3.9	40.0
Bromochloromethane	0.095	0.094	0.050	-0.8	30.0
Chloroform	0.531	0.555	0.200	4.6	30.0
1,1,1-Trichloroethane	0.645	0.634	0.100	-1.7	30.0
Cyclohexane	0.823	0.804	0.010	-2.3	40.0
Carbon tetrachloride	0.558	0.557	0.100	-0.2	30.0
Benzene	1.655	1.644	0.400	-0.6	30.0
1,2-Dichloroethane	0.267	0.276	0.100	3.7	30.0
Trichloroethene	0.413	0.419	0.300	1.4	30.0
Methylcyclohexane	0.687	0.684	0.010	-0.5	40.0

Report 1,4-Dioxane for Low/Medium VOA analysis only

7B - FORM VII VOA-2
VOLATILE CONTINUING CALIBRATION DATA

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Instrument ID: D.i Calibration Date: 11/26/2014 Time: 1202
 Lab File Id: DMGF03.D Init. Calib. Date(s): 11/13/2014 11/13/2014
 EPA Sample No. (VSTD####): VSTD005DK Init. Calib. Time(s): 1431 1611
 Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.20 (mm) Length: 25 (m)
 Purge Volume: 25.0 (mL)

COMPOUND	RRF	RRF5.0	MIN RRF	%D	MAX %D
1,2-Dichloropropane	0.341	0.344	0.010	0.8	40.0
Bromodichloromethane	0.356	0.349	0.200	-2.1	30.0
cis-1,3-Dichloropropene	0.460	0.459	0.200	-0.2	30.0
4-Methyl-2-pentanone	0.118	0.120	0.010	1.1	40.0
Toluene	1.726	1.776	0.400	2.9	30.0
trans-1,3-Dichloropropene	0.320	0.311	0.100	-2.6	30.0
1,1,2-Trichloroethane	0.187	0.167	0.100	-10.8	30.0
Tetrachloroethene	0.371	0.384	0.100	3.3	30.0
2-Hexanone	0.080	0.083	0.010	3.3	40.0
Dibromochloromethane	0.179	0.173	0.100	-3.4	30.0
1,2-Dibromoethane	0.140	0.143	0.010	1.8	40.0
Chlorobenzene	1.016	1.041	0.500	2.4	30.0
Ethylbenzene	2.095	2.146	0.100	2.4	30.0
o-Xylene	0.750	0.755	0.300	0.7	30.0
m,p-Xylene	0.814	0.830	0.300	2.0	30.0
Styrene	1.132	1.149	0.300	1.5	30.0
Bromoform	0.147	0.132	0.050	-10.1	30.0
Isopropylbenzene	2.192	2.262	0.010	3.2	40.0
1,1,2,2-Tetrachloroethane	0.162	0.166	0.100	2.2	30.0
1,3-Dichlorobenzene	1.688	1.769	0.400	4.8	30.0
1,4-Dichlorobenzene	1.631	1.750	0.400	7.3	30.0
1,2-Dichlorobenzene	1.345	1.439	0.400	7.0	30.0
1,2-Dibromo-3-Chloropropane	0.043	0.038	0.010	-13.1	40.0
1,2,4-Trichlorobenzene	0.877	0.905	0.200	3.2	30.0
1,2,3-Trichlorobenzene	0.658	0.665	0.200	1.0	30.0

7C - FORM VII VOA-3
VOLATILE CONTINUING CALIBRATION DATA

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Instrument ID: D.i Calibration Date: 11/26/2014 Time: 1202
 Lab File Id: DMGF03.D Init. Calib. Date(s): 11/13/2014 11/13/2014
 EPA Sample No. (VSTD####): VSTD005DK Init. Calib. Time(s): 1431 1611
 Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.20 (mm) Length: 25 (m)
 Purge Volume: 25.0 (mL)

COMPOUND	RRF	RRF5.0	MIN RRF	%D	MAX %D
Vinyl Chloride-d3	0.343	0.354	0.010	3.3	30.0
Chloroethane-d5	0.244	0.237	0.010	-3.0	40.0
1,1-Dichloroethene-d2	0.623	0.629	0.010	0.9	30.0
2-Butanone-d5	0.041	0.038	0.010	-6.5	40.0
Chloroform-d	0.574	0.594	0.010	3.6	30.0
1,2-Dichloroethane-d4	0.224	0.231	0.010	3.1	30.0
Benzene-d6	1.549	1.556	0.010	0.5	30.0
1,2-Dichloropropane-d6	0.406	0.391	0.010	-3.8	40.0
Toluene-d8	1.483	1.520	0.010	2.5	30.0
trans-1,3-Dichloropropene-d4	0.288	0.273	0.010	-5.3	30.0
2-Hexanone-d5	0.036	0.035	0.010	-1.9	40.0
1,1,2,2-Tetrachloroethane-d2	0.164	0.166	0.010	1.2	30.0
1,2-Dichlorobenzene-d4	0.914	0.911	0.010	-0.3	30.0

Report 1,4-Dioxane-d8 for Low/Medium VOA analysis only

7A - FORM VII VOA-1
VOLATILE CONTINUING CALIBRATION DATA

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Instrument ID: D.i Calibration Date: 11/26/2014 Time: 2108
 Lab File Id: DMGF25.D Init. Calib. Date(s): 11/13/2014 11/13/2014
 EPA Sample No. (VSTD####): VSTD005KD Init. Calib. Time(s): 1431 1611
 Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.20 (mm) Length: 25 (m)
 Purge Volume: 25.0 (mL)

COMPOUND	RRF	RRF5.0	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.580	0.614	0.010	5.9	50.0
Chloromethane	0.513	0.522	0.010	1.8	50.0
Vinyl chloride	0.443	0.449	0.010	1.4	50.0
Bromomethane	0.135	0.143	0.010	6.4	50.0
Chloroethane	0.219	0.218	0.010	-0.2	50.0
Trichlorofluoromethane	0.537	0.637	0.010	18.4	50.0
1,1-Dichloroethene	0.283	0.267	0.010	-5.8	50.0
1,1,2-Trichloro-1,2,2-trifluoroethane	0.303	0.314	0.010	3.5	50.0
Acetone	0.025	0.026	0.010	2.6	50.0
Carbon disulfide	0.818	0.691	0.010	-15.6	50.0
Methyl acetate	0.065	0.057	0.010	-11.8	50.0
Methylene Chloride	0.270	0.267	0.010	-1.0	50.0
trans-1,2-Dichloroethene	0.316	0.314	0.010	-0.6	50.0
Methyl tert-butyl ether	0.414	0.329	0.010	-20.5	50.0
1,1-Dichloroethane	0.600	0.601	0.010	0.1	50.0
cis-1,2-Dichloroethene	0.309	0.312	0.010	1.1	50.0
2-Butanone	0.042	0.039	0.010	-7.4	50.0
Bromochloromethane	0.095	0.092	0.010	-2.9	50.0
Chloroform	0.531	0.549	0.010	3.4	50.0
1,1,1-Trichloroethane	0.645	0.640	0.010	-0.8	50.0
Cyclohexane	0.823	0.815	0.010	-1.0	50.0
Carbon tetrachloride	0.558	0.563	0.010	0.9	50.0
Benzene	1.655	1.660	0.010	0.3	50.0
1,2-Dichloroethane	0.267	0.269	0.010	1.0	50.0
Trichloroethene	0.413	0.426	0.010	3.2	50.0
Methylcyclohexane	0.687	0.678	0.010	-1.3	50.0

Report 1,4-Dioxane for Low/Medium VOA analysis only

7B - FORM VII VOA-2
VOLATILE CONTINUING CALIBRATION DATA

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Instrument ID: D.i Calibration Date: 11/26/2014 Time: 2108
 Lab File Id: DMGF25.D Init. Calib. Date(s): 11/13/2014 11/13/2014
 EPA Sample No. (VSTD####): VSTD005KD Init. Calib. Time(s): 1431 1611
 Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.20 (mm) Length: 25 (m)
 Purge Volume: 25.0 (mL)

COMPOUND	RRF	RRF5.0	MIN RRF	%D	MAX %D
1,2-Dichloropropane	0.341	0.331	0.010	-3.0	50.0
Bromodichloromethane	0.356	0.341	0.010	-4.3	50.0
cis-1,3-Dichloropropene	0.460	0.432	0.010	-6.2	50.0
4-Methyl-2-pentanone	0.118	0.110	0.010	-6.9	50.0
Toluene	1.726	1.809	0.010	4.8	50.0
trans-1,3-Dichloropropene	0.320	0.289	0.010	-9.7	50.0
1,1,2-Trichloroethane	0.187	0.160	0.010	-14.3	50.0
Tetrachloroethene	0.371	0.393	0.010	5.8	50.0
2-Hexanone	0.080	0.077	0.010	-3.6	50.0
Dibromochloromethane	0.179	0.169	0.010	-5.9	50.0
1,2-Dibromoethane	0.140	0.137	0.010	-2.1	50.0
Chlorobenzene	1.016	1.047	0.010	3.0	50.0
Ethylbenzene	2.095	2.210	0.010	5.5	50.0
o-Xylene	0.750	0.773	0.010	3.1	50.0
m,p-Xylene	0.814	0.849	0.010	4.3	50.0
Styrene	1.132	1.165	0.010	2.9	50.0
Bromoform	0.147	0.125	0.010	-14.8	50.0
Isopropylbenzene	2.192	2.347	0.010	7.1	50.0
1,1,2,2-Tetrachloroethane	0.162	0.160	0.010	-1.7	50.0
1,3-Dichlorobenzene	1.688	1.766	0.010	4.6	50.0
1,4-Dichlorobenzene	1.631	1.716	0.010	5.2	50.0
1,2-Dichlorobenzene	1.345	1.408	0.010	4.7	50.0
1,2-Dibromo-3-Chloropropane	0.043	0.034	0.010	-21.6	50.0
1,2,4-Trichlorobenzene	0.877	0.876	0.010	-0.1	50.0
1,2,3-Trichlorobenzene	0.658	0.629	0.010	-4.4	50.0

7C - FORM VII VOA-3
VOLATILE CONTINUING CALIBRATION DATA

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Instrument ID: D.i Calibration Date: 11/26/2014 Time: 2108
 Lab File Id: DMGF25.D Init. Calib. Date(s): 11/13/2014 11/13/2014
 EPA Sample No. (VSTD####): VSTD005KD Init. Calib. Time(s): 1431 1611
 Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.20 (mm) Length: 25 (m)
 Purge Volume: 25.0 (mL)

COMPOUND	RRF	RRF5.0	MIN RRF	%D	MAX %D
Vinyl Chloride-d3	0.343	0.353	0.010	3.0	50.0
Chloroethane-d5	0.244	0.236	0.010	-3.6	50.0
1,1-Dichloroethene-d2	0.623	0.650	0.010	4.3	50.0
2-Butanone-d5	0.041	0.035	0.010	-15.2	50.0
Chloroform-d	0.574	0.591	0.010	3.0	50.0
1,2-Dichloroethane-d4	0.224	0.224	0.010	0.1	50.0
Benzene-d6	1.549	1.593	0.010	2.8	50.0
1,2-Dichloropropane-d6	0.406	0.396	0.010	-2.6	50.0
Toluene-d8	1.483	1.544	0.010	4.2	50.0
trans-1,3-Dichloropropene-d4	0.288	0.253	0.010	-12.0	50.0
2-Hexanone-d5	0.036	0.033	0.010	-9.9	50.0
1,1,2,2-Tetrachloroethane-d2	0.164	0.158	0.010	-3.5	50.0
1,2-Dichlorobenzene-d4	0.914	0.908	0.010	-0.6	50.0

Report 1,4-Dioxane-d8 for Low/Medium VOA analysis only

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Matrix: (SOIL/SED/WATER) Water Lab Sample ID: MB 200-81350/5
 Sample wt/vol: 25.0 (g/mL) mL Lab File ID: DMGF05.D
 Level: (TRACE/LOW/MED) TRACE Date Received: _____
 % Moisture: not dec. Date Analyzed: 11/26/2014
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
 Purge Volume: 25.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) <u>ug/L</u>	<u>Q</u>
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.068	J
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U
67-64-1	Acetone	1.8	J
75-15-0	Carbon disulfide	0.50	U
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.13	J
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-Butanone	5.0	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
56-23-5	Carbon tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U

Report 1,4-Dioxane for Low-Medium VOA analysis only

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Matrix: (SOIL/SED/WATER) Water Lab Sample ID: MB 200-81350/5
 Sample wt/vol: 25.0 (g/mL) mL Lab File ID: DMGF05.D
 Level: (TRACE/LOW/MED) TRACE Date Received: _____
 % Moisture: not dec. Date Analyzed: 11/26/2014
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
 Purge Volume: 25.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
79-01-6	Trichloroethene	0.50	U
108-87-2	Methylcyclohexane	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
95-47-6	o-Xylene	0.50	U
179601-23-1	m,p-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1J - FORM I VOA-TIC
 VOLATILE ORGANICS ANALYSIS DATA SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKDK

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Matrix: (SOIL/SED/WATER) Water Lab Sample ID: MB 200-81350/5
 Sample wt/vol: 25.0 (g/mL) mL Lab File ID: DMGF05.D
 Level: (TRACE or LOW/MED) TRACE Date Received: _____
 % Moisture: not dec. _____ Date Analyzed: 11/26/2014
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown	7.32	2.8	J X
02	541-05-9	Cyclotrisiloxane, hexamethyl-	8.25	1.6	J N
03		Unknown	11.07	1.1	J
04	E966796 ¹	Total Alkanes	N/A		

¹EPA-designated Registry Number.

VHBLK01

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 200-25620-5
 Sample wt/vol: 25.0 (g/mL) mL Lab File ID: DMGF24.D
 Level: (TRACE/LOW/MED) TRACE Date Received: _____
 % Moisture: not dec. Date Analyzed: 11/26/2014
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
 Purge Volume: 25.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) <u>ug/L</u>	<u>Q</u>
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U
67-64-1	Acetone	2.2	J B
75-15-0	Carbon disulfide	0.50	U
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.22	J B
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-Butanone	5.0	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
56-23-5	Carbon tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U

Report 1,4-Dioxane for Low-Medium VOA analysis only

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 200-25620-5
 Sample wt/vol: 25.0 (g/mL) mL Lab File ID: DMGF24.D
 Level: (TRACE/LOW/MED) TRACE Date Received: _____
 % Moisture: not dec. Date Analyzed: 11/26/2014
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
 Purge Volume: 25.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
79-01-6	Trichloroethene	0.50	U
108-87-2	Methylcyclohexane	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
95-47-6	o-Xylene	0.50	U
179601-23-1	m,p-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1J - FORM I VOA-TIC
 VOLATILE ORGANICS ANALYSIS DATA SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VHBLK01

Lab Name: TESTAMERICA BURLINGTON Contract: 8E-00302
 Lab Code: STLV Case No.: RAMONA Mod. Ref No.: _____ SDG No.: 25620
 Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 200-25620-5
 Sample wt/vol: 25.0 (g/mL) mL Lab File ID: DMGF24.D
 Level: (TRACE or LOW/MED) TRACE Date Received: _____
 % Moisture: not dec. _____ Date Analyzed: 11/26/2014
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown	7.32	2.7	J B X
02	E966796 ¹	Total Alkanes	N/A		

¹EPA-designated Registry Number.

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-25620-1

SDG No.: 25620

Instrument ID: D.i Analysis Batch Number: 80554

Lab Sample ID: IC 200-80554/6 Client Sample ID: _____

Date Analyzed: 11/13/14 14:31 Lab File ID: dmg06.d GC Column: DB-624 ID: 0.2 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Methyl acetate	3.14	Analyte not identified by the data system	wilburj	11/13/14 16:57
1,2-Dibromoethane	8.82	Analyte not identified by the data system	wilburj	11/13/14 16:58
Bromoform	10.38	Analyte not identified by the data system	wilburj	11/13/14 16:58

Lab Sample ID: IC 200-80554/7 Client Sample ID: _____

Date Analyzed: 11/13/14 14:56 Lab File ID: dmg07.d GC Column: DB-624 ID: 0.2 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2-Dibromoethane	8.82	Analyte not identified by the data system	wilburj	11/13/14 17:00
Bromoform	10.38	Analyte not identified by the data system	wilburj	11/13/14 17:00

Lab Sample ID: ICIS 200-80554/8 Client Sample ID: _____

Date Analyzed: 11/13/14 15:21 Lab File ID: dmg08.d GC Column: DB-624 ID: 0.2 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2-Dichloropropane-d6	6.44	Split peak	wilburj	11/13/14 17:01

Lab Sample ID: IC 200-80554/9 Client Sample ID: _____

Date Analyzed: 11/13/14 15:46 Lab File ID: dmg09.d GC Column: DB-624 ID: 0.2 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2-Dichloropropane-d6	6.44	Split peak	wilburj	11/13/14 17:02

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-25620-1SDG No.: 25620Instrument ID: D.i Analysis Batch Number: 81350Lab Sample ID: CCVIS 200-81350/3 Client Sample ID: _____Date Analyzed: 11/26/14 12:02 Lab File ID: dmgf03.d GC Column: DB-624 ID: 0.2 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Dichlorodifluoromethane	1.49	Baseline event	wilburj	11/26/14 12:24
1,2-Dichloropropane-d6	6.44	Split peak	wilburj	11/26/14 12:24

Lab Sample ID: CCVC 200-81350/25 Client Sample ID: _____Date Analyzed: 11/26/14 21:08 Lab File ID: dmgf25.d GC Column: DB-624 ID: 0.2 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Dichlorodifluoromethane	1.55	Baseline event	wilburj	11/28/14 10:25

REAGENT TRACEABILITY CROSS-REFERENCE

Lab Name: TestAmerica Burlington Job No.: 200-25620-1

SDG No.: 25620

Reagent Container	Reagent ID	Reagent Description	Preparation Date	Expiration Date
668204	VMBFBw_00015	BFB TUNE 25 PPM	06/13/2014	12/13/2014
720557	VMSOMTRISw_00092	SOM TR ISTD 20 PPM	10/23/2014	11/23/2014
727009	VMSOMTRSUw_00086	SOM TR DMC 20 PPM	11/03/2014	12/03/2014
728239	VMSOMTRCALw_00083	SOM TR CAL 20 PPM	11/05/2014	12/05/2014
738107	VMSOMTRISw_00093	SOM TR ISTD 20 PPM	11/25/2014	12/25/2014

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington

Job No.: 200-25620-1

SDG No.: 25620

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
VMBFBw_00015	12/13/14	06/13/14	METHANOL, Lot 125253	25 mL	VMBFBs_00013	125 uL	BFB	25 ug/mL
.VMBFBs 00013	12/11/18		RESTEK, Lot A091069		(Purchased Reagent)		BFB	5000 ug/mL
VMSOMTRCALw_00083	12/05/14	11/05/14	METHANOL, Lot 134079	4000 uL	VM8260CALbs_00161	40 uL	Bromomethane	20 ug/mL
							Chloroethane	20 ug/mL
							Chloromethane	20 ug/mL
							Dichlorodifluoromethane	20 ug/mL
							Trichlorofluoromethane	20 ug/mL
							Vinyl chloride	20 ug/mL
					VMSOMCALas_00021	40 uL	1,1,1-Trichloroethane	20 ug/mL
							1,1,2,2-Tetrachloroethane	20 ug/mL
							1,1,2-Trichloro-1,2,2-trifluoroethane	20 ug/mL
							1,1,2-Trichloroethane	20 ug/mL
							1,1-Dichloroethane	20 ug/mL
							1,1-Dichloroethene	20 ug/mL
							1,2,3-Trichlorobenzene	20 ug/mL
							1,2,4-Trichlorobenzene	20 ug/mL
							1,2-Dibromo-3-Chloropropane	20 ug/mL
							1,2-Dibromoethane	20 ug/mL
							1,2-Dichlorobenzene	20 ug/mL
							1,2-Dichloroethane	20 ug/mL
							1,2-Dichloropropane	20 ug/mL
							1,3-Dichlorobenzene	20 ug/mL
							1,4-Dichlorobenzene	20 ug/mL
							Benzene	20 ug/mL
							Bromochloromethane	20 ug/mL
							Bromodichloromethane	20 ug/mL
							Bromoform	20 ug/mL
							Carbon disulfide	20 ug/mL
							Carbon tetrachloride	20 ug/mL
							Chlorobenzene	20 ug/mL
							Chloroform	20 ug/mL
							cis-1,2-Dichloroethene	20 ug/mL
							cis-1,3-Dichloropropene	20 ug/mL
							Cyclohexane	20 ug/mL
							Dibromochloromethane	20 ug/mL
							Ethylbenzene	20 ug/mL
							Isopropylbenzene	20 ug/mL
							m,p-Xylene	20 ug/mL
							Methyl acetate	20 ug/mL
							Methyl tert-butyl ether	20 ug/mL
							Methylcyclohexane	20 ug/mL
							Methylene Chloride	20 ug/mL
							o-Xylene	20 ug/mL
							Styrene	20 ug/mL
							Tetrachloroethene	20 ug/mL
							Toluene	20 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington

Job No.: 200-25620-1

SDG No.: 25620

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							trans-1,2-Dichloroethene	20 ug/mL
							trans-1,3-Dichloropropene	20 ug/mL
							Trichloroethene	20 ug/mL
					VMSOMCALbs_00030	160 uL	2-Butanone	200 ug/mL
							2-Hexanone	200 ug/mL
							4-Methyl-2-pentanone	200 ug/mL
					VMSOMSUs_00069	40 uL	Acetone	200 ug/mL
							Chloroethane-d5	20 ug/mL
					VMSOMSUs_00118	320 uL	Vinyl Chloride-d3	20 ug/mL
							2-Butanone-d5	200 ug/mL
					VMSOMSUs_00047	40 uL	2-Hexanone-d5	200 ug/mL
							1,1,2,2-Tetrachloroethane-d2	20 ug/mL
							1,1-Dichloroethene-d2	20 ug/mL
							1,2-Dichlorobenzene-d4	20 ug/mL
1,2-Dichloroethane-d4	20 ug/mL							
1,2-Dichloropropane-d6	20 ug/mL							
Benzene-d6	20 ug/mL							
Chloroform-d	20 ug/mL							
Toluene-d8	20 ug/mL							
VMTHFs_00021	400 uL	trans-1,3-Dichloropropene-d4	20 ug/mL					
		Tetrahydrofuran	200 ug/mL					
.VM8260CALbs_00161	12/05/14		RESTEK, Lot A0103909		(Purchased Reagent)		Bromomethane	2000 ug/mL
							Chloroethane	2000 ug/mL
							Chloromethane	2000 ug/mL
							Dichlorodifluoromethane	2000 ug/mL
							Trichlorofluoromethane	2000 ug/mL
							Vinyl chloride	2000 ug/mL
.VMSOMCALas_00021	02/28/15		Restek, Lot A086827		(Purchased Reagent)		1,1,1-Trichloroethane	2000 ug/mL
							1,1,2,2-Tetrachloroethane	2000 ug/mL
							1,1,2-Trichloro-1,2,2-trifluoroethane	2000 ug/mL
							1,1,2-Trichloroethane	2000 ug/mL
							1,1-Dichloroethane	2000 ug/mL
							1,1-Dichloroethene	2000 ug/mL
							1,2,3-Trichlorobenzene	2000 ug/mL
							1,2,4-Trichlorobenzene	2000 ug/mL
							1,2-Dibromo-3-Chloropropane	2000 ug/mL
							1,2-Dibromoethane	2000 ug/mL
							1,2-Dichlorobenzene	2000 ug/mL
							1,2-Dichloroethane	2000 ug/mL
							1,2-Dichloropropane	2000 ug/mL
							1,3-Dichlorobenzene	2000 ug/mL
							1,4-Dichlorobenzene	2000 ug/mL
							Benzene	2000 ug/mL
							Bromochloromethane	2000 ug/mL
							Bromodichloromethane	2000 ug/mL
							Bromoform	2000 ug/mL
							Carbon disulfide	2000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington

Job No.: 200-25620-1

SDG No.: 25620

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Carbon tetrachloride	2000 ug/mL
							Chlorobenzene	2000 ug/mL
							Chloroform	2000 ug/mL
							cis-1,2-Dichloroethene	2000 ug/mL
							cis-1,3-Dichloropropene	2000 ug/mL
							Cyclohexane	2000 ug/mL
							Dibromochloromethane	2000 ug/mL
							Ethylbenzene	2000 ug/mL
							Isopropylbenzene	2000 ug/mL
							m,p-Xylene	2000 ug/mL
							Methyl acetate	2000 ug/mL
							Methyl tert-butyl ether	2000 ug/mL
							Methylcyclohexane	2000 ug/mL
							Methylene Chloride	2000 ug/mL
							o-Xylene	2000 ug/mL
							Styrene	2000 ug/mL
							Tetrachloroethene	2000 ug/mL
							Toluene	2000 ug/mL
							trans-1,2-Dichloroethene	2000 ug/mL
							trans-1,3-Dichloropropene	2000 ug/mL
							Trichloroethene	2000 ug/mL
.VMSOMCALbs_00030	10/14/15		Restek, Lot A0101160		(Purchased Reagent)		2-Butanone	5000 ug/mL
							2-Hexanone	5000 ug/mL
							4-Methyl-2-pentanone	5000 ug/mL
							Acetone	5000 ug/mL
.VMSOMSUas_00069	10/06/15		Absolute, Lot 011614		(Purchased Reagent)		Chloroethane-d5	2000 ug/mL
							Vinyl Chloride-d3	2000 ug/mL
.VMSOMSUs_00118	11/03/15		Absolute, Lot 080414		(Purchased Reagent)		2-Butanone-d5	2500 ug/mL
							2-Hexanone-d5	2500 ug/mL
.VMSOMSUcs_00047	04/09/15		Absolute, Lot 040912		(Purchased Reagent)		1,1,2,2-Tetrachloroethane-d2	2000 ug/mL
							1,1-Dichloroethene-d2	2000 ug/mL
							1,2-Dichlorobenzene-d4	2000 ug/mL
							1,2-Dichloroethane-d4	2000 ug/mL
							1,2-Dichloropropane-d6	2000 ug/mL
							Benzene-d6	2000 ug/mL
							Chloroform-d	2000 ug/mL
							Toluene-d8	2000 ug/mL
							trans-1,3-Dichloropropene-d4	2000 ug/mL
.VMTHFs 00021	10/14/15		RESTEK, Lot A096047		(Purchased Reagent)		Tetrahydrofuran	2000 ug/mL
VMSOMTRISw_00092	11/23/14	10/23/14	METHANOL, Lot 134079	4400 uL	VMSOMISs_00018	35.2 uL	1,4-Dichlorobenzene-d4	20 ug/mL
							1,4-Difluorobenzene	20 ug/mL
							Chlorobenzene-d5	20 ug/mL
.VMSOMISs_00018	09/08/15		RESTEK, Lot A090187		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2500 ug/mL
							1,4-Difluorobenzene	2500 ug/mL
							Chlorobenzene-d5	2500 ug/mL
VMSOMTRISw_00093	12/25/14	11/25/14	METHANOL, Lot 125253	4400 uL	VMSOMISs_00018	35.2 uL	1,4-Dichlorobenzene-d4	20 ug/mL
							1,4-Difluorobenzene	20 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington

Job No.: 200-25620-1

SDG No.: 25620

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.VMSOMISs_00018	09/08/15		RESTEK, Lot A090187		(Purchased Reagent)		Chlorobenzene-d5	20 ug/mL
							1,4-Dichlorobenzene-d4	2500 ug/mL
							1,4-Difluorobenzene	2500 ug/mL
							Chlorobenzene-d5	2500 ug/mL
VMSOMTRSuw_00086	12/03/14	11/03/14	METHANOL, Lot 134079	4400 uL	VMSOMSUs_00069	44 uL	Chloroethane-d5	20 ug/mL
							Vinyl Chloride-d3	20 ug/mL
					VMSOMSUs_00118	352 uL	2-Butanone-d5	200 ug/mL
							2-Hexanone-d5	200 ug/mL
					VMSOMSUs_00047	44 uL	1,1,2,2-Tetrachloroethane-d2	20 ug/mL
							1,1-Dichloroethene-d2	20 ug/mL
							1,2-Dichlorobenzene-d4	20 ug/mL
							1,2-Dichloroethane-d4	20 ug/mL
							1,2-Dichloropropane-d6	20 ug/mL
							Benzene-d6	20 ug/mL
							Chloroform-d	20 ug/mL
							Toluene-d8	20 ug/mL
							trans-1,3-Dichloropropene-d4	20 ug/mL
.VMSOMSUs_00069	10/06/15		Absolute, Lot 011614		(Purchased Reagent)		Chloroethane-d5	2000 ug/mL
							Vinyl Chloride-d3	2000 ug/mL
.VMSOMSUs_00118	11/03/15		Absolute, Lot 080414		(Purchased Reagent)		2-Butanone-d5	2500 ug/mL
							2-Hexanone-d5	2500 ug/mL
.VMSOMSUs_00047	04/09/15		Absolute, Lot 040912		(Purchased Reagent)		1,1,2,2-Tetrachloroethane-d2	2000 ug/mL
							1,1-Dichloroethene-d2	2000 ug/mL
							1,2-Dichlorobenzene-d4	2000 ug/mL
							1,2-Dichloroethane-d4	2000 ug/mL
							1,2-Dichloropropane-d6	2000 ug/mL
							Benzene-d6	2000 ug/mL
							Chloroform-d	2000 ug/mL
							Toluene-d8	2000 ug/mL
trans-1,3-Dichloropropene-d4	2000 ug/mL							



Environmental Science Division

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