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RMT

Technical Memorandum

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From: Graham Crockford and Stacy Metz, RMT

Project No.: 00-08070.13 (02751.13)

Subject: Summary of Third and Fourth Quarter 2010 Soil Gas Monitoring Data and Activities Completed to Evaluate the Potential for Off-Site Vapor Intrusion
RCRA 3008(h) Consent Order (RCRA-05-2010-0012) – Tecumseh Products Company

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Introduction

This Technical Memorandum provides a summary of the third and fourth quarter 2010 soil gas monitoring activities and an update regarding the evaluation of the potential for off-site vapor intrusion at the former Tecumseh Products Company (TPC) site in Tecumseh, Michigan. TPC retained RMT, Inc. (RMT) to investigate soil and groundwater conditions at the site. This Technical Memorandum includes a description of relevant field activities conducted during the third quarter and fourth quarter of 2010. Shallow groundwater data and soil gas data are compared to screening levels to determine if the potential of volatilization to indoor air may exist. These data will be used to develop a strategy to address any significant or unacceptable human exposures in accordance with the RCRA Administrative Order on Consent (RCRA 05-2010-0012) for the site.

Summary of Applicable Screening Levels

Groundwater

Residential and non-residential groundwater screening levels for vapor intrusion (GWSLs) were calculated in accordance with the Michigan Department of Natural Resources and Environment (MDNRE) Remediation and Redevelopment Division Program Redesign 2009 document titled Background Document: Draft Proposed Vapor Intrusion Indoor Air Criteria (IAC), Soil Gas Criteria (SGC), and Groundwater Screening Levels ($GW_{VI}SLs$) for Vapor Intrusion, using both residential and non-residential exposure scenarios and the most recent chemical specific toxicity values accepted and/or published by the United States Environmental Protection Agency (USEPA). Proposed GWSLs were approved by the USEPA in a comment letter dated August 24, 2010. These screening levels area included in Table 1.

US EPA ARCHIVE DOCUMENT

Soil Gas

Site specific residential and non-residential soil gas screening levels for vapor intrusion (SGSLs) were calculated using and attenuation factor of 0.003, based on generic site conditions. These calculations were included in the July 15, 2010 Technical Memorandum titled "Summary of Off-Site Soil Gas Investigation Activities – March through April 2010." In a comment letter dated August 24, 2010, Michelle Mullin of USEPA stated the proposed SGSLs were not approved, and provided alternative USEPA approved residential SGSLs calculated based on an attenuation factor of 0.1. The USEPA attenuation factor of 0.1 is based on an empirical correlation between soil gas data and indoor air data in the USEPA vapor intrusion database. TPC maintains that a soil gas attenuation factor of 0.1 is excessively conservative. TPC will consider the USEPA residential SGSLs and other appropriate data when evaluating potential risks from volatilization to indoor air at residential properties.

As described in the August 2010 Review of the Draft 2002 Subsurface Vapor Intrusion Guidance prepared by USEPA, current USEPA guidance focuses primarily on single family residential buildings. The potential for volatilization to indoor air is much different in commercial and industrial structures, such as those around perimeter of the former TPC site. Commercial/industrial building properties (slab-on-grade construction, larger building footprints, industrial air handling systems, higher ceilings, more indoor-outdoor air exchange due to loading dock activities, etc.) are expected to result in higher attenuation (*e.g.*, a lower attenuation factor) at these properties. Based on an evaluation of paired indoor air/sub-slab soil gas data from the TPC manufacturing facility, TPC believes that an attenuation factor of 0.003 is a reasonable and conservative soil gas attenuation factor for commercial and industrial properties around the TPC site. USEPA approved residential, calculated site specific residential and proposed non-residential SGSLs are included in Table 2 for comparison to soil gas data.

Summary of Field Activities

Relevant third and fourth quarter 2010 groundwater and soil gas investigation activities, which were conducted between September 17, 2010 and December 9, 2010, are described below:

- On September 17, 2010, RMT conducted additional investigation activities, which included:
  - Advancement of soil borings at 3 locations to evaluate site geology and depth to groundwater (Attachment 1);
  - Installation of 2 new soil gas monitoring points (SG-15 and SG-16). Sample locations are shown on Figure 1. See Attachment 1 for sample point construction forms. Note: shallow perched groundwater confounded the installation of SG-15. The sample point was installed between the perched groundwater and the true water table and grouted through the upper saturated zone in an attempt to prevent infiltration;
  - Collection of a grab groundwater sample from the true water table at 1 boring location (B-35 [11-16′]); and
  - Analysis of the groundwater sample for volatile organic compounds (VOCs).

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- Between September 21 and September 23, 2010, RMT conducted a soil gas sample event, which included:
  - Vacuum leak testing sampling equipment prior to use. A vacuum was applied to the sampling assembly and measured on the flow regulator. Equipment that did not hold a vacuum for at least 1 minute with no measurable change in pressure was not used.
  - Collection of a soil gas sample at all soil gas sample point locations, except SG-12, SG-14, and SG-15 where water in the sample point prevented sample collection, and
  - Analysis of soil gas samples by method TO-15 for the project specific list of chlorinated VOCs (CVOCs).
- On October 21, 2010, in response to a quality assessment of the September 2010 soil gas data, a re-sample event was conducted at four sample locations (SG-01, SG-02, SG-03 and SG-05). The re-sample event included vacuum leak testing, collection of soil gas samples, and analysis as described above.
- On December 9, 2010, RMT conducted an additional soil gas sample event, which included:
  - Vacuum leak testing sampling equipment prior to use. A vacuum was applied to the sampling assembly and measured on the flow regulator. Equipment that did not hold a vacuum for at least 1 minute with no measurable change in pressure was not used.
  - Collection of a soil gas sample at all soil gas sample point locations, except SG-02, SG-08, SG-14, and SG-15 where water in the sample point prevented sample collection, and
  - Analysis of soil gas samples by method TO-15 for the project specific list of CVOCs.

Sampling and investigation activities were conducted in accordance with the Quality Assurance Project Plan (QAPP) which was submitted to the USEPA for review in August 2010.

Results and Data Analysis

Groundwater and soil gas investigation activities were conducted to identify off-site properties, in areas that exceeded screening criteria.

VOCs in Shallow Groundwater

On April 20, 2009 RMT collected two groundwater samples at sample location B-35. Water samples were collected with the temporary well screen set from 5-9 feet below ground surface (ft bgs) and from 30-34 ft bgs. Concentrations of CVOCs were below GWSLs in the sample collected from 5-9 ft bgs. However sample results from B-35 (30-34′) indicted a vinyl chloride concentration above the GWSL. Subsequent development of groundwater contour maps and geologic cross sections indicated that the sample B-35 (5-9′) was collected from perched groundwater and did not represent the concentration of CVOCs at the true water table. A second boring at the location of B-35 was conducted and a groundwater sample was collected from the true water table. No VOCs were detected above GWSLs at B-35 (11-16′). Table 1 provides a summary of detected CVOCs in shallow groundwater collected March 2009 and September 2010.

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Shallow groundwater data were used to develop Figure 2, which shows the extent of VOCs above GWSLs in shallow groundwater. The majority of sample locations where CVOCs were detected above GWSLs are located on-site or in the right-of-way (Patterson Street and Maumee Street) immediately downgradient of the site. Shallow groundwater concentrations exceed GWSLs at five off-site sample locations located further downgradient of the site.

— Concentrations of vinyl chloride exceed the residential GWSL (5.0 micrograms per liter [ug/L]) at three locations: MW-22 (2.0 to 10 ug/L), MW-23 (4.0 to 9.0 ug/L), and B-19 (11 ug/L). Note: Because the aquifer thickness at MW-23 is only 9 feet, the well screen was centered vertically in the aquifer, and is not a true water table well. The vinyl chloride concentration is expected to be lower in the shallower, more oxygen rich portion of the aquifer.

— Concentrations of trichloroethene (TCE) exceed both the residential GWSL (58 ug/L) and the non-residential GWSL (190 ug/L) at MW-21 (730-850 ug/L) and MW-31 (180-220 ug/L).

VOCs in Soil Gas

Soil gas sample results are presented in Table 2. Laboratory analytical reports are included in Attachment 2. CVOCs (tetrachloroethene (PCE), TCE, 1,1-dichloroethane (1,1-DCA), and/or cis-1,2-dichloroenthene (cis-1,2-DCE)) exceeded USEPA approved residential SGSLs at seven locations: at soil gas samples locations SG-01, SG-02, SG-03, SG-05, SG-06 and SG-07 in the right-of-way around the perimeter of the site and at soil gas sample location SG-09 downgradient of the southern source area near monitoring well MW-21. The proposed non-residential SGSL for TCE is also exceeded at soil gas sample location SG-01. Vinyl chloride has not been detected in any of the soil gas sample points.

Data Quality Assurance

September 2010 – Groundwater

The groundwater sample B-35 (11-16′) collected on September 17, 2010 was analyzed in conjunction with the source area investigation samples, collected September 15-17, 2010. These samples were analyzed by Trimatrix Laboratories, located in Grand Rapids, Michigan for VOCs by USEPA Method 8260B following protocols specified in the QAPP. The data quality objectives and laboratory completeness goals for the project were met, and the data are usable. The procedures specified in the methods were implemented, and the data packages contained all of the deliverables necessary for validation of the analytical data. The laboratory analytical report and the data validation report for this sample are included in the January 10, 2011 Technical Memorandum titled, “Summary of 2010 Soil and Groundwater Source Area Investigation Activities.”

September 2010 – Soil Gas

RMT collected fourteen soil gas samples, including one duplicate, from September 21 to September 23, 2010. These samples were analyzed by Pace Analytical Laboratories, located in Minneapolis, Minnesota for VOCs by TO-15 following protocols specified in the QAPP. RMT

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performed validation of the laboratory data. Potential problems with five of the samples (SG-01, Dup-01 (SG-01), SG-02, SG-03, and SG-05) were identified. The problems included:

— Poor duplicate reproducibility;

— Elevated detection limits due to unknown and unexpected matrix inferences; and

— Results which are inconsistent with historic data.

As a corrective measure, a re-sample event was conducted in October 2010 at sample locations SG-01, SG-02, SG-03, and SG-05. September 2010 data from these locations are not considered usable.

For the remainder of the data, the data quality objectives and laboratory completeness goals for the project were met, and the data are usable. The procedures specified in the methods were implemented, and the data packages contained all of the deliverables necessary for validation of the analytical data. The data validation report is included in Attachment 3.

October 2010 – Soil Gas

RMT collected five soil gas samples, including one field duplicate, on October 21, 2010. These samples were analyzed by Pace Analytical Laboratories, located in Minneapolis, Minnesota for VOCs by TO-15 following protocols specified in the QAPP. RMT performed validation of the laboratory data. The data quality objectives and laboratory completeness goals for the project were met, and the data are usable. The procedures specified in the methods were implemented, and the data packages contained all of the deliverables necessary for validation of the analytical data. The data validation report is included in Attachment 3.

December 2010 – Soil Gas

RMT collected thirteen soil gas samples, including one duplicate, on December 9, 2010. These samples were analyzed by Pace Analytical Laboratories, located in Minneapolis, Minnesota for VOCs by TO-15 following protocols specified in the QAPP. RMT has performed a preliminary review of laboratory data and no problems were identified. However, validation of the laboratory data is not yet complete. The data validation report will be included with the next technical memorandum or other report addressing the off-site volatilization to indoor air migration pathway.

Summary and Conclusions

This technical memorandum provides an evaluation of the potential for off-site vapor intrusion at the former TPC site in Tecumseh, Michigan, including a summary of groundwater and soil gas investigation activities conducted between September 17, 2010 and December 9, 2010. A brief summary of investigation activities and findings is provided below:

- Two additional soil gas sample points (SG-15 and SG-16) were installed (Figure 1).
- A soil boring was conducted, and a true water table sample was collected for analysis at boring location B-35.

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- Five residential properties (parcel numbers 325-0361-00, 325-0351-00, 325-0322-00, 325-0330-00, and 325-0323-00 on Figure 2) are located in the vicinity of soil gas sample points where USEPA approved residential SGSLs were exceeded (SG-03 and SG-09). As a presumptive remedy, TPC intends to install a sub-slab depressurization system at each of these properties. TPC has begun discussions with these homeowners.
- In the comment letter dated August 24, 2010, USEPA indicated that further investigation was needed to determine whether a complete exposure pathway existed for the two residential properties north of the site (parcel numbers 325-0120-00 and 325-0160-00). This concern was based on exceedences of the USEPA approved residential SGSLs at soil gas sample locations, SG-06 and SG-07. Soil gas sample locations SG-06 and SG-07 are located within 100 feet of monitoring wells (MW-4s and MW-2s, respectively) where groundwater concentrations exceed the non-residential GWSLs. The two residential properties are located more than 100-feet upgradient/side-gradient of the affected groundwater. Consequently, soil gas sample point SG-16 was installed in the right-of-way adjacent to the southern perimeter of parcel 325-0160-00 to determine whether the volatilization to indoor air migration pathway is potentially complete at these residences.
  - Soil gas concentrations during two sample events were below USEPA approved residential SGSLs at location SG-16.
  - The groundwater concentration at boring location B-18, located across the street from these properties, is below GWSLs.

  These multiple lines of evidence indicate that the volatilization to indoor air migration pathway is not complete at the residential properties north of the site.
- Available data suggest that the volatilization of vinyl chloride from groundwater into indoor air is not a complete exposure pathway north-northeast of the site based on the following multiple lines of evidence:
  - Vinyl chloride was not detected at B-35 (11-16'), indicating that there is no potential for the vinyl chloride detected in the deeper water at that location to volatilize into indoor air.
  - In a communication with RMT on August 27, 2010, MDNRE (Amy Salisbury, the MDNRE toxicologist specializing in vapor intrusion) indicated that vinyl chloride is rarely observed in soil gas or indoor air. The naturally oxygen rich environment of the vadose zone facilitates the degradation of vinyl chloride.
  - Consistent with MDNRE observations, vinyl chloride has not been detected in any of the soil gas sample points, including SG-10, SG-11, SG-12 and SG-13 located northeast of the site.
- The proposed non-residential SGSL for TCE is exceeded at soil gas sample location SG-01. TPC is in the process of evaluating options to address this exceedence, including source area treatment.
- Additional soil gas sampling events will be conducted during 2011 to confirm these findings.

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Tables

Table 1
Summary of Detected Chlorinated Organic Compounds in Shallow Groundwater
Former Tecumseh Products Company Site
Tecumseh, Michigan

Analyte		1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetra-chloroethene	1,1,1-Trichloroethane	Trichloroethene	Trichloro-fluoromethane	Vinyl Chloride
Residential GWSL for Vapor Intrusion		130	47	390	440	330	11	15,000	58	370	5.0
Non-Residential GWSL for Vapor Intrusion		440	157	550	610	460	37	21,000	190	510	17
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
B-01 (26'-30')	03/09/2009	**26**	**1.0**	**5.9**	**120**	**12**	<1.0	<1.0	**200**	<1.0	<1.0
B-02 (22'-26')	03/10/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.8**	<1.0	**27**
B-03 (26'-30')	03/09/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.4**
B-04 (19'-23')	03/10/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**12**
B-04 (19-23'), Dup-01	03/10/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**12**
B-05 (14'-18)	03/10/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**11**
B-10 (24-28')	4/16/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**57**	NA	<1.0
B-11 (29-33')	4/16/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0
B-12 (24-28')	4/16/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**2.5**	NA	<1.0
B-12 (24-28'), Dup-05	4/16/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**2.2**	NA	<1.0
B-13 (29-33')	4/17/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0
B-14 (16-20')	4/14/2009	<100	<100	<100	<100	<100	<100	<100	**1,100**	NA	<100
B-15 (24-28')	4/20/2009	<1.0	<1.0	<1.0	<1.0	<1.0	**1.5**	**9.9**	**2.8**	NA	<1.0
B-17 (24-28')	4/20/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0
B-18 (22-26')	4/14/2009	<1.0	<1.0	<1.0	**2.3**	<1.0	<1.0	<1.0	<1.0	NA	<1.0
B-19 (12-16')	4/15/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	**11**
B-20 (8-12')	4/15/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0
B-21 (6-10')	4/15/2009	**3.3**	<1.0	<1.0	**3.6**	<1.0	<1.0	<1.0	**6.9**	NA	**1.0**
B-22 (18-23')	4/14/2009	<20	<20	<20	<20	<20	<20	**53**	**190**	NA	<20
B-23a (14-18')	4/13/2009	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	**23**	NA	<2.0
B-23a (14-18'), Dup-01	4/13/2009	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	**26**	NA	<2.0
B-23b (14-16')	4/15/2009	<1.0	<1.0	<1.0	<1.0	<1.0	**1.7**	<1.0	**8.9**	NA	<1.0
B-24a (6-10')	4/13/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**150**	NA	<5.0
B-24b (5-7')	4/16/2009	<20	<20	<20	<20	<20	<20	**29**	**740**	NA	<20
B-24b (5-7'), Dup-04	4/16/2009	<50	<50	<50	<50	<50	<50	<50	**770**	NA	<50
B-25 (7-11')	4/17/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0
B-25 (7-11'), Dup-06	4/17/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0
B-26 (16-20')	4/14/2009	<1.0	<1.0	<1.0	**3.2**	<1.0	<1.0	<1.0	<1.0	NA	**3.1**
B-27b (8-10')	4/15/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**9.2**	NA	<1.0
B-28b (16-18')	4/16/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	**1.7**
B-29 (8-12')	4/13/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0
B-29b	11/24/2009	**27**	<2.0	<2.0	**6.2**	<2.0	**210**	**77**	**76**	<2.0	<2.0
B-30a (6-11')	4/14/2009	**2.4**	<1.0	<1.0	**36**	**4.2**	<1.0	<1.0	<1.0	NA	<1.0
B-31 (10-14')	4/13/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	**8.1**
B-32a (10-14')	4/14/2009	<1.0	<1.0	<1.0	**13**	<1.0	<1.0	<1.0	<1.0	NA	**430**
B-32b (8.5-10.5')	4/15/2009	<1.0	<1.0	<1.0	**3.4**	<1.0	**1.7**	**2.1**	**13**	NA	**1.6**
B-33 (4-8')	4/15/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0
B-33 (4-8'), Dup-03	4/15/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0
B-33b	11/24/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**4.7**	<1.0	<1.0

Notes:

Groundwater Screening Levels (GWSLs) for Vapor Intrusion were calculated in accordance with the MDNRE Remediation and Redevelopment Division Program Redesign 2009 document titled Background Document: Draft Proposed Vapor Intrusion Indoor Air Criteria (IAC), Soil Gas Criteria (SGC), and Groundwater Screening Levels (GWVISLs) for *Vapor Intrusion,* using both residential and non-residential exposure scenarios and the most recent chemical specific toxicity values accepted and/or published by the United States Environmental Protection Agency (USEPA). Proposed GWSLs were approved by USEPA in a comment letter dated August 24, 2010.

ug/L = micrograms per liter

NA = Not analyzed

Bold font denotes concentrations detected above laboratory reporting limits

Denotes concentrations above one or more groundwater screening level

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Tecumseh, Michigan

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Residential GWSL for Vapor Intrusion		130	47	390	440	330	11	15,000	58	370	5.0
Non-Residential GWSL for Vapor Intrusion		440	157	550	610	460	37	21,000	190	510	17
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
B-34 (14-18')	4/20/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0
B-35 (5-9')	4/20/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	**1.1**
B-35 (5-9'), Dup-07	4/20/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	**1.1**
B-35 (11-16')	9/17/2010	**1.1**	<1.0	<1.0	**69**	**5.9**	<1.0	<1.0	<1.0	<1.0	<1.0
B-36 (12-16')	5/13/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
B-38 (15-19')	5/13/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
B-39 (15-19')	5/13/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
B-40 (16-20')	5/15/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-01s (16-21')	3/13/2009	<20	<20	<20	<20	<20	<20	**750**	**2,700**	<20	<20
	4/20/2009	<100	<100	<100	<100	<100	<100	**1,100**	**2,200**	NA	<100
	12/09/2009	<20	<20	<20	<20	<20	<20	**1,000**	**3,400**	<20	<20
	3/17/2010	<20	<20	<20	<20	<20	<20	**1,400**	**2,500**	<20	<20
	5/18/2010	<20	<20	<20	<20	<20	<20	**1,000**	**2,700**	<20	<20
	9/3/2010	<20	<20	<20	<20	<20	<20	**750**	**2,400**	<20	<20
DUP-01 (MW-01s)	3/13/2009	<20	<20	<20	<20	<20	<20	**720**	**2,700**	<20	<20
MW-02s (23-28')	3/13/2009	<2.0	<2.0	<2.0	**2.4**	<2.0	**2.2**	**2.5**	**280**	<2.0	<2.0
	4/20/2009	<10	<10	<10	<10	<10	<10	<10	**130**	NA	<10
	12/09/2009	<2.0	<2.0	<2.0	**3.7**	<2.0	**2.7**	**2.9**	**250**	<2.0	<2.0
	3/17/2010	<2.0	<2.0	<2.0	**4.1**	<2.0	**2.3**	**3.1**	**290**	<2.0	<2.0
	5/18/2010	<2.0	<2.0	<2.0	**2.3**	<2.0	**2.4**	**2.6**	**210**	<2.0	<2.0
	9/3/2010	<2.0	<2.0	<2.0	**2.3**	<2.0	**2.3**	**2.3**	**220**	<2.0	<2.0
MW-03s (9-14')	3/13/2009	**9.1**	<2.0	<2.0	**240**	**9.1**	<2.0	<2.0	<2.0	<2.0	**140**
	4/20/2009	**18**	<10	<10	**490**	**18**	<10	<10	<10	NA	**210**
	12/08/2009	**46**	<25	<25	**2,200**	**83**	<25	<25	<25	<25	**130**
	3/17/2010	**11**	<5.0	<5.0	**460**	**17**	<5.0	<5.0	<5.0	<5.0	**42**
	5/18/2010	**14**	<5.0	<5.0	**630**	**24**	<5.0	<5.0	<5.0	<5.0	**34**
	9/3/2010	**29**	<10	<10	**1,600**	**63**	<10	<10	<10	<10	**83**
DUP-01 (MW-03s)	12/08/2009	**42**	<25	<25	**2,000**	**73**	<25	<25	<25	<25	**120**
MW-04s (15-20')	3/13/2009	<25	<25	<25	**2,100**	**70**	<25	<25	**5,000**	<25	**460**
	4/20/2009	<100	<100	<100	**1,700**	<100	<100	<100	**4,000**	NA	**520**
	12/09/2009	<50	<50	<50	**2,500**	**90**	<50	<50	**7,100**	<50	**270**
	3/17/2010	<50	<50	<50	**2,900**	**82**	<50	<50	**7,500**	<50	**520**
	5/18/2010	<50	<50	<50	**2,100**	**58**	<50	<50	**4,700**	<50	**280**
	9/3/2010	<50	<50	<50	**2,400**	**70**	<50	<50	**5,200**	<50	**200**
MW-05s (25-30')	3/13/2009	<1.0	<1.0	<1.0	<1.0	<1.0	**3.5**	<1.0	**120**	<1.0	<1.0
	4/20/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**140**	NA	<5.0
	12/10/2009	<1.0	<1.0	<1.0	<1.0	<1.0	**5.3**	<1.0	**190**	<1.0	<1.0
	3/17/2010	<1.0	<1.0	<1.0	<1.0	<1.0	**6.3**	<1.0	**160**	<1.0	<1.0
	5/17/2010	<1.0	<1.0	<1.0	<1.0	<1.0	**4.6**	<1.0	**160**	<1.0	<1.0
	9/3/2010	<1.0	<1.0	<1.0	<1.0	<1.0	**4.6**	<1.0	**140**	<1.0	<1.0

Notes:

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Table 1
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Former Tecumseh Products Company Site
Tecumseh, Michigan

Analyte		1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetra-chloroethene	1,1,1-Trichloroethane	Trichloroethene	Trichloro-fluoromethane	Vinyl Chloride
Residential GWSL for Vapor Intrusion		130	47	390	440	330	11	15,000	58	370	5.0
Non-Residential GWSL for Vapor Intrusion		440	157	550	610	460	37	21,000	190	510	17
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-06s (24-29')	3/16/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**21**	<1.0	<1.0
	4/20/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**23**	NA	<1.0
	12/09/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**37**	<1.0	<1.0
	3/18/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**31**	<1.0	<1.0
	5/17/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**33**	<1.0	<1.0
	9/3/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**29**	<1.0	<1.0
MW-07s (23.5-28.5')	3/16/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**2.1**	**10**	<1.0	<1.0
	4/20/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.6**	**11**	NA	<1.0
	12/10/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.8**	**14**	<1.0	<1.0
	3/17/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.9**	**13**	<1.0	<1.0
	5/17/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.9**	**13**	<1.0	<1.0
	9/3/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.4**	**12**	<1.0	<1.0
MW-08s (23.5-28.5')	3/16/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**11**	<1.0	<1.0
	4/20/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**10**	NA	<1.0
	12/10/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**11**	<1.0	<1.0
DUP-01 (MW-08s)	4/20/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**10**	NA	<1.0
MW-09s (7-12')	3/16/2009	<20	<20	<20	<20	<20	<20	**160**	**1,700**	<20	<20
	4/20/2009	<100	<100	<100	<100	<100	<100	**220**	**2,100**	NA	<100
	12/09/2009	<20	<20	<20	<20	<20	<20	**150**	**2,400**	<20	<20
	3/18/2010	<20	<20	<20	<20	<20	<20	**120**	**1,500**	<20	<20
	5/18/2010	<20	<20	<20	<20	<20	<20	**120**	**1,700**	<20	<20
	9/8/2010	<20	<20	<20	<20	<20	<20	**120**	**1,700**	<20	<20
MW-10s (8-13')	5/15/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/09/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/16/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/12/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/8/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
DUP-02 (MW-10s)	5/15/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11s (29-34')	5/14/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	1/13/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/15/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/14/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/8/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
DUP-02 (MW-11s)	5/14/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
DUP-01 (MW-11s)	9/3/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-12s (12-17')	5/15/2009	<1.0	<1.0	<1.0	<1.0	<1.0	**1.4**	<1.0	<1.0	<1.0	<1.0
	12/30/2009	<1.0	<1.0	<1.0	<1.0	<1.0	**1.4**	<1.0	<1.0	<1.0	<1.0
	3/15/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/14/2010	<1.0	<1.0	<1.0	<1.0	<1.0	**1.0**	<1.0	<1.0	<1.0	<1.0
	9/10/2010	<1.0	<1.0	<1.0	<1.0	<1.0	**1.6**	<1.0	<1.0	<1.0	<1.0

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Residential GWSL for Vapor Intrusion		130	47	390	440	330	11	15,000	58	370	5.0
Non-Residential GWSL for Vapor Intrusion		440	157	550	610	460	37	21,000	190	510	17
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-13s (13-18')	5/15/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/10/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/15/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/14/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/10/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-14s (4-9')	5/14/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/08/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/15/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/12/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/10/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-14d (37.5-42.5')	3/23/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/14/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/10/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-15s (30-35')	5/15/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/30/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/15/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/14/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/10/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-17s (3-8')	7/23/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/07/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/18/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/12/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/10/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-18s (26-31')	12/08/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/16/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/12/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/8/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-19s (25-30')	12/08/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.8**	**31**	<1.0	<1.0
	1/13/2010	<1.0	<1.0	<1.0	<1.0	<1.0	**1.2**	**2.3**	**36**	<1.0	<1.0
	3/16/2010	<1.0	<1.0	<1.0	<1.0	<1.0	**1.1**	**1.7**	**36**	<1.0	<1.0
	5/18/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.6**	**32**	<1.0	<1.0
	9/8/2010	<1.0	<1.0	<1.0	<1.0	<1.0	**1.2**	**1.8**	**33**	<1.0	<1.0
DUP-03 (MW-19s)	9/10/2010	<1.0	<1.0	<1.0	<1.0	<1.0	**1.0**	**1.7**	**32**	<1.0	<1.0
MW-20s (8-13')	12/30/2009	**48**	<1.0	**4.0**	**9.6**	<1.0	<1.0	**150**	**71**	**2.9**	<1.0
	1/13/2010	**50**	<1.0	**3.5**	**9.0**	<1.0	<1.0	**170**	**70**	**2.8**	<1.0
	3/17/2010	**51**	<1.0	**3.8**	**9.4**	<1.0	<1.0	**160**	**64**	**3.2**	<1.0
	5/18/2010	**58**	<2.0	**5.1**	**12**	<2.0	<2.0	**210**	**94**	**3.4**	<2.0
	9/9/2010	**34**	<2.0	**4.2**	**10**	<2.0	<2.0	**230**	**110**	**3.8**	<2.0
MW-21 (28.5-33.5')	12/08/2009	**31**	<10	<10	**59**	<10	<10	**54**	**840**	<10	<10
	1/13/2010	**28**	<10	<10	**62**	<10	<10	**56**	**730**	<10	<10
	3/23/2010	**33**	<1.0	**2.2**	**81**	**7.5**	<1.0	**62**	**850**	<1.0	<1.0
	5/18/2010	**35**	<10	<10	**89**	<10	<10	**63**	**830**	<10	<10
	10/15/2010	**26**	<10	<10	**80**	<10	<10	**59**	**810**	<10	<10
DUP-02 (MW-21)	3/23/2010	**33**	<1.0	**2.2**	**79**	**7.8**	<1.0	**61**	**810**	<1.0	<1.0

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Residential GWSL for Vapor Intrusion		130	47	390	440	330	11	15,000	58	370	5.0
Non-Residential GWSL for Vapor Intrusion		440	157	550	610	460	37	21,000	190	510	17
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-22 (25-30')	12/07/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**10**
	3/18/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**8.5**
	5/18/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**2.0**
	9/9/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**4.3**
MW-23 (17-22')	12/08/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**3.2**
	1/13/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**7.6**
	3/16/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**4.0**
	5/18/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**6.1**
	9/9/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**9.0**
MW-24s (18.5'-23.5')	12/08/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/15/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/12/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/9/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-25s (20-25')	12/10/2009	**1.7**	<1.0	<1.0	**8.8**	<1.0	<1.0	**4.8**	<1.0	<1.0	<1.0
	3/16/2010	**1.2**	<1.0	<1.0	<1.0	<1.0	<1.0	**17**	**1.1**	<1.0	<1.0
	5/14/2010	**1.2**	<1.0	<1.0	<1.0	<1.0	<1.0	**18**	**1.0**	<1.0	<1.0
	9/9/2010	**1.0**	<1.0	<1.0	<1.0	<1.0	<1.0	**19**	**1.4**	<1.0	<1.0
DUP-01 (MW-25s)	3/16/2010	**1.3**	<1.0	<1.0	<1.0	<1.0	<1.0	**18**	**1.0**	<1.0	<1.0
MW-26s (28-33')	4/6/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/14/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/10/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-27s (7-12')	3/23/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/17/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**3.0**	<1.0	<1.0
	9/9/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
DUP-02 (MW-27s)	9/9/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-28s (25-30')	3/23/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/17/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/17/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-29s (13-18')	3/18/2010	<1.0	<1.0	<1.0	**1.3**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/17/2010	<1.0	<1.0	<1.0	**1.2**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/17/2010	<1.0	<1.0	<1.0	**1.4**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-30s (11-16')	3/23/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/17/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/17/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-31 (33.3-38.3')	6/18/2010	**14**	<1.0	<1.0	**19**	**2.2**	<1.0	**20**	**180**	<1.0	<1.0
	9/9/2010	<2.0	<2.0	<2.0	**15**	<2.0	<2.0	**48**	**220**	<2.0	**2.5**
DUP-01 (MW-31)	6/18/2010	**12**	<1.0	<1.0	**19**	**2.3**	<1.0	**21**	**170**	<1.0	<1.0
MW-32s (23-28')	9/10/2010	**150**	<20	<20	**270**	**26**	<20	**220**	**2,400**	<20	<20
MW-33s (21-26')	9/10/2010	**12**	<1.0	<1.0	**13**	<1.0	<1.0	<1.0	**76**	<1.0	**64**
MW-34s (23-28')	9/17/2010	<20	<20	<20	<20	<20	<20	**1,600**	**1,100**	<20	<20

Notes:

Groundwater Screening Levels (GWSLs) for Vapor Intrusion were calculated in accordance with the MDNRE Remediation and Redevelopment Division Program Redesign 2009 document titled Background Document: Draft Proposed Vapor Intrusion Indoor Air Criteria (IAC), Soil Gas Criteria (SGC), and Groundwater Screening Levels (GWVISLs) for *Vapor Intrusion,* using both residential and non-residential exposure scenarios and the most recent chemical specific toxicity values accepted and/or published by the United States Environmental Protection Agency (USEPA). Proposed GWSLs were approved by USEPA in a comment letter dated August 24, 2010.

ug/L = micrograms per liter

NA = Not analyzed

Bold font denotes concentrations detected above laboratory reporting limits

Denotes concentrations above one or more groundwater screening level

Table 2
Summary of Chlorinated Volatile Organic Compounds in Off-Site Soil Gas
Tecumseh Products Company
Tecumseh, Michigan
December 2010

Analyte		1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Vinyl Chloride	2-Propanol
USEPA Approved Residential SGSL[1]		38	2.4	525	93	158	6.2	9,360	23	11	NC
Site Specific Residential SGSL[2]		1,300	78	17,000	3,000	5,200	210	310,000	770	360	NC
Proposed Site Specific Non-Residential SGSL[2]		4,300	260	24,000	4,300	7,300	690	440,000	2,600	1,200	NC
Units		ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
SG-01 (8-8.5')	4/5/2010	**5.7**	<2.3	**4.4**	**17.0**	<4.4	<2.3	**279**	**396**	<2.3	18,100
	5/20/2010[3]	**52.4**	<4.4	**21.6**	**184**	<4.4	**52.1**	**1,690**	**2,800**	<4.4	335,000
	10/21/2010	**74.7**	<16.8	<16.8	**272**	**25.8**	**222**	**8,300**	**32,100**	<16.8	NA
	12/9/2010	<709	<709	<709	<709	<709	<709	**6,440**	**17,800**	<709	NA
SG-01 (DUP-01)	4/5/2010	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	15,300
	5/20/2010[3]	**63.2**	<4.4	**31.0**	**245**	**22.6**	**256**	**2,120**	**3,770**	<4.4	849
SG-02 (5.5-6')	4/5/2010	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	**19.6**	<4.0	<4.0	27.4
	10/21/2010	<12.5	<12.5	<12.5	<12.5	<12.5	**532**	**328**	**1,610**	<12.5	NA
	12/9/2010[5]	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SG-03 (5-5.5')	4/5/2010	<2.6	<2.6	<2.6	<2.6	<5.1	<2.6	<2.6	<2.6	<2.6	53.1
	10/21/2010	**91.0**	<15.7	<15.7	**193**	**90.3**	<15.7	<15.7	<15.7	<15.7	NA
	12/9/2010	**47.7**	<11.9	<11.9	**98.0**	**48.5**	<11.9	<11.9	<11.9	<11.9	NA
SG-04 (5-5.5')	4/5/2010	<2.6	<2.6	<2.6	<2.6	<4.9	<2.6	<2.6	<2.6	<2.5	52.1
	9/23/2010	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	NA
	12/9/2010	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	NA
SG-05 (7.5-8')	4/5/2010	<2.6	<2.6	<2.6	<2.6	<4.9	<2.6	**28.7**	**26.6**	<2.5	103
	10/21/2010	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	**708**	**1,320**	<16.8	NA
	12/9/2010	<15.7	<15.7	<15.7	<15.7	<15.7	<15.7	**357**	**538**	<15.7	NA
SG-05 (DUP-01)	10/21/2010	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	**581**	**1,020**	<16.8	NA
	12/9/2010	<211	<211	<211	<211	<211	<211	**772**	**849**	<211	NA
SG-06 (8-8.5')	4/5/2010	<2.6	<2.6	<2.6	<2.6	<4.9	<2.6	<2.6	**7.2**	<2.5	41,200
	5/20/2010	<4.6	<4.6	<4.6	<4.6	<4.6	**9.5**	**6.0**	**104**	<4.6	1,570
	9/21/2010	<29.2	<29.2	<29.2	<29.2	<29.2	**62.2**	<29.2	**263**	<29.2	NA
	12/9/2010	<3.9	<3.9	<3.9	**6.1**	<3.9	**4.3**	**7.4**	**64.9**	<3.9	NA
SG-07 (8-8.5')	4/5/2010	<75.2	<75.2	<75.2	<75.2	<75.2	<75.2	<75.2	<75.2	<75.2	747
	5/20/2010	<5.0	<5.0	<5.0	<5.0	<5.0	**13.8**	**6.8**	**145**	<5.0	170
	9/21/2010	<69.6	<69.6	<69.6	<69.6	<69.6	**140**	<69.6	**403**	<69.6	NA
	12/9/2010	<22.2	<22.2	<22.2	<22.2	<22.2	**24.4**	<22.2	**139**	<22.2	NA

Notes:
1) USEPA approved soil gas screening levels (SGSLs) provided in a comment letter from USEPA dated August 24, 2010.
2) Site Specific DEEP SGSLs were calculated used an attenuation factor (0.003). This attenuation factor was determined using the USEPA Johnson and Ettinger Model calculation spreadsheet, Version 3.1. The site specific model used the spreadsheet default parameters conservatively assuming a sand substrate, a depth to foundation of 200 cm (basement), and a sample depth of 200 cm.
3) Elevated concentrations of 2-propanol (tracer) detected; DUP-01 results from 5/20/10 reflect true soil gas concentrations. Tracer concentration from SG-01 and analytical data from DUP-01 suggests that sample was diluted with approximately 30-percent ambient air.
4) Elevated concentrations of 2-propanol (tracer) detected. Analytical data for other analytes are presumed to be invalid (--).
5) Water in sample point prevented sample collection.
Bold font denotes concentrations detected above laboratory reporting limits.
Denotes concentrations above one or more soil gas screening level
ppbv - parts per billion by volume
NC - No Criteria
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US EPA ARCHIVE DOCUMENT

Table 2
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Tecumseh Products Company
Tecumseh, Michigan
December 2010

Analyte		1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Vinyl Chloride	2-Propanol
USEPA Approved Residential SGSL[1]		38	2.4	525	93	158	6.2	9,360	23	11	NC
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Proposed Site Specific Non-Residential SGSL[2]		4,300	260	24,000	4,300	7,300	690	440,000	2,600	1,200	NC
Units		ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
SG-08 (6.5-7')	4/5/2010	<2.6	<2.6	<2.6	<2.6	<5.1	<2.6	<2.6	<2.6	<2.6	64.9
	9/23/2010	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	**4.5**	**3.5**	<2.0	NA
	12/9/10[5]	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SG-09 (5.5-6')	4/5/2010[4]	--	--	--	--	--	--	--	--	--	1,580,000
	5/20/2010	**10.6**	<4.4	<4.4	<4.4	<4.4	<4.4	**123**	**176**	<4.4	24.8
	9/23/2010	<23.4	<23.4	<23.4	<23.4	<23.4	<23.4	**142**	**436**	<23.4	NA
	12/9/2010	<13.2	<13.2	<13.2	<13.2	<13.2	<13.2	**61.8**	**51.7**	<13.2	NA
SG-10 (5-5.5')	4/5/2010	<80.6	<80.6	<80.6	<80.6	<80.6	<80.6	<80.6	<80.6	<80.6	<80.6
	9/21/2010	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	**11.5**	<4.4	NA
	12/9/2010	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	NA
SG-11 (7.5-6')	4/5/2010	<2.8	<2.8	<2.8	<2.8	<5.4	<2.8	<2.8	<2.8	<2.8	128
	9/23/2010	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4	NA
	12/9/2010	<0.84	<0.84	<0.84	<0.84	<0.84	<0.84	<0.84	<0.84	<0.84	NA
SG-12 (5-5.5')	4/5/2010[5]	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/20/2020[5]	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/21/2010[5]	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/9/2010	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	NA
SG-13 (5.5-6')	4/5/2010	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	1,750
	5/20/2010	<4.5	<4.5	<4.5	<4.5	<4.5	<4.5	<4.5	**6.1**	<4.5	9,130
	9/23/2010	<1.5	<1.5	<1.5	**2.5**	**5.6**	<1.5	<1.5	<1.5	<1.5	NA
	12/9/2010	<1.6	<1.6	<1.6	<1.6	**2.9**	<1.6	<1.6	<1.6	<1.6	NA
SG-14 (6.5-7')[5]	4/5/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/20/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/21/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/9/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SG-15 (11-11.5')[4]	9/23/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/15/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SG-16 (7.5-8')	9/23/2010	<2.5	<2.5	<2.5	<2.5	<2.5	**2.6**	<2.5	<2.5	<2.5	NA
	12/9/2010	<15.7	<15.7	<15.7	<15.7	<15.7	<15.7	<15.7	<15.7	<15.7	NA

Notes:

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2) Site Specific DEEP SGSLs were calculated used an attenuation factor (0.003). This attenuation factor was determined using the USEPA Johnson and Ettinger Model calculation spreadsheet, Version 3.1. The site specific model used the spreadsheet default parameters conservatively assuming a sand substrate, a depth to foundation of 200 cm (basement), and a sample depth of 200 cm.

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4) Elevated concentrations of 2-propanol (tracer) detected. Analytical data for other analytes are presumed to be invalid (--).

5) Water in sample point prevented sample collection.

Bold font denotes concentrations detected above laboratory reporting limits.

Denotes concentrations above one or more soil gas screening level

ppbv - parts per billion by volume

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NS - No Sample

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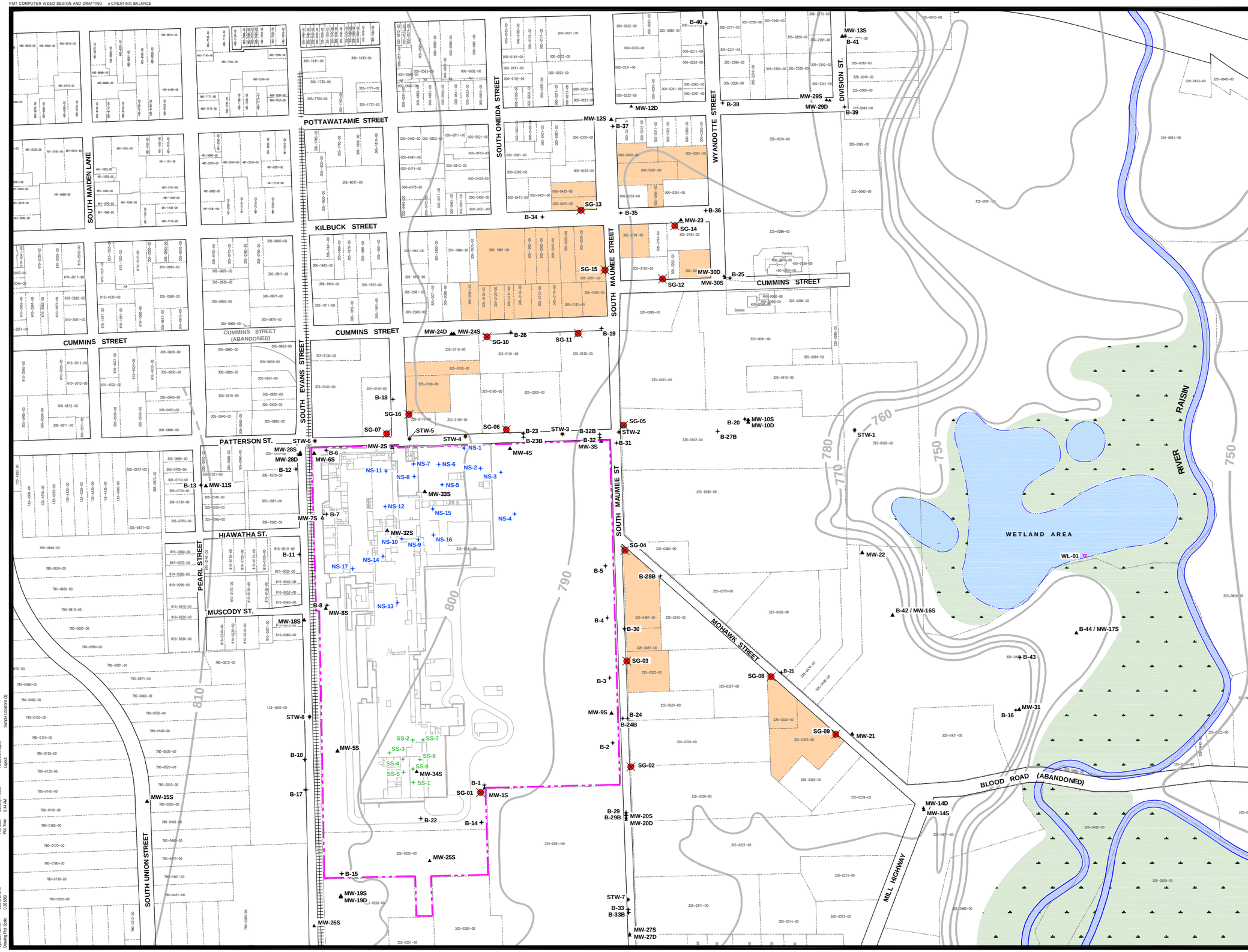
US EPA ARCHIVE DOCUMENT

US EPA ARCHIVE DOCUMENT

Figures



LEGEND

- FORMER TECUMSEH PRODUCTS SITE BOUNDARY
- PARCEL BOUNDARY
- RAILROAD TRACKS (APPROXIMATE LOCATION)
- 750 — APPROXIMATE GROUND TOPOGRAPHY BASED OFF 7.5 MINUTE U.S.G.S. TOPOGRAPHIC QUADRANGLE MAP
- B-2 — PERIMETER / OFF-SITE INVESTIGATION SOIL BORING LOCATION AND NUMBER
- MW-4S — MONITORING WELL LOCATION AND NUMBER
- NS-6 — NORTHERN SOURCE AREA INVESTIGATION BORING LOCATION AND NUMBER
- SS-2 — SOUTHERN SOURCE AREA INVESTIGATION BORING LOCATION AND NUMBER
- STW-2 — STORM WATER SEWER SAMPLE LOCATION AND NUMBER
- WL-01 — WETLAND SURFACE WATER SAMPLE LOCATION
- SG-02 — SOIL GAS SAMPLE LOCATION AND NUMBER
- FLOODPLAIN / WOODED WETLAND AREA
- RESIDENTIAL PROPERTIES WITHIN AREA OF POTENTIALLY AFFECTED GROUNDWATER

NOTES

1. BASE MAP DEVELOPED FROM SITE PLAN PROVIDED BY THE CITY OF TECUMSEH, DRAWING NO. CITY.DWG, MARCH 2009.
2. GROUND TOPOGRAPHY BASED OFF 7.5 MINUTE U.S.G.S TOPOGRAPHIC QUADRANGLE MAP AND GROUND SURVEY DATA.

N

0 200' 400' 600' 800'
SCALE IN FEET

NO.	BY	DATE	REVISION	APP'D.
5.				
4.				
3.				
2.				
1.				

FORMER TECUMSEH PRODUCTS SITE
TECUMSEH, MICHIGAN

SAMPLE LOCATIONS

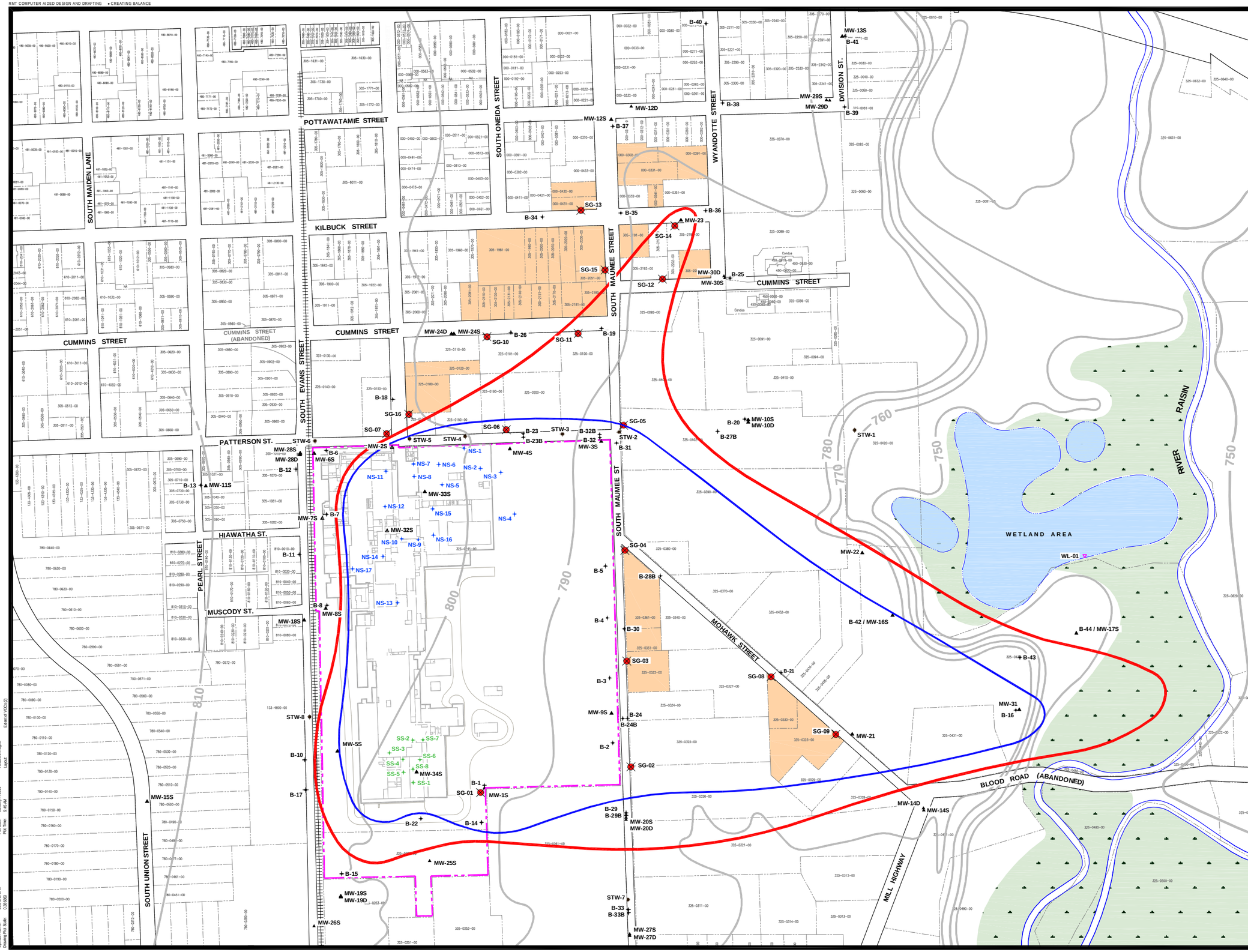
DRAWN BY: SJL	DRAWING SCALE: AS INDICATED	PROJECT NO:	J:\02751\113
CHECKED BY: SEM		FILE NO:	02751.13.01.dwg
APPROVED BY: GC	DATE PRINTED:	FIGURE 1	
DATE: January 2011			

RMT
3754 Ranchero Drive
Ann Arbor, MI 48108-2237
Phone: 734-971-7080 • Fax: 734-971-9022

PLOT DATA:
Drawing Name: J:\02751\02751B_01.01.dwg
Operator Name: LUC/DG SAM
Drawing Plot Scale: 0.00:0000

Drawing Plot Date: 1.22 Mb
Plot Date: January 7, 2011
Plot Time: 9:44 AM

Attached Xrefs:
Attached Images:
Layout:
Sample Locations (1)



LEGEND

- FORMER TECUMSEH PRODUCTS SITE BOUNDARY
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- B-2 — PERIMETER / OFF-SITE INVESTIGATION SOIL BORING LOCATION AND NUMBER
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- SS-2 — SOUTHERN SOURCE AREA INVESTIGATION BORING LOCATION AND NUMBER
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- WL-01 — WETLAND SURFACE WATER SAMPLE LOCATION
- FLOODPLAIN / WOODED WETLAND AREA
- RESIDENTIAL PROPERTIES WITHIN AREA OF POTENTIALLY AFFECTED GROUNDWATER
- EXTENT OF SHALLOW GROUNDWATER ABOVE USEPA RESIDENTIAL GWSLs
- EXTENT OF SHALLOW GROUNDWATER ABOVE PROPOSED NON-RESIDENTIAL GWSLs
- SG-02 — SOIL GAS SAMPLE LOCATION AND NUMBER

NOTES

1. BASE MAP DEVELOPED FROM SITE PLAN PROVIDED BY THE CITY OF TECUMSEH, DRAWING NO. CITY.DWG, MARCH 2009.
2. GROUND TOPOGRAPHY BASED OFF 7.5 MINUTE U.S.G.S TOPOGRAPHIC QUADRANGLE MAP AND GROUND SURVEY DATA.

N

0 200' 400' 600' 800'
SCALE IN FEET

NO.	BY	DATE	REVISION	APP'D.
5.				
4.				
3.				
2.				
1.				

FORMER TECUMSEH PRODUCTS SITE
TECUMSEH, MICHIGAN

EXTENT OF VOCs ABOVE GWSLs IN SHALLOW GROUNDWATER

DRAWN BY: SJL	DRAWING SCALE: AS INDICATED	PROJECT NO: J:\02751\113	
CHECKED BY: SEM		FILE NO: 02751.13.02.dwg	FIGURE 2
APPROVED BY: GC	DATE PRINTED:		
DATE: January 2011			

RMT
3754 Ranchero Drive
Ann Arbor, MI 48108-2237
Phone: 734-971-7080 • Fax: 734-971-9022

Attachment 1

US EPA ARCHIVE DOCUMENT

SOIL BORING LOG

RMT

BORING NO. B-35 (2010)

Facility/Project Name:	Date Drilling Started:	Date Drilling Completed:	Project Number:
Former Tecumseh Products Company	9/17/10	9/17/10	8070.13

Drilling Firm:	Drilling Method:	Surface Elev. (ft)	TOC Elevation (ft)	Total Depth (ft bgs)	Borehole Dia. (in)
Terra Probe, Inc.	Direct Push	---	---	16.0	2

Boring Location: In ROW on northeast corner of Kilbuck Street and Maumee Street

Personnel
Logged By - Stacy Metz
Driller - Craig Tanicala

Drilling Equipment: Geoprobe Advance 66

Civil Town/City/or Village:	County:	State:
Tecumseh	Lenawee	MI

Water Level Observations:
While Drilling: Date/Time 9/17/10 00:00 ▽ Depth (ft bgs) 6
After Drilling: Date/Time 9/17/10 00:00 ▼ Depth (ft bgs) 13

SAMPLE NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
				TOPSOIL			
1 HA	100		2	**WELL GRADED SAND** mostly fine to coarse sand, few gravel, dark yellowish brown (10YR 4/6), no odor, moist, medium dense.	SW		
			4	**LEAN CLAY WITH SAND** mostly clay, little sand, few gravel, slightly plastic, dark yellowish brown (10YR 4/4), no odor, moist, stiff.	CL		
			6	**WELL GRADED SAND** mostly fine to coarse sand, few gravel, dark yellowish brown (10YR 4/6), no odor, moist, medium dense. Change to saturated at 6 feet below ground surface.	SW		
2 GP	100		8	**LEAN CLAY WITH SAND** mostly clay, few to little sand, very plastic, dark grayish brown (10YR 4/2), no odor, moist to wet, medium stiff to stiff.	CL		
				SILTY SAND mostly fine sand, little silt, dark yellowish brown (10YR 4/4), no odor, moist, dense.	SM		
3 GP	70		10	**WELL GRADED SAND WITH GRAVEL** mostly fine to coarse sand, some fine to coarse gravel, few silt, dark yellowish brown (10YR 3/4), no odor, dry to moist, medium dense to dense. Change to little gravel at 11.5 feet below ground surface.	SW		Temporary well screened from 11-16 feet, groundwater sample collected at 14:21
4 GP	75		12	Change to moist to wet at 12 feet below ground surface.			
			14	Change to saturated at 13 feet below ground surface.			
			16	End of boring at 16 feet below ground surface.			

Signature: [signature]

Checked By: John Bacon

Firm: RMT, Inc.
3754 Ranchero Drive Ann Arbor, MI 48108
734-971-7080
Fax 734-971-9022

WELL CONSTRUCTION LOG

RMT

WELL NO. SG-15

Facility/Project Name:	Date Drilling Started:	Date Drilling Completed:	Project Number:
Former Tecumseh Products Company	9/17/10	9/17/10	8070.13

Drilling Firm:	Drilling Method:	Surface Elev. (ft)	TOC Elevation (ft)	Total Depth (ft bgs)	Borehole Dia. (in)
Terra Probe, Inc.	Direct Push	---	---	11.5	2

Boring Location: In ROW on west side of Maumee Street between Kilbuck and Cummins Street

Personnel
Logged By - Stacy Metz
Driller - Craig Tanicala

Drilling Equipment: Geoprobe Advance 66

Civil Town/City/or Village:	County:	State:
Tecumseh	Lenawee	MI

Water Level Observations:
While Drilling: Date/Time 9/17/10 00:00 ∇ Depth (ft bgs) 5
After Drilling: Date/Time Depth (ft bgs) NM

SAMPLE NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
				TOPSOIL				
1 HA	100		2	**SANDY LEAN CLAY** mostly clay, some fine to coarse sand, plastic, dark brown (10YR 3/3), no odor, moist, medium stiff.	CL			
			4	**SILTY SAND** mostly fine to coarse sand, little silt, dark yellowish brown (10YR 4/6), no odor, wet, medium dense. ∇ Change to saturated at 5 feet below ground surface.	SM			
2 GP	93		8	**SANDY LEAN CLAY** mostly clay, some fine to coarse sand, few silt, plastic, brown (10YR 4/3), no odor, saturated, stiff to very stiff.	CL			
3 GP	100		10	**WELL GRADED SAND WITH GRAVEL** mostly fine to coarse sand, little to some gravel, dark yellowish brown (10YR 4/6), no odor, moist to wet, medium dense.	SW			Greater than 100% recovery due to heaving sands, ~ 2.3 feet of slough
			12	End of boring at 11.5 feet below ground surface.				
			14					

SOIL BORING WELL CONSTRUCTION LOG 8070.12 2010.GPJ RMT CORP.GDT 8070.13 1/12/11

Signature:

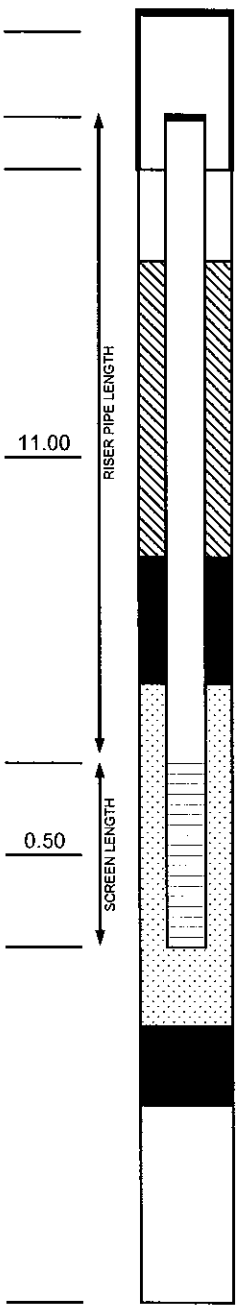
Firm: RMT, Inc.
3754 Ranchero Drive Ann Arbor, MI 48108
734-971-7080
Fax 734-971-9022

Checked By: John Bacon

RMT WELL CONSTRUCTION DIAGRAM

PROJ. NAME: TPC - Off-Site Soil Gas Investigation		WELL ID:	SG-15
PROJ. NO: 8070.13	DATE INSTALLED: 9/17/2010	INSTALLED BY: Stacy Metz	CHECKED BY: John Bacon

ELEVATION (BENCHMARK: USGS)	DEPTH BELOW OR ABOVE GROUND SURFACE (FEET)	
	0.0	GROUND SURFACE
	0.0	TOP OF CASING
	1.0	CEMENT SURFACE PLUG
		GROUT/BACKFILL MATERIAL: NA
		GROUT/BACKFILL METHOD: NA
11.00	--	GROUT
		BENTONITE SEAL MATERIAL: MEDIUM CHIPS
	10.4	BENTONITE SEAL
	11.0	TOP OF SCREEN
0.50		FILTER PACK MATERIAL: GLASS BEADS
	11.5	BOTTOM OF SCREEN
	11.5	BOTTOM OF FILTER PACK
	--	BENTONITE PLUG
		BACKFILL MATERIAL: NA
	11.5	HOLE BOTTOM



NOTES:

Approximately 1 foot of extra tubing coiled inside surface casing

CASING AND SCREEN DETAILS

TYPE OF RISER: 1/4-INCH TEFLON TUBING

PIPE SCHEDULE: NA

PIPE JOINTS: NA

SOLVENT USED? NO

SCREEN TYPE: 1/4-INCH STAINLESS STEEL

SCR. SLOT SIZE: 2-PLY WIRE MESH

BOREHOLE DIAMETER: 2 IN. FROM 0 TO 11.5 FT.
____ IN. FROM ____ TO ____ FT.

SURF. CASING DIAMETER: 4 IN. FROM 0 TO 1 FT.
____ IN. FROM ____ TO ____ FT.

WELL DEVELOPMENT

DEVELOPMENT METHOD: NA

TIME DEVELOPING: NA HOURS

WATER REMOVED: NA GALLONS

WATER ADDED: NA GALLONS

WATER CLARITY BEFORE / AFTER DEVELOPMENT

CLARITY BEFORE: NA

COLOR BEFORE: NA

CLARITY AFTER: NA

COLOR AFTER: NA

ODOR (IF PRESENT): NA

WATER LEVEL SUMMARY

MEASUREMENT (FEET)			DATE	TIME
DTB BEFORE DEVELOPING:	NA	T/PVC		
DTB AFTER DEVELOPING:	NA	T/PVC		
SWE BEFORE DEVELOPING:	NA	T/PVC		
SWE AFTER DEVELOPING:	NA	T/PVC		
OTHER SWE:		T/PVC		
OTHER SWE:		T/PVC		

PROTECTIVE CASING DETAILS

PERMANENT, LEGIBLE WELL LABEL ADDED? ☑ YES ☐ NO

PROTECTIVE COVER INSTALLED? ☑ YES ☐ NO

LOCK KEY NUMBER: NA

REVISED 03/2008

WELL CONSTRUCTION LOG

RMT

WELL NO. SG-16

Facility/Project Name:	Date Drilling Started:	Date Drilling Completed:	Project Number:
Former Tecumseh Products Company	9/17/10	9/17/10	8070.13

Drilling Firm:	Drilling Method:	Surface Elev. (ft)	TOC Elevation (ft)	Total Depth (ft bgs)	Borehole Dia. (in)
Terra Probe, Inc.	Direct Push	---	---	8.5	2

Boring Location: In ROW on east side of Ottawa Street, 115 feet north of Patterson Street

Personnel
Logged By - Stacy Metz
Driller - Craig Tanicala

Drilling Equipment: Geoprobe Advance 66

Civil Town/City/or Village:	County:	State:
Tecumseh	Lenawee	MI

Water Level Observations:
While Drilling: Date/Time Depth (ft bgs) NM
After Drilling: Date/Time Depth (ft bgs) NM

SAMPLE NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
1 HA	100			**TOPSOIL**				
2 GP	100		2	**CLAYEY SAND WITH GRAVEL** mostly fine to coarse sand, little clay, little coarse gravel, trace to few cobbles, slightly plastic, dark yellowish brown (10YR 3/4), no odor, moist, very dense.	SC			
				WELL GRADED SAND WITH GRAVEL mostly fine to coarse sand, some fine to coarse subrounded to subangular gravel, dark yellowish brown (10YR 3/6), no odor, dry, loose to medium dense.				
			4	Same as above.				
3 GP	96		6		SW			
			8	**FILL** bentonite chips, dry.				
				End of boring at 8.5 feet below ground surface.				
			10					
			12					
			14					

SOIL BORING WELL CONSTRUCTION LOG 8070.12_2010.GPJ RMT_CORP.GDT 8070.13 1/12/11

Signature:

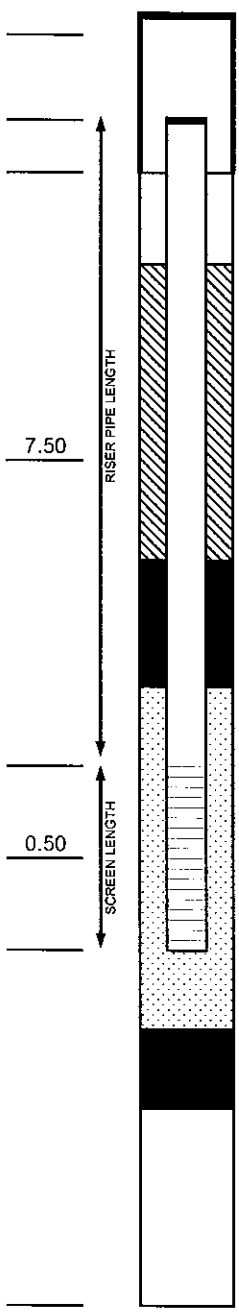
Firm: RMT, Inc.
3754 Ranchero Drive Ann Arbor, MI 48108
734-971-7080
Fax 734-971-9022

Checked By: John Bacon

RMT WELL CONSTRUCTION DIAGRAM

PROJ. NAME: TPC - Off-Site Soil Gas Investigation		WELL ID:	SG-16
PROJ. NO: 8070.13	DATE INSTALLED: 9/17/2010 INSTALLED BY: Stacy Metz		CHECKED BY: John Bacon

ELEVATION (BENCHMARK: USGS)	DEPTH BELOW OR ABOVE GROUND SURFACE (FEET)



0.0	GROUND SURFACE
0.0	TOP OF CASING
1.0	CEMENT SURFACE PLUG
	GROUT/BACKFILL MATERIAL: NA
	GROUT/BACKFILL METHOD: NA
--	GROUT
	BENTONITE SEAL MATERIAL: MEDIUM CHIPS
6.5	BENTONITE SEAL
7.5	TOP OF SCREEN
	FILTER PACK MATERIAL: GLASS BEADS
8.0	BOTTOM OF SCREEN
8.0	BOTTOM OF FILTER PACK
--	BENTONITE PLUG
	BACKFILL MATERIAL: NATURAL COLLAPSE
8.5	HOLE BOTTOM

NOTES:

Approximately 1 foot of extra tubing coiled inside surface casing

CASING AND SCREEN DETAILS

TYPE OF RISER: 1/4-INCH TEFLON TUBING

PIPE SCHEDULE: NA

PIPE JOINTS: NA

SOLVENT USED? NO

SCREEN TYPE: 1/4-INCH STAINLESS STEEL

SCR. SLOT SIZE: 2-PLY WIRE MESH

BOREHOLE DIAMETER:	2	IN. FROM	0	TO	8.5	FT.
		IN. FROM		TO		FT.
SURF. CASING DIAMETER:	4	IN. FROM	0	TO	1	FT.
		IN. FROM		TO		FT.

WELL DEVELOPMENT

DEVELOPMENT METHOD: NA

TIME DEVELOPING: NA HOURS

WATER REMOVED: NA GALLONS

WATER ADDED: NA GALLONS

WATER CLARITY BEFORE / AFTER DEVELOPMENT

CLARITY BEFORE: NA

COLOR BEFORE: NA

CLARITY AFTER: NA

COLOR AFTER: NA

ODOR (IF PRESENT): NA

WATER LEVEL SUMMARY

MEASUREMENT (FEET)			DATE	TIME
DTB BEFORE DEVELOPING:	NA	T/PVC		
DTB AFTER DEVELOPING:	NA	T/PVC		
SWE BEFORE DEVELOPING:	NA	T/PVC		
SWE AFTER DEVELOPING:	NA	T/PVC		
OTHER SWE:		T/PVC		
OTHER SWE:		T/PVC		

PROTECTIVE CASING DETAILS

PERMANENT, LEGIBLE WELL LABEL ADDED? ☑ YES ☐ NO

PROTECTIVE COVER INSTALLED? ☑ YES ☐ NO

LOCK KEY NUMBER: NA

REVISED 03/2008

Attachment 2

US EPA ARCHIVE DOCUMENT

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

October 07, 2010

Ms. Stacy Metz
RMT, INC
3754 Ranchero Dr.
Ann Arbor, MI 48108

RE: Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10138942

Dear Ms. Metz:
Enclosed are the analytical results for sample(s) received by the laboratory on September 24, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carolynne Trout

Carolynne Trout

carolynne.trout@pacelabs.com
Project Manager

Enclosures

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REPORT OF LABORATORY ANALYSIS

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Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10138942

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Iowa Certification #: 368
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New Mexico Certification #: Pace
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: D9921
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Washington Certification #: C754
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10138942

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10138942001	**SG-01**	Air	09/21/10 08:52	09/24/10 09:38
10138942002	**SG-06**	Air	09/21/10 09:39	09/24/10 09:38
10138942003	**SG-07**	Air	09/21/10 10:24	09/24/10 09:38
10138942004	**SG-10**	Air	09/21/10 11:03	09/24/10 09:38
10138942005	**SG-11**	Air	09/23/10 09:49	09/24/10 09:38
10138942006	**SG-13**	Air	09/23/10 10:16	09/24/10 09:38
10138942007	**SG-02**	Air	09/23/10 11:52	09/24/10 09:38
10138942008	**SG-03**	Air	09/23/10 12:25	09/24/10 09:38
10138942009	**SG-16**	Air	09/23/10 11:15	09/24/10 09:38
10138942010	**SG-05**	Air	09/23/10 12:53	09/24/10 09:38
10138942011	**SG-04**	Air	09/23/10 13:21	09/24/10 09:38
10138942012	**DUP-01**	Air	09/21/10 00:00	09/24/10 09:38
10138942013	**SG-08**	Air	09/23/10 13:46	09/24/10 09:38
10138942014	**SG-09**	Air	09/23/10 14:11	09/24/10 09:38
10138942015	**1000**	Air		09/24/10 09:38
10138942016	**1310**	Air		09/24/10 09:38
10138942017	**1011**	Air		09/24/10 09:38
10138942018	**1167**	Air		09/24/10 09:38
10138942019	**1312**	Air		09/24/10 09:38
10138942020	**0993**	Air		09/24/10 09:38

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SAMPLE ANALYTE COUNT

Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10138942

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10138942001	**SG-01**	TO-15	CJR	9
10138942002	**SG-06**	TO-15	CJR	9
10138942003	**SG-07**	TO-15	CJR	9
10138942004	**SG-10**	TO-15	CJR	9
10138942005	**SG-11**	TO-15	CJR	9
10138942006	**SG-13**	TO-15	CJR	9
10138942007	**SG-02**	TO-15	CJR	9
10138942008	**SG-03**	TO-15	CJR	9
10138942009	**SG-16**	TO-15	CJR	9
10138942010	**SG-05**	TO-15	CJR	9
10138942011	**SG-04**	TO-15	CJR	9
10138942012	**DUP-01**	TO-15	CJR	9
10138942013	**SG-08**	TO-15	CJR	9
10138942014	**SG-09**	TO-15	CJR	9

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PROJECT NARRATIVE

Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10138942

Method: **TO-15**
Description: TO15 MSV AIR
Client: RMT, INC
Date: October 07, 2010

General Information:
14 samples were analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Sample Comments:

A3: This result is reported from a serial dilution
- SG-01 (Lab ID: 10138942001)
- SG-07 (Lab ID: 10138942003)
- SG-02 (Lab ID: 10138942007)
- SG-05 (Lab ID: 10138942010)
- DUP-01 (Lab ID: 10138942012)
- SG-09 (Lab ID: 10138942014)

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10138942

Sample: SG-01 **Lab ID: 10138942001** Collected: 09/21/10 08:52 Received: 09/24/10 09:38 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	**172**	ppbv	134	268.8		10/01/10 04:28	75-34-3	
1,2-Dichloroethane	ND	ppbv	134	268.8		10/01/10 04:28	107-06-2	
1,1-Dichloroethene	ND	ppbv	134	268.8		10/01/10 04:28	75-35-4	
cis-1,2-Dichloroethene	**669**	ppbv	134	268.8		10/01/10 04:28	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	134	268.8		10/01/10 04:28	156-60-5	
Tetrachloroethene	**1990**	ppbv	134	268.8		10/01/10 04:28	127-18-4	
1,1,1-Trichloroethane	**30100**	ppbv	8600	17203.2		10/01/10 11:24	71-55-6	
Trichloroethene	**264000**	ppbv	8600	17203.2		10/01/10 11:24	79-01-6	
Vinyl chloride	ND	ppbv	134	268.8		10/01/10 04:28	75-01-4	

Sample: SG-06 **Lab ID: 10138942002** Collected: 09/21/10 09:39 Received: 09/24/10 09:38 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	29.2	58.46		10/01/10 03:09	75-34-3	
1,2-Dichloroethane	ND	ppbv	29.2	58.46		10/01/10 03:09	107-06-2	
1,1-Dichloroethene	ND	ppbv	29.2	58.46		10/01/10 03:09	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	29.2	58.46		10/01/10 03:09	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	29.2	58.46		10/01/10 03:09	156-60-5	
Tetrachloroethene	**62.2**	ppbv	29.2	58.46		10/01/10 03:09	127-18-4	
1,1,1-Trichloroethane	ND	ppbv	29.2	58.46		10/01/10 03:09	71-55-6	
Trichloroethene	**263**	ppbv	29.2	58.46		10/01/10 03:09	79-01-6	
Vinyl chloride	ND	ppbv	29.2	58.46		10/01/10 03:09	75-01-4	

Sample: SG-07 **Lab ID: 10138942003** Collected: 09/21/10 10:24 Received: 09/24/10 09:38 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	69.6	139.2		10/01/10 04:02	75-34-3	
1,2-Dichloroethane	ND	ppbv	69.6	139.2		10/01/10 04:02	107-06-2	
1,1-Dichloroethene	ND	ppbv	69.6	139.2		10/01/10 04:02	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	69.6	139.2		10/01/10 04:02	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	69.6	139.2		10/01/10 04:02	156-60-5	
Tetrachloroethene	**140**	ppbv	69.6	139.2		10/01/10 04:02	127-18-4	
1,1,1-Trichloroethane	ND	ppbv	69.6	139.2		10/01/10 04:02	71-55-6	
Trichloroethene	**403**	ppbv	69.6	139.2		10/01/10 04:02	79-01-6	
Vinyl chloride	ND	ppbv	69.6	139.2		10/01/10 04:02	75-01-4	

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ANALYTICAL RESULTS

Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10138942

Sample: SG-10 **Lab ID: 10138942004** Collected: 09/21/10 11:03 Received: 09/24/10 09:38 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	4.4	8.7		10/01/10 03:35	75-34-3	
1,2-Dichloroethane	ND	ppbv	4.4	8.7		10/01/10 03:35	107-06-2	
1,1-Dichloroethene	ND	ppbv	4.4	8.7		10/01/10 03:35	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	4.4	8.7		10/01/10 03:35	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	4.4	8.7		10/01/10 03:35	156-60-5	
Tetrachloroethene	ND	ppbv	4.4	8.7		10/01/10 03:35	127-18-4	
1,1,1-Trichloroethane	ND	ppbv	4.4	8.7		10/01/10 03:35	71-55-6	
Trichloroethene	**11.5**	ppbv	4.4	8.7		10/01/10 03:35	79-01-6	
Vinyl chloride	ND	ppbv	4.4	8.7		10/01/10 03:35	75-01-4	

Sample: SG-11 **Lab ID: 10138942005** Collected: 09/23/10 09:49 Received: 09/24/10 09:38 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	2.4	4.74		10/01/10 21:07	75-34-3	
1,2-Dichloroethane	ND	ppbv	2.4	4.74		10/01/10 21:07	107-06-2	
1,1-Dichloroethene	ND	ppbv	2.4	4.74		10/01/10 21:07	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	2.4	4.74		10/01/10 21:07	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	2.4	4.74		10/01/10 21:07	156-60-5	
Tetrachloroethene	ND	ppbv	2.4	4.74		10/01/10 21:07	127-18-4	
1,1,1-Trichloroethane	ND	ppbv	2.4	4.74		10/01/10 21:07	71-55-6	
Trichloroethene	ND	ppbv	2.4	4.74		10/01/10 21:07	79-01-6	
Vinyl chloride	ND	ppbv	2.4	4.74		10/01/10 21:07	75-01-4	

Sample: SG-13 **Lab ID: 10138942006** Collected: 09/23/10 10:16 Received: 09/24/10 09:38 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	1.5	2.92		10/01/10 19:44	75-34-3	
1,2-Dichloroethane	ND	ppbv	1.5	2.92		10/01/10 19:44	107-06-2	
1,1-Dichloroethene	ND	ppbv	1.5	2.92		10/01/10 19:44	75-35-4	
cis-1,2-Dichloroethene	**2.5**	ppbv	1.5	2.92		10/01/10 19:44	156-59-2	
trans-1,2-Dichloroethene	**5.6**	ppbv	1.5	2.92		10/01/10 19:44	156-60-5	
Tetrachloroethene	ND	ppbv	1.5	2.92		10/01/10 19:44	127-18-4	
1,1,1-Trichloroethane	ND	ppbv	1.5	2.92		10/01/10 19:44	71-55-6	
Trichloroethene	ND	ppbv	1.5	2.92		10/01/10 19:44	79-01-6	
Vinyl chloride	ND	ppbv	1.5	2.92		10/01/10 19:44	75-01-4	

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ANALYTICAL RESULTS

Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10138942

Sample: SG-02 **Lab ID: 10138942007** Collected: 09/23/10 11:52 Received: 09/24/10 09:38 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	557	1113.6		10/01/10 23:50	75-34-3	
1,2-Dichloroethane	ND	ppbv	557	1113.6		10/01/10 23:50	107-06-2	
1,1-Dichloroethene	ND	ppbv	557	1113.6		10/01/10 23:50	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	557	1113.6		10/01/10 23:50	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	557	1113.6		10/01/10 23:50	156-60-5	
Tetrachloroethene	**20900**	ppbv	557	1113.6		10/01/10 23:50	127-18-4	
1,1,1-Trichloroethane	**1660**	ppbv	557	1113.6		10/01/10 23:50	71-55-6	
Trichloroethene	**12300**	ppbv	557	1113.6		10/01/10 23:50	79-01-6	
Vinyl chloride	ND	ppbv	557	1113.6		10/01/10 23:50	75-01-4	

Sample: SG-03 **Lab ID: 10138942008** Collected: 09/23/10 12:25 Received: 09/24/10 09:38 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	**149**	ppbv	60.6	121.1		10/05/10 04:40	75-34-3	
1,2-Dichloroethane	ND	ppbv	1.7	3.48		10/01/10 22:03	107-06-2	
1,1-Dichloroethene	ND	ppbv	1.7	3.48		10/01/10 22:03	75-35-4	
cis-1,2-Dichloroethene	**3420**	ppbv	60.6	121.1		10/05/10 04:40	156-59-2	
trans-1,2-Dichloroethene	**261**	ppbv	60.6	121.1		10/05/10 04:40	156-60-5	
Tetrachloroethene	**1.7**	ppbv	1.7	3.48		10/01/10 22:03	127-18-4	
1,1,1-Trichloroethane	**2.1**	ppbv	1.7	3.48		10/01/10 22:03	71-55-6	
Trichloroethene	**5.0**	ppbv	1.7	3.48		10/01/10 22:03	79-01-6	
Vinyl chloride	ND	ppbv	1.7	3.48		10/01/10 22:03	75-01-4	

Sample: SG-16 **Lab ID: 10138942009** Collected: 09/23/10 11:15 Received: 09/24/10 09:38 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	2.5	4.91		10/01/10 20:40	75-34-3	
1,2-Dichloroethane	ND	ppbv	2.5	4.91		10/01/10 20:40	107-06-2	
1,1-Dichloroethene	ND	ppbv	2.5	4.91		10/01/10 20:40	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	2.5	4.91		10/01/10 20:40	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	2.5	4.91		10/01/10 20:40	156-60-5	
Tetrachloroethene	**2.6**	ppbv	2.5	4.91		10/01/10 20:40	127-18-4	
1,1,1-Trichloroethane	ND	ppbv	2.5	4.91		10/01/10 20:40	71-55-6	
Trichloroethene	ND	ppbv	2.5	4.91		10/01/10 20:40	79-01-6	
Vinyl chloride	ND	ppbv	2.5	4.91		10/01/10 20:40	75-01-4	

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ANALYTICAL RESULTS

Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10138942

Sample: SG-05 **Lab ID: 10138942010** Collected: 09/23/10 12:53 Received: 09/24/10 09:38 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	362	723.2		10/01/10 22:57	75-34-3	
1,2-Dichloroethane	ND	ppbv	362	723.2		10/01/10 22:57	107-06-2	
1,1-Dichloroethene	ND	ppbv	362	723.2		10/01/10 22:57	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	362	723.2		10/01/10 22:57	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	362	723.2		10/01/10 22:57	156-60-5	
Tetrachloroethene	ND	ppbv	362	723.2		10/01/10 22:57	127-18-4	
1,1,1-Trichloroethane	**1050**	ppbv	362	723.2		10/01/10 22:57	71-55-6	
Trichloroethene	**3190**	ppbv	362	723.2		10/01/10 22:57	79-01-6	
Vinyl chloride	ND	ppbv	362	723.2		10/01/10 22:57	75-01-4	

Sample: SG-04 **Lab ID: 10138942011** Collected: 09/23/10 13:21 Received: 09/24/10 09:38 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	1.5	3.02		10/01/10 22:31	75-34-3	
1,2-Dichloroethane	ND	ppbv	1.5	3.02		10/01/10 22:31	107-06-2	
1,1-Dichloroethene	ND	ppbv	1.5	3.02		10/01/10 22:31	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	1.5	3.02		10/01/10 22:31	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	1.5	3.02		10/01/10 22:31	156-60-5	
Tetrachloroethene	ND	ppbv	1.5	3.02		10/01/10 22:31	127-18-4	
1,1,1-Trichloroethane	ND	ppbv	1.5	3.02		10/01/10 22:31	71-55-6	
Trichloroethene	ND	ppbv	1.5	3.02		10/01/10 22:31	79-01-6	
Vinyl chloride	ND	ppbv	1.5	3.02		10/01/10 22:31	75-01-4	

Sample: DUP-01 **Lab ID: 10138942012** Collected: 09/21/10 00:00 Received: 09/24/10 09:38 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	8600	17203.2		10/01/10 23:24	75-34-3	
1,2-Dichloroethane	ND	ppbv	8600	17203.2		10/01/10 23:24	107-06-2	
1,1-Dichloroethene	ND	ppbv	8600	17203.2		10/01/10 23:24	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	8600	17203.2		10/01/10 23:24	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	8600	17203.2		10/01/10 23:24	156-60-5	
Tetrachloroethene	ND	ppbv	8600	17203.2		10/01/10 23:24	127-18-4	
1,1,1-Trichloroethane	**13400**	ppbv	8600	17203.2		10/01/10 23:24	71-55-6	
Trichloroethene	**68600**	ppbv	8600	17203.2		10/01/10 23:24	79-01-6	
Vinyl chloride	ND	ppbv	8600	17203.2		10/01/10 23:24	75-01-4	

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ANALYTICAL RESULTS

Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10138942

Sample: SG-08 **Lab ID: 10138942013** Collected: 09/23/10 13:46 Received: 09/24/10 09:38 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	2.0	3.93		10/01/10 21:36	75-34-3	
1,2-Dichloroethane	ND	ppbv	2.0	3.93		10/01/10 21:36	107-06-2	
1,1-Dichloroethene	ND	ppbv	2.0	3.93		10/01/10 21:36	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	2.0	3.93		10/01/10 21:36	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	2.0	3.93		10/01/10 21:36	156-60-5	
Tetrachloroethene	ND	ppbv	2.0	3.93		10/01/10 21:36	127-18-4	
1,1,1-Trichloroethane	**4.5**	ppbv	2.0	3.93		10/01/10 21:36	71-55-6	
Trichloroethene	**3.5**	ppbv	2.0	3.93		10/01/10 21:36	79-01-6	
Vinyl chloride	ND	ppbv	2.0	3.93		10/01/10 21:36	75-01-4	

Sample: SG-09 **Lab ID: 10138942014** Collected: 09/23/10 14:11 Received: 09/24/10 09:38 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	23.4	46.77		10/01/10 20:12	75-34-3	
1,2-Dichloroethane	ND	ppbv	23.4	46.77		10/01/10 20:12	107-06-2	
1,1-Dichloroethene	ND	ppbv	23.4	46.77		10/01/10 20:12	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	23.4	46.77		10/01/10 20:12	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	23.4	46.77		10/01/10 20:12	156-60-5	
Tetrachloroethene	ND	ppbv	23.4	46.77		10/01/10 20:12	127-18-4	
1,1,1-Trichloroethane	**142**	ppbv	23.4	46.77		10/01/10 20:12	71-55-6	
Trichloroethene	**436**	ppbv	23.4	46.77		10/01/10 20:12	79-01-6	
Vinyl chloride	ND	ppbv	23.4	46.77		10/01/10 20:12	75-01-4	

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QUALITY CONTROL DATA

Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10138942

QC Batch: AIR/10946 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR
Associated Lab Samples: 10138942001, 10138942002, 10138942003, 10138942004

METHOD BLANK: 861654 Matrix: Air
Associated Lab Samples: 10138942001, 10138942002, 10138942003, 10138942004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ppbv	ND	0.50	09/30/10 20:35	
1,1-Dichloroethane	ppbv	ND	0.50	09/30/10 20:35	
1,1-Dichloroethene	ppbv	ND	0.50	09/30/10 20:35	
1,2-Dichloroethane	ppbv	ND	0.50	09/30/10 20:35	
cis-1,2-Dichloroethene	ppbv	ND	0.50	09/30/10 20:35	
Tetrachloroethene	ppbv	ND	0.50	09/30/10 20:35	
trans-1,2-Dichloroethene	ppbv	ND	0.50	09/30/10 20:35	
Trichloroethene	ppbv	ND	0.50	09/30/10 20:35	
Vinyl chloride	ppbv	ND	0.50	09/30/10 20:35	

LABORATORY CONTROL SAMPLE: 861655

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ppbv	10	7.8	78	75-135	
1,1-Dichloroethane	ppbv	10	8.6	86	60-125	
1,1-Dichloroethene	ppbv	10	8.4	84	69-128	
1,2-Dichloroethane	ppbv	10	8.6	86	66-127	
cis-1,2-Dichloroethene	ppbv	10	8.7	87	67-131	
Tetrachloroethene	ppbv	10	7.4	74	68-136	
trans-1,2-Dichloroethene	ppbv	10	8.4	84	69-131	
Trichloroethene	ppbv	10	8.8	88	75-147	
Vinyl chloride	ppbv	10	8.1	81	66-125	

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QUALITY CONTROL DATA

Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10138942

QC Batch: AIR/10974 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR
Associated Lab Samples: 10138942005, 10138942006, 10138942007, 10138942008, 10138942009, 10138942010, 10138942011, 10138942012, 10138942013, 10138942014

METHOD BLANK: 864095 Matrix: Air
Associated Lab Samples: 10138942005, 10138942006, 10138942007, 10138942008, 10138942009, 10138942010, 10138942011, 10138942012, 10138942013, 10138942014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ppbv	ND	0.50	10/01/10 13:33	
1,1-Dichloroethane	ppbv	ND	0.50	10/01/10 13:33	
1,1-Dichloroethene	ppbv	ND	0.50	10/01/10 13:33	
1,2-Dichloroethane	ppbv	ND	0.50	10/01/10 13:33	
cis-1,2-Dichloroethene	ppbv	ND	0.50	10/01/10 13:33	
Tetrachloroethene	ppbv	ND	0.50	10/01/10 13:33	
trans-1,2-Dichloroethene	ppbv	ND	0.50	10/01/10 13:33	
Trichloroethene	ppbv	ND	0.50	10/01/10 13:33	
Vinyl chloride	ppbv	ND	0.50	10/01/10 13:33	

LABORATORY CONTROL SAMPLE: 864096

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ppbv	10	9.4	94	75-135	
1,1-Dichloroethane	ppbv	10	10.6	106	60-125	
1,1-Dichloroethene	ppbv	10	10.5	105	69-128	
1,2-Dichloroethane	ppbv	10	10.5	105	66-127	
cis-1,2-Dichloroethene	ppbv	10	10.4	104	67-131	
Tetrachloroethene	ppbv	10	8.8	88	68-136	
trans-1,2-Dichloroethene	ppbv	10	10.2	102	69-131	
Trichloroethene	ppbv	10	11.2	112	75-147	
Vinyl chloride	ppbv	10	9.8	98	66-125	

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QUALIFIERS

Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10138942

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

SAMPLE QUALIFIERS

Sample: 10138942001
[1] This result is reported from a serial dilution

Sample: 10138942003
[1] This result is reported from a serial dilution

Sample: 10138942007
[1] This result is reported from a serial dilution

Sample: 10138942010
[1] This result is reported from a serial dilution

Sample: 10138942012
[1] This result is reported from a serial dilution

Sample: 10138942014
[1] This result is reported from a serial dilution

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10138942

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10138942001	**SG-01**	TO-15	AIR/10946		
10138942002	**SG-06**	TO-15	AIR/10946		
10138942003	**SG-07**	TO-15	AIR/10946		
10138942004	**SG-10**	TO-15	AIR/10946		
10138942005	**SG-11**	TO-15	AIR/10974		
10138942006	**SG-13**	TO-15	AIR/10974		
10138942007	**SG-02**	TO-15	AIR/10974		
10138942008	**SG-03**	TO-15	AIR/10974		
10138942009	**SG-16**	TO-15	AIR/10974		
10138942010	**SG-05**	TO-15	AIR/10974		
10138942011	**SG-04**	TO-15	AIR/10974		
10138942012	**DUP-01**	TO-15	AIR/10974		
10138942013	**SG-08**	TO-15	AIR/10974		
10138942014	**SG-09**	TO-15	AIR/10974		

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10138942
Project Name: 02751.13.001 TPC-Soil Gas

Lab Sample No: 10138942001
Client Sample ID: SG-01

ProjSampleNum: 10138942001
Matrix: Air

Date Collected: 09/21/10 8:52
Date Received: 09/24/10 9:38

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	167000	ug/m3	48000	17203.2	10/01/10 11:24	CJR	71-55-6	
1,1-Dichloroethane	708	ug/m3	550	268.8	10/01/10 4:28	CJR	75-34-3	
1,1-Dichloroethene	ND	ug/m3	540	268.8	10/01/10 4:28	CJR	75-35-4	
1,2-Dichloroethane	ND	ug/m3	550	268.8	10/01/10 4:28	CJR	107-06-2	
cis-1,2-Dichloroethene	2700	ug/m3	540	268.8	10/01/10 4:28	CJR	156-59-2	
Tetrachloroethene	13700	ug/m3	920	268.8	10/01/10 4:28	CJR	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	540	268.8	10/01/10 4:28	CJR	156-60-5	
Trichloroethene	1440000	ug/m3	47000	17203.2	10/01/10 11:24	CJR	79-01-6	
Vinyl chloride	ND	ug/m3	350	268.8	10/01/10 4:28	CJR	75-01-4	

DISCLAIMER: These results have been converted to the units shown from the original units of measurement assuming 20 degrees Celsius and 1 atmosphere pressure. Values were not rounded according to EPA rounding rules. THC is quantitated based on the average response factors of several compounds; the nominal molecular weight of THC used for units conversion is the average of the molecular weights of the compounds used for quantitation.

SUPPLEMENTAL REPORT
Units Conversion Request

Pace Analytical Services, Inc.
1700 Elm Street – Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10138942
Project Name: 02751.13.001 TPC-Soil Gas

Lab Sample No: 10138942002
Client Sample ID: SG-06

ProjSampleNum: 10138942002
Matrix: Air

Date Collected: 09/21/10 9:39
Date Received: 09/24/10 9:38

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	ND	ug/m3	160	58.46	10/01/10 3:09	CJR	71-55-6	
1,1-Dichloroethane	ND	ug/m3	120	58.46	10/01/10 3:09	CJR	75-34-3	
1,1-Dichloroethene	ND	ug/m3	120	58.46	10/01/10 3:09	CJR	75-35-4	
1,2-Dichloroethane	ND	ug/m3	120	58.46	10/01/10 3:09	CJR	107-06-2	
cis-1,2-Dichloroethene	ND	ug/m3	120	58.46	10/01/10 3:09	CJR	156-59-2	
Tetrachloroethene	429	ug/m3	200	58.46	10/01/10 3:09	CJR	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	120	58.46	10/01/10 3:09	CJR	156-60-5	
Trichloroethene	1440	ug/m3	160	58.46	10/01/10 3:09	CJR	79-01-6	
Vinyl chloride	ND	ug/m3	76	58.46	10/01/10 3:09	CJR	75-01-4	

DISCLAIMER: These results have been converted to the units shown from the original units of measurement assuming 20 degrees Celsius and 1 atmosphere pressure. Values were not rounded according to EPA rounding rules. THC is quantitated based on the average response factors of several compounds; the nominal molecular weight of THC used for units conversion is the average of the molecular weights of the compounds used for quantitation.

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10138942
Project Name: 02751.13.001 TPC-Soil Gas

Lab Sample No: 10138942003
Client Sample ID: SG-07

ProjSampleNum: 10138942003
Matrix: Air

Date Collected: 09/21/10 10:24
Date Received: 09/24/10 9:38

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	ND	ug/m3	390	139.2	10/01/10 4:02	CJR	71-55-6	
1,1-Dichloroethane	ND	ug/m3	290	139.2	10/01/10 4:02	CJR	75-34-3	
1,1-Dichloroethene	ND	ug/m3	280	139.2	10/01/10 4:02	CJR	75-35-4	
1,2-Dichloroethane	ND	ug/m3	290	139.2	10/01/10 4:02	CJR	107-06-2	
cis-1,2-Dichloroethene	ND	ug/m3	280	139.2	10/01/10 4:02	CJR	156-59-2	
Tetrachloroethene	965	ug/m3	480	139.2	10/01/10 4:02	CJR	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	280	139.2	10/01/10 4:02	CJR	156-60-5	
Trichloroethene	2200	ug/m3	380	139.2	10/01/10 4:02	CJR	79-01-6	
Vinyl chloride	ND	ug/m3	180	139.2	10/01/10 4:02	CJR	75-01-4	

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10138942
Project Name: 02751.13.001 TPC-Soil Gas

Lab Sample No: 10138942004
Client Sample ID: SG-10

ProjSampleNum: 10138942004
Matrix: Air

Date Collected: 09/21/10 11:03
Date Received: 09/24/10 9:38

Parameters	Results	Units	Report Limit	DF	Analyzed	CAS No.	Qualifiers
Air							
TO-15							
1,1,1-Trichloroethane	ND	ug/m3	24	8.7	10/01/10 3:35 CJR	71-55-6	
1,1-Dichloroethane	ND	ug/m3	18	8.7	10/01/10 3:35 CJR	75-34-3	
1,1-Dichloroethene	ND	ug/m3	18	8.7	10/01/10 3:35 CJR	75-35-4	
1,2-Dichloroethane	ND	ug/m3	18	8.7	10/01/10 3:35 CJR	107-06-2	
cis-1,2-Dichloroethene	ND	ug/m3	18	8.7	10/01/10 3:35 CJR	156-59-2	
Tetrachloroethene	ND	ug/m3	30	8.7	10/01/10 3:35 CJR	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	18	8.7	10/01/10 3:35 CJR	156-60-5	
Trichloroethene	62.8	ug/m3	24	8.7	10/01/10 3:35 CJR	79-01-6	
Vinyl chloride	ND	ug/m3	11	8.7	10/01/10 3:35 CJR	75-01-4	

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10138942
Project Name: 02751.13.001 TPC-Soil Gas

Lab Sample No: 10138942005
Client Sample ID: SG-11

ProjSampleNum: 10138942005
Matrix: Air

Date Collected: 09/23/10 9:49
Date Received: 09/24/10 9:38

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	ND	ug/m3	13	4.74	10/01/10 21:07	CJR	71-55-6	
1,1-Dichloroethane	ND	ug/m3	9.9	4.74	10/01/10 21:07	CJR	75-34-3	
1,1-Dichloroethene	ND	ug/m3	9.7	4.74	10/01/10 21:07	CJR	75-35-4	
1,2-Dichloroethane	ND	ug/m3	9.9	4.74	10/01/10 21:07	CJR	107-06-2	
cis-1,2-Dichloroethene	ND	ug/m3	9.7	4.74	10/01/10 21:07	CJR	156-59-2	
Tetrachloroethene	ND	ug/m3	17	4.74	10/01/10 21:07	CJR	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	9.7	4.74	10/01/10 21:07	CJR	156-60-5	
Trichloroethene	ND	ug/m3	13	4.74	10/01/10 21:07	CJR	79-01-6	
Vinyl chloride	ND	ug/m3	6.2	4.74	10/01/10 21:07	CJR	75-01-4	

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10138942
Project Name: 02751.13.001 TPC-Soil Gas

Lab Sample No: 10138942006
Client Sample ID: SG-13

ProjSampleNum: 10138942006
Matrix: Air

Date Collected: 09/23/10 10:16
Date Received: 09/24/10 9:38

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	ND	ug/m3	8.3	2.92	10/01/10 19:44	CJR	71-55-6	
1,1-Dichloroethane	ND	ug/m3	6.2	2.92	10/01/10 19:44	CJR	75-34-3	
1,1-Dichloroethene	ND	ug/m3	6	2.92	10/01/10 19:44	CJR	75-35-4	
1,2-Dichloroethane	ND	ug/m3	6.2	2.92	10/01/10 19:44	CJR	107-06-2	
cis-1,2-Dichloroethene	10.1	ug/m3	6	2.92	10/01/10 19:44	CJR	156-59-2	
Tetrachloroethene	ND	ug/m3	10	2.92	10/01/10 19:44	CJR	127-18-4	
trans-1,2-Dichloroethene	22.6	ug/m3	6	2.92	10/01/10 19:44	CJR	156-60-5	
Trichloroethene	ND	ug/m3	8.2	2.92	10/01/10 19:44	CJR	79-01-6	
Vinyl chloride	ND	ug/m3	3.9	2.92	10/01/10 19:44	CJR	75-01-4	

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10138942
Project Name: 02751.13.001 TPC-Soil Gas

Lab Sample No: 10138942007
Client Sample ID: SG-02

ProjSampleNum: 10138942007
Matrix: Air

Date Collected: 09/23/10 11:52
Date Received: 09/24/10 9:38

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	9210	ug/m3	3100	1113.6	10/01/10 23:50	CJR	71-55-6	
1,1-Dichloroethane	ND	ug/m3	2300	1113.6	10/01/10 23:50	CJR	75-34-3	
1,1-Dichloroethene	ND	ug/m3	2200	1113.6	10/01/10 23:50	CJR	75-35-4	
1,2-Dichloroethane	ND	ug/m3	2300	1113.6	10/01/10 23:50	CJR	107-06-2	
cis-1,2-Dichloroethene	ND	ug/m3	2200	1113.6	10/01/10 23:50	CJR	156-59-2	
Tetrachloroethene	144000	ug/m3	3800	1113.6	10/01/10 23:50	CJR	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	2200	1113.6	10/01/10 23:50	CJR	156-60-5	
Trichloroethene	67200	ug/m3	3000	1113.6	10/01/10 23:50	CJR	79-01-6	
Vinyl chloride	ND	ug/m3	1400	1113.6	10/01/10 23:50	CJR	75-01-4	

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10138942
Project Name: 02751.13.001 TPC-Soil Gas

Lab Sample No: 10138942008
Client Sample ID: SG-03

ProjSampleNum: 10138942008
Matrix: Air

Date Collected: 09/23/10 12:25
Date Received: 09/24/10 9:38

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	11.6	ug/m3	9.4	3.48	10/01/10 22:03	CJR	71-55-6	
1,1-Dichloroethane	613	ug/m3	250	121.1	10/05/10 4:40	CJR	75-34-3	
1,1-Dichloroethene	ND	ug/m3	6.9	3.48	10/01/10 22:03	CJR	75-35-4	
1,2-Dichloroethane	ND	ug/m3	7	3.48	10/01/10 22:03	CJR	107-06-2	
cis-1,2-Dichloroethene	13800	ug/m3	240	121.1	10/05/10 4:40	CJR	156-59-2	
Tetrachloroethene	11.7	ug/m3	12	3.48	10/01/10 22:03	CJR	127-18-4	
trans-1,2-Dichloroethene	1050	ug/m3	240	121.1	10/05/10 4:40	CJR	156-60-5	
Trichloroethene	27.3	ug/m3	9.3	3.48	10/01/10 22:03	CJR	79-01-6	
Vinyl chloride	ND	ug/m3	4.4	3.48	10/01/10 22:03	CJR	75-01-4	

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10138942
Project Name: 02751.13.001 TPC-Soil Gas

Lab Sample No: 10138942009
Client Sample ID: SG-16

ProjSampleNum: 10138942009
Matrix: Air

Date Collected: 09/23/10 11:15
Date Received: 09/24/10 9:38

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	ND	ug/m3	14	4.91	10/01/10 20:40	CJR	71-55-6	
1,1-Dichloroethane	ND	ug/m3	10	4.91	10/01/10 20:40	CJR	75-34-3	
1,1-Dichloroethene	ND	ug/m3	10	4.91	10/01/10 20:40	CJR	75-35-4	
1,2-Dichloroethane	ND	ug/m3	10	4.91	10/01/10 20:40	CJR	107-06-2	
cis-1,2-Dichloroethene	ND	ug/m3	10	4.91	10/01/10 20:40	CJR	156-59-2	
Tetrachloroethene	17.9	ug/m3	17	4.91	10/01/10 20:40	CJR	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	10	4.91	10/01/10 20:40	CJR	156-60-5	
Trichloroethene	ND	ug/m3	14	4.91	10/01/10 20:40	CJR	79-01-6	
Vinyl chloride	ND	ug/m3	6.5	4.91	10/01/10 20:40	CJR	75-01-4	

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10138942
Project Name: 02751.13.001 TPC-Soil Gas

Lab Sample No: 10138942010
Client Sample ID: SG-05

ProjSampleNum: 10138942010
Matrix: Air

Date Collected: 09/23/10 12:53
Date Received: 09/24/10 9:38

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	5820	ug/m3	2000	723.2	10/01/10 22:57	CJR	71-55-6	
1,1-Dichloroethane	ND	ug/m3	1500	723.2	10/01/10 22:57	CJR	75-34-3	
1,1-Dichloroethene	ND	ug/m3	1500	723.2	10/01/10 22:57	CJR	75-35-4	
1,2-Dichloroethane	ND	ug/m3	1500	723.2	10/01/10 22:57	CJR	107-06-2	
cis-1,2-Dichloroethene	ND	ug/m3	1500	723.2	10/01/10 22:57	CJR	156-59-2	
Tetrachloroethene	ND	ug/m3	2500	723.2	10/01/10 22:57	CJR	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	1500	723.2	10/01/10 22:57	CJR	156-60-5	
Trichloroethene	17400	ug/m3	2000	723.2	10/01/10 22:57	CJR	79-01-6	
Vinyl chloride	ND	ug/m3	940	723.2	10/01/10 22:57	CJR	75-01-4	

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10138942
Project Name: 02751.13.001 TPC-Soil Gas

Lab Sample No: 10138942011
Client Sample ID: SG-04

ProjSampleNum: 10138942011
Matrix: Air

Date Collected: 09/23/10 13:21
Date Received: 09/24/10 9:38

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	ND	ug/m3	8.3	3.02	10/01/10 22:31	CJR	71-55-6	
1,1-Dichloroethane	ND	ug/m3	6.2	3.02	10/01/10 22:31	CJR	75-34-3	
1,1-Dichloroethene	ND	ug/m3	6	3.02	10/01/10 22:31	CJR	75-35-4	
1,2-Dichloroethane	ND	ug/m3	6.2	3.02	10/01/10 22:31	CJR	107-06-2	
cis-1,2-Dichloroethene	ND	ug/m3	6	3.02	10/01/10 22:31	CJR	156-59-2	
Tetrachloroethene	ND	ug/m3	10	3.02	10/01/10 22:31	CJR	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	6	3.02	10/01/10 22:31	CJR	156-60-5	
Trichloroethene	ND	ug/m3	8.2	3.02	10/01/10 22:31	CJR	79-01-6	
Vinyl chloride	ND	ug/m3	3.9	3.02	10/01/10 22:31	CJR	75-01-4	

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10138942
Project Name: 02751.13.001 TPC-Soil Gas

Lab Sample No: 10138942012
Client Sample ID: DUP-01

ProjSampleNum: 10138942012
Matrix: Air

Date Collected: 09/21/10 0:00
Date Received: 09/24/10 9:38

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	74300	ug/m3	48000	L7203.2	10/01/10 23:24	CJR	71-55-6	
1,1-Dichloroethane	ND	ug/m3	35000	L7203.2	10/01/10 23:24	CJR	75-34-3	
1,1-Dichloroethene	ND	ug/m3	35000	L7203.2	10/01/10 23:24	CJR	75-35-4	
1,2-Dichloroethane	ND	ug/m3	35000	L7203.2	10/01/10 23:24	CJR	107-06-2	
cis-1,2-Dichloroethene	ND	ug/m3	35000	L7203.2	10/01/10 23:24	CJR	156-59-2	
Tetrachloroethene	ND	ug/m3	59000	L7203.2	10/01/10 23:24	CJR	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	35000	L7203.2	10/01/10 23:24	CJR	156-60-5	
Trichloroethene	375000	ug/m3	47000	L7203.2	10/01/10 23:24	CJR	79-01-6	
Vinyl chloride	ND	ug/m3	22000	L7203.2	10/01/10 23:24	CJR	75-01-4	

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10138942
Project Name: 02751.13.001 TPC-Soil Gas

Lab Sample No: 10138942013
Client Sample ID: SG-08

ProjSampleNum: 10138942013
Matrix: Air

Date Collected: 09/23/10 13:46
Date Received: 09/24/10 9:38

Parameters	Results	Units	Report Limit	DF	Analyzed	CAS No.	Qualifiers
Air							
TO-15							
1,1,1-Trichloroethane	25	ug/m3	11	3.93	10/01/10 21:36 CJR	71-55-6	
1,1-Dichloroethane	ND	ug/m3	8.2	3.93	10/01/10 21:36 CJR	75-34-3	
1,1-Dichloroethene	ND	ug/m3	8.1	3.93	10/01/10 21:36 CJR	75-35-4	
1,2-Dichloroethane	ND	ug/m3	8.2	3.93	10/01/10 21:36 CJR	107-06-2	
cis-1,2-Dichloroethene	ND	ug/m3	8.1	3.93	10/01/10 21:36 CJR	156-59-2	
Tetrachloroethene	ND	ug/m3	14	3.93	10/01/10 21:36 CJR	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	8.1	3.93	10/01/10 21:36 CJR	156-60-5	
Trichloroethene	19.1	ug/m3	11	3.93	10/01/10 21:36 CJR	79-01-6	
Vinyl chloride	ND	ug/m3	5.2	3.93	10/01/10 21:36 CJR	75-01-4	

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10138942
Project Name: 02751.13.001 TPC-Soil Gas

Lab Sample No: 10138942014
Client Sample ID: SG-09

ProjSampleNum: 10138942014
Matrix: Air

Date Collected: 09/23/10 14:11
Date Received: 09/24/10 9:38

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	788	ug/m3	130	46.77	10/01/10 20:12	CJR	71-55-6	
1,1-Dichloroethane	ND	ug/m3	96	46.77	10/01/10 20:12	CJR	75-34-3	
1,1-Dichloroethene	ND	ug/m3	94	46.77	10/01/10 20:12	CJR	75-35-4	
1,2-Dichloroethane	ND	ug/m3	96	46.77	10/01/10 20:12	CJR	107-06-2	
cis-1,2-Dichloroethene	ND	ug/m3	94	46.77	10/01/10 20:12	CJR	156-59-2	
Tetrachloroethene	ND	ug/m3	160	46.77	10/01/10 20:12	CJR	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	94	46.77	10/01/10 20:12	CJR	156-60-5	
Trichloroethene	2380	ug/m3	130	46.77	10/01/10 20:12	CJR	79-01-6	
Vinyl chloride	ND	ug/m3	61	46.77	10/01/10 20:12	CJR	75-01-4	

DISCLAIMER: These results have been converted to the units shown from the original units of measurement assuming 20 degrees Celsius and 1 atmosphere pressure. Values were not rounded according to EPA rounding rules. THC is quantitated based on the average response factors of several compounds; the nominal molecular weight of THC used for units conversion is the average of the molecular weights of the compounds used for quantitation.

Pace Analytical Services, Inc.
1700 Elm Street – Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

ANALYTICAL RESULTS

Client:	RMT, INC	Lab Project Number:	10138942
Phone:	608-662-5352	Project Name:	02751.13.001 TPC-Soil Gas

PARAMETER FOOTNOTES

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AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10138942
02487

Page: 1 of 2

Section A Required Client Information:

Company: RMT
Address: 3754 Ranchero Drive, Ann Arbor MI 48108
Email To: stacy.metz@rmtinc.com
Phone: 734 971 7080 Fax: 734 971 9022
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Stacy Metz
Copy To:
Purchase Order No.: ~~Sem-02751.13.001~~
Project Name: TPC - Soil Gas
Project Number: 02751.13.001

Section C Invoice Information:

Attention: Accounts Payable
Company Name: RMT, Inc
Address: PO Box 8923 Madison MI 53708-8923
Pace Quote Reference:
Pace Project Manager/Sales Rep. Colin Scherk
Pace Profile #:

Program: UST / Superfund / Emissions / Clean Air Act / Voluntary Clean Up / Dry Clean X / RCRA / Other

Location of Sampling by State: MI

Reporting Units: ug/m³ / mg/m³ / PPBV X / PPMV / Other

Report Level II. III. IV. X Other

Section D Required Client Information

Valid Media Codes

MEDIA	CODE
Tedlar Bag	TB
1 Liter Summa Can	1LC
6 Liter Summa Can	6LC
Low Volume Puff	LVP
High Volume Puff	HVP
Other	PM10

ITEM #	AIR SAMPLE ID (Sample IDs MUST BE UNIQUE)	MEDIA CODE	PID Reading (Client only)	COLLECTED COMPOSITE START END/GRAB DATE	TIME	COMPOSITE - DATE	TIME	Canister Pressure (Initial Field - psig)	Canister Pressure (Final Field - psig)	Summa Can Number	Flow Control Number	Method: PM10	3C- Fixed Gas (%)	TO-3	TO-3M (Methane)	TO-4 (PCBs)	TO-13 (PAH)	TO-14	TO-15	TO15 Short List+	Pace Lab ID
1	SG-01	1LC	11.8	9/21/10	842	9/21/10	852	-31	-3	1019	PA163								X		10138942001
2	SG-06	1LC	4.2	↓	932	↓	939	-26	0	1300	PA179								↓		002
3	SG-07	1LC	10.5		1014		1024	-28	0	0922	600										003
4	SG-10	1LC	6.7		1053		1103	-28	-1.5	1175	PA203										004
5	SG-11	1LC	1.4	9/23/10	939	9/23/10	949	-25	0	1127	PA205										005
6	SG-13	1LC	0		1006		1016	-29	0	0920	101										006
7	SG-02		8.9		1142		1152	-25	+1	0895	027										007
8	SG-03		4.9		1215		1225	-25		1164	PA200										008
9	SG-16		3.8		1105		1115	-25	-0.5	1340	A11										009
10	SG-05		8.7		1243		1253	-26	0	1143	PA164										010
11	SG-04				1311		1321	-29	0	0999	PA166										011
12	DUP-01	1LC	—	9/21/10	—	9/21/10	—														012

Comments :

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Stacy Metz	9/23	1600	[illegible]	9-24-10	0938

SAMPLE CONDITIONS: Temp in °C / Received on Ice Y/N / Custody Sealed Cooler Y/N / Samples Intact Y/N

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Stacy Metz
SIGNATURE of SAMPLER: [signature] DATE Signed (MM / DD / YY): 09/23/10

ORIGINAL

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414 Air Technical Phone: 612.607.6386

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AIR: CHAIN-OF-CUSTODY / Analytical Request Document

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10138942

02333

Section A Required Client Information:

Company: RMT
Address: 3754 Ranchero Drive Ann Arbor MI 48108
Email To: stacy.metz@rmtinc.com
Phone: 734971 7080 Fax: 7349719022
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Stacy Metz
Copy To:
Purchase Order No.:
Project Name: TPC - Soil Gas
Project Number: 02751.13.001

Section C Invoice Information:

Attention: Accounts Payable
Company Name: RMT, Inc.
Address: PO Box 8923 Madison WI 53708-8923
Pace Quote Reference:
Pace Project Manager/Sales Rep. Colin Schutt
Pace Profile #:

Program: UST / Superfund / Emissions / Clean Air Act / Voluntary Clean Up / Dry Clean / RCRA X / Other

Location of Sampling by State: MI

Reporting Units: ug/m³ / mg/m³ / PPBV X / PPMV / Other

Report Level: II. III. IV. X Other

Section D Required Client Information

Valid Media Codes

MEDIA	CODE
Tedlar Bag	TB
1 Liter Summa Can	1LC
6 Liter Summa Can	6LC
Low Volume Puff	LVP
High Volume Puff	HVP
Other	PM10

ITEM #	AIR SAMPLE ID (Sample IDs MUST BE UNIQUE)	MEDIA CODE	PID Reading (Client only)	COLLECTED COMPOSITE START END/GRAB DATE	TIME	COMPOSITE - DATE	TIME	Canister Pressure (Initial Field - psig)	Canister Pressure (Final Field - psig)	Summa Can Number	Flow Control Number	PM10	3C- Fixed Gas (%)	TO-3	TO-3M (Methane)	TO-4 (PCBs)	TO-13 (PAH)	TO-14	TO-15	TO15 Short List*	Pace Lab ID
1	SG-08	1LC	3.1	9/23/10	1336	9/23/10	1346	-26	0	1327	PA175								X		10138942013
2	SG-09	↓	39	↓	1401	↓	1411	-35	-10	1169	PA174								X		014
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

Comments :

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Stacy Metz	9/23	1600	[signature] PACL	9/24/10	09:38

SAMPLE CONDITIONS

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
AMB	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Stacy Metz

SIGNATURE of SAMPLER: [signature] DATE Signed (MM / DD / YY): 09/23/10

ORIGINAL

AIR Sample Condition Upon Receipt

Pace Analytical

Client Name: RMT Project # 10138942

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other_____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☒ Other Paper

Optional
Proj. Due Date:
Proj. Name:

Tracking #: 7939 4330 9260; 9411

Date and Initials of person examining contents: 9-24-10 JK

		Comments:
Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Media: AIR (CAN)		11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.

Samples Received: 20 CANS, 20 FC'S

Canisters		Flow Controllers		Stand Alone G		Tedlar Bags	
Sample Number	Can ID	Sample Number	Can ID	Sample Number	Can ID	Sample Number	Can ID
SG-01	1019		PA242	SG-04	0999		PA166
-06	1308		PA179	DUP-01	1311		PA163
-07	0922		PA205	SG-08	1327		PA175
-10	1175		600	SG-09	1169		PA174
-11	1127		PA203		1000		1
-13	0920		101		1310		1
-02	0895		A-11		1011		1
-03	1164		PA164		1167		1
-16	1340		027		1312		1
-05	1143		PA200		0993		1

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** 04/27/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

A106 Rev.01 (22May2009)

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

October 28, 2010

Ms. Stacy Metz
RMT, INC
3754 Ranchero Dr.
Ann Arbor, MI 48108

RE: Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10141355

Dear Ms. Metz:
Enclosed are the analytical results for sample(s) received by the laboratory on October 22, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carolynne Trout

Carolynne Trout

carolynne.trout@pacelabs.com
Project Manager

Enclosures

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REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10141355

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Iowa Certification #: 368
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nebraska Certification #: Pace
Nevada Certification #: MN_00064
New Jersey Certification #: MN-002
New Mexico Certification #: Pace
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: D9921
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Washington Certification #: C754
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10141355

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10141355001	**SG-01**	Air	10/21/10 15:40	10/22/10 09:50
10141355002	**SG-02**	Air	10/21/10 13:55	10/22/10 09:50
10141355003	**SG-03**	Air	10/21/10 14:23	10/22/10 09:50
10141355004	**SG-05**	Air	10/21/10 15:04	10/22/10 09:50
10141355005	**Dup-01**	Air	10/21/10 00:00	10/22/10 09:50

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SAMPLE ANALYTE COUNT

Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10141355

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10141355001	**SG-01**	TO-15	CJR, DR1	9
10141355002	**SG-02**	TO-15	CJR, DR1	9
10141355003	**SG-03**	TO-15	DR1	9
10141355004	**SG-05**	TO-15	CJR, DR1	9
10141355005	**Dup-01**	TO-15	CJR	9

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(612)607-1700

PROJECT NARRATIVE

Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10141355

Method: **TO-15**
Description: TO15 MSV AIR
Client: RMT, INC
Date: October 28, 2010

General Information:
5 samples were analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: AIR/11135

A3: The sample was analyzed by serial dilution.

- SG-01 (Lab ID: 10141355001)
  - 1,1,1-Trichloroethane
  - Trichloroethene
- SG-02 (Lab ID: 10141355002)
  - Trichloroethene
- SG-05 (Lab ID: 10141355004)
  - Trichloroethene

This data package has been reviewed for quality and completeness and is approved for release.

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(612)607-1700

ANALYTICAL RESULTS

Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10141355

Sample: SG-01 **Lab ID: 10141355001** Collected: 10/21/10 15:40 Received: 10/22/10 09:50 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	**74.7**	ppbv	16.8	33.6		10/26/10 03:44	75-34-3	
1,2-Dichloroethane	ND	ppbv	16.8	33.6		10/26/10 03:44	107-06-2	
1,1-Dichloroethene	ND	ppbv	16.8	33.6		10/26/10 03:44	75-35-4	
cis-1,2-Dichloroethene	**272**	ppbv	16.8	33.6		10/26/10 03:44	156-59-2	
trans-1,2-Dichloroethene	**25.8**	ppbv	16.8	33.6		10/26/10 03:44	156-60-5	
Tetrachloroethene	**222**	ppbv	16.8	33.6		10/26/10 03:44	127-18-4	
1,1,1-Trichloroethane	**8300**	ppbv	1080	2150.4		10/27/10 16:56	71-55-6	A3
Trichloroethene	**32100**	ppbv	1080	2150.4		10/27/10 16:56	79-01-6	A3
Vinyl chloride	ND	ppbv	16.8	33.6		10/26/10 03:44	75-01-4	

Sample: SG-02 **Lab ID: 10141355002** Collected: 10/21/10 13:55 Received: 10/22/10 09:50 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	12.5	25		10/26/10 04:12	75-34-3	
1,2-Dichloroethane	ND	ppbv	12.5	25		10/26/10 04:12	107-06-2	
1,1-Dichloroethene	ND	ppbv	12.5	25		10/26/10 04:12	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	12.5	25		10/26/10 04:12	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	12.5	25		10/26/10 04:12	156-60-5	
Tetrachloroethene	**532**	ppbv	12.5	25		10/26/10 04:12	127-18-4	
1,1,1-Trichloroethane	**328**	ppbv	12.5	25		10/26/10 04:12	71-55-6	
Trichloroethene	**1610**	ppbv	211	422.02		10/27/10 17:25	79-01-6	A3
Vinyl chloride	ND	ppbv	12.5	25		10/26/10 04:12	75-01-4	

Sample: SG-03 **Lab ID: 10141355003** Collected: 10/21/10 14:23 Received: 10/22/10 09:50 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	**91.0**	ppbv	15.7	31.4		10/27/10 20:48	75-34-3	
1,2-Dichloroethane	ND	ppbv	15.7	31.4		10/27/10 20:48	107-06-2	
1,1-Dichloroethene	ND	ppbv	15.7	31.4		10/27/10 20:48	75-35-4	
cis-1,2-Dichloroethene	**193**	ppbv	15.7	31.4		10/27/10 20:48	156-59-2	
trans-1,2-Dichloroethene	**90.3**	ppbv	15.7	31.4		10/27/10 20:48	156-60-5	
Tetrachloroethene	ND	ppbv	15.7	31.4		10/27/10 20:48	127-18-4	
1,1,1-Trichloroethane	ND	ppbv	15.7	31.4		10/27/10 20:48	71-55-6	
Trichloroethene	ND	ppbv	15.7	31.4		10/27/10 20:48	79-01-6	
Vinyl chloride	ND	ppbv	15.7	31.4		10/27/10 20:48	75-01-4	

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(612)607-1700

ANALYTICAL RESULTS

Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10141355

Sample: SG-05 **Lab ID: 10141355004** Collected: 10/21/10 15:04 Received: 10/22/10 09:50 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	16.8	33.6		10/26/10 05:07	75-34-3	
1,2-Dichloroethane	ND	ppbv	16.8	33.6		10/26/10 05:07	107-06-2	
1,1-Dichloroethene	ND	ppbv	16.8	33.6		10/26/10 05:07	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	16.8	33.6		10/26/10 05:07	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	16.8	33.6		10/26/10 05:07	156-60-5	
Tetrachloroethene	ND	ppbv	16.8	33.6		10/26/10 05:07	127-18-4	
1,1,1-Trichloroethane	**708**	ppbv	16.8	33.6		10/26/10 05:07	71-55-6	
Trichloroethene	**1320**	ppbv	134	268.8		10/27/10 16:27	79-01-6	A3
Vinyl chloride	ND	ppbv	16.8	33.6		10/26/10 05:07	75-01-4	

Sample: Dup-01 **Lab ID: 10141355005** Collected: 10/21/10 00:00 Received: 10/22/10 09:50 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	16.8	33.6		10/26/10 05:34	75-34-3	
1,2-Dichloroethane	ND	ppbv	16.8	33.6		10/26/10 05:34	107-06-2	
1,1-Dichloroethene	ND	ppbv	16.8	33.6		10/26/10 05:34	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	16.8	33.6		10/26/10 05:34	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	16.8	33.6		10/26/10 05:34	156-60-5	
Tetrachloroethene	ND	ppbv	16.8	33.6		10/26/10 05:34	127-18-4	
1,1,1-Trichloroethane	**581**	ppbv	16.8	33.6		10/26/10 05:34	71-55-6	
Trichloroethene	**1020**	ppbv	16.8	33.6		10/26/10 05:34	79-01-6	
Vinyl chloride	ND	ppbv	16.8	33.6		10/26/10 05:34	75-01-4	

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10141355

QC Batch: AIR/11135 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR
Associated Lab Samples: 10141355001, 10141355002, 10141355004, 10141355005

METHOD BLANK: 878735 Matrix: Air
Associated Lab Samples: 10141355001, 10141355002, 10141355004, 10141355005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ppbv	ND	0.50	10/25/10 18:51	
1,1-Dichloroethane	ppbv	ND	0.50	10/25/10 18:51	
1,1-Dichloroethene	ppbv	ND	0.50	10/25/10 18:51	
1,2-Dichloroethane	ppbv	ND	0.50	10/25/10 18:51	
cis-1,2-Dichloroethene	ppbv	ND	0.50	10/25/10 18:51	
Tetrachloroethene	ppbv	ND	0.50	10/25/10 18:51	
trans-1,2-Dichloroethene	ppbv	ND	0.50	10/25/10 18:51	
Trichloroethene	ppbv	ND	0.50	10/25/10 18:51	
Vinyl chloride	ppbv	ND	0.50	10/25/10 18:51	

LABORATORY CONTROL SAMPLE: 878736

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ppbv	10	10.9	109	75-135	
1,1-Dichloroethane	ppbv	10	10.7	107	60-125	
1,1-Dichloroethene	ppbv	10	10.7	107	69-128	
1,2-Dichloroethane	ppbv	10	10.1	101	66-127	
cis-1,2-Dichloroethene	ppbv	10	10.6	106	67-131	
Tetrachloroethene	ppbv	10	9.8	98	68-136	
trans-1,2-Dichloroethene	ppbv	10	10.9	109	69-131	
Trichloroethene	ppbv	10	10.4	104	75-147	
Vinyl chloride	ppbv	10	10.7	107	66-125	

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QUALITY CONTROL DATA

Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10141355

QC Batch: AIR/11143 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR
Associated Lab Samples: 10141355003

METHOD BLANK: 879093 Matrix: Air
Associated Lab Samples: 10141355003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ppbv	ND	0.50	10/27/10 10:49	
1,1-Dichloroethane	ppbv	ND	0.50	10/27/10 10:49	
1,1-Dichloroethene	ppbv	ND	0.50	10/27/10 10:49	
1,2-Dichloroethane	ppbv	ND	0.50	10/27/10 10:49	
cis-1,2-Dichloroethene	ppbv	ND	0.50	10/27/10 10:49	
Tetrachloroethene	ppbv	ND	0.50	10/27/10 10:49	
trans-1,2-Dichloroethene	ppbv	ND	0.50	10/27/10 10:49	
Trichloroethene	ppbv	ND	0.50	10/27/10 10:49	
Vinyl chloride	ppbv	ND	0.50	10/27/10 10:49	

LABORATORY CONTROL SAMPLE: 879094

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ppbv	10	8.4	84	75-135	
1,1-Dichloroethane	ppbv	10	8.2	82	60-125	
1,1-Dichloroethene	ppbv	10	8.3	83	69-128	
1,2-Dichloroethane	ppbv	10	8.3	83	66-127	
cis-1,2-Dichloroethene	ppbv	10	9.4	94	67-131	
Tetrachloroethene	ppbv	10	8.7	87	68-136	
trans-1,2-Dichloroethene	ppbv	10	8.6	86	69-131	
Trichloroethene	ppbv	10	8.8	88	75-147	
Vinyl chloride	ppbv	10	8.7	87	66-125	

SAMPLE DUPLICATE: 880571

Parameter	Units	3035662002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ppbv	ND	ND		30	
1,1-Dichloroethane	ppbv	ND	ND		30	
1,1-Dichloroethene	ppbv	ND	ND		30	
1,2-Dichloroethane	ppbv	ND	ND		30	
cis-1,2-Dichloroethene	ppbv	ND	ND		30	
Tetrachloroethene	ppbv	ND	ND		30	
trans-1,2-Dichloroethene	ppbv	ND	ND		30	
Trichloroethene	ppbv	ND	ND		30	
Vinyl chloride	ppbv	ND	ND		30	

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QUALIFIERS

Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10141355

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

ANALYTE QUALIFIERS

A3 The sample was analyzed by serial dilution.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 02751.13.001 TPC-Soil Gas
Pace Project No.: 10141355

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10141355001	**SG-01**	TO-15	AIR/11135		
10141355002	**SG-02**	TO-15	AIR/11135		
10141355003	**SG-03**	TO-15	AIR/11143		
10141355004	**SG-05**	TO-15	AIR/11135		
10141355005	**Dup-01**	TO-15	AIR/11135		

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AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10141355

02488

Page: 1 of 1

12 of 13

Section A Required Client Information:

Company: RMT
Address: 3754 Ranchero Drive, Ann Arbor MI 48108
Email To: stacy.metz@rmtinc.com
Phone: 734 971 7080 Fax: 734 971 9022
Requested Due Date/TAT: 1 Week

Section B Required Project Information:

Report To: Stacy Metz
Copy To:
Purchase Order No.:
Project Name: TPC-Soil Gas
Project Number: 02751.13.001

Section C Invoice Information:

Attention: Accounts Payable
Company Name: RMT, Inc.
Address: PO Box 8923 Madison WI 53708
Pace Quote Reference:
Pace Project Manager/Sales Rep. Carolynne Trout
Pace Profile #:

Program: UST, Superfund, Emissions, Clean Air Act, Voluntary Clean Up, Dry Clean X, RCRA, Other

Location of Sampling by State: MI

Reporting Units: ug/m³ ___ mg/m³ ___ PPBV X PPMV ___ Other ___

Report Level II.___ III.___ IV. X Other ___

Method: PM10, 3C-Fixed Gas (%), TO-3, TO-3M (Methane), TO-4 (PCBs), TO-13 (PAH), TO-14, TO-15, TO15 Short List*

Section D Required Client Information

Valid Media Codes: Tedlar Bag TB; 1 Liter Summa Can 1LC; 6 Liter Summa Can 6LC; Low Volume Puff LVP; High Volume Puff HVP; Other PM10

ITEM #	AIR SAMPLE ID (Sample IDs MUST BE UNIQUE)	MEDIA CODE	PID Reading (Client only)	COLLECTED Composite Start End/Grab DATE	TIME	Composite - DATE	TIME	Canister Pressure (Initial Field - psig)	Canister Pressure (Final Field - psig)	Summa Can Number	Flow Control Number	PM10	3C-Fixed Gas (%)	TO-3	TO-3M (Methane)	TO-4 (PCBs)	TO-13 (PAH)	TO-14	TO-15	TO15 Short List*	Pace Lab ID
1	SG-01	1LC		10/21/10	1520	10/21/10	1540	26	0	1138	PA178								X		10141355001
2	SG-02	↓		↓	1328	↓	1355	26	1	1127	PA101								↓		002
3	SG-03	↓		↓	1408	↓	1423	26	0	1092	PA162								↓		003
4	~~SG-08~~ SG 05	↓		↓	1437	↓	1504	27	0	0902	PA176								↓		004
5	DUP-01	↓		↓	—	↓	—	—		1027	—								↓		005
6																					
7																					
8																					
9																					
10																					
11																					
12																					

Comments:

1-Week TAT

See PM for Short List of chlorinated compounds

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Stacy Metz	10/21/10	1733	[illegible]	10/22/10	09:50	AB

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Stacy Metz

SIGNATURE of SAMPLER: Stacy Metz DATE Signed (MM/DD/YY): 10/21/10

Temp in °C | Received on Ice Y/N | Custody Sealed Cooler Y/N | Samples Intact Y/N

ORIGINAL

Pace Analytical

AIR Sample Condition Upon Receipt

Client Name: RMT Project # 1014355

Courier: [X] Fed Ex [ ] UPS [ ] USPS [ ] Client [ ] Commercial [ ] Pace Other_____

Custody Seal on Cooler/Box Present: [ ] yes [X] no Seals intact: [ ] yes [ ] no

Packing Material: [X] Bubble Wrap [X] Bubble Bags [ ] None [ ] Other_____

Tracking #: 8741 8969 4115

Date and Initials of person examining contents: 10-22-10 [illegible]

		Comments:
Chain of Custody Present:	[X] Yes [ ] No [ ] N/A	1.
Chain of Custody Filled Out:	[X] Yes [ ] No [ ] N/A	2.
Chain of Custody Relinquished:	[X] Yes [ ] No [ ] N/A	3.
Sampler Name & Signature on COC:	[X] Yes [ ] No [ ] N/A	4.
Samples Arrived within Hold Time:	[X] Yes [ ] No [ ] N/A	5.
Short Hold Time Analysis (<72hr):	[ ] Yes [X] No [ ] N/A	6.
Rush Turn Around Time Requested:	[X] Yes [ ] No [ ] N/A	7. 1 week
Sufficient Volume:	[X] Yes [ ] No [ ] N/A	8.
Correct Containers Used:	[X] Yes [ ] No [ ] N/A	9.
-Pace Containers Used:	[X] Yes [ ] No [ ] N/A	
Containers Intact:	[X] Yes [ ] No [ ] N/A	10.
Media: AIR (CAN)		11.
Sample Labels match COC:	[X] Yes [ ] No [ ] N/A	12.

Samples Received: 7 CANS, 7 FC'S

Canisters		Flow Controllers		Stand Alone G		Tedlar Bags	
Sample Number	Can ID	Sample Number	Can ID	Sample Number	Can ID	Sample Number	Can ID
SG-01	1138		601				
SG-02	1127		PA161				
SG-03	1092		PA162				
SG-05	0902		PA176				
DUP-01	1027		PA101				
	1022		PA178				
	1133		PA199				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [signature] **Date:** 10/25/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

A106 Rev.01 (22May2009)

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(612)607-1700

December 23, 2010

Ms. Stacy Metz
RMT, INC
3754 Ranchero Dr.
Ann Arbor, MI 48108

RE: Project: 02751.13 TPC Soil Gas
Pace Project No.: 10145066

Dear Ms. Metz:
Enclosed are the analytical results for sample(s) received by the laboratory on December 10, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carolynne Trout

Carolynne Trout

carolynne.trout@pacelabs.com
Project Manager

Enclosures

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REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 02751.13 TPC Soil Gas
Pace Project No.: 10145066

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Iowa Certification #: 368
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nebraska Certification #: Pace
Nevada Certification #: MN_00064
New Jersey Certification #: MN-002
New Mexico Certification #: Pace
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: D9921
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Washington Certification #: C754
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 02751.13 TPC Soil Gas
Pace Project No.: 10145066

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10145066001	**SG-01**	Air	12/09/10 10:15	12/10/10 10:00
10145066002	**SG-12**	Air	12/09/10 11:00	12/10/10 10:00
10145066003	**SG-06**	Air	12/09/10 11:38	12/10/10 10:00
10145066004	**SG-07**	Air	12/09/10 12:04	12/10/10 10:00
10145066005	**SG-16**	Air	12/09/10 12:28	12/10/10 10:00
10145066006	**SG-10**	Air	12/09/10 13:12	12/10/10 10:00
10145066007	**SG-11**	Air	12/09/10 13:50	12/10/10 10:00
10145066008	**SG-13**	Air	12/09/10 14:13	12/10/10 10:00
10145066009	**SG-09**	Air	12/09/10 16:15	12/10/10 10:00
10145066010	**SG-03**	Air	12/09/10 14:55	12/10/10 10:00
10145066011	**SG-04**	Air	12/09/10 15:33	12/10/10 10:00
10145066012	**SG-05**	Air	12/09/10 16:58	12/10/10 10:00
10145066013	**DUP-01**	Air	12/09/10 00:00	12/10/10 10:00
10145066014	**1323**	Air		12/10/10 10:00
10145066015	**1163**	Air		12/10/10 10:00
10145066016	**1334**	Air		12/10/10 10:00
10145066017	**0814**	Air		12/10/10 10:00
10145066018	**1013**	Air		12/10/10 10:00

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SAMPLE ANALYTE COUNT

Project: 02751.13 TPC Soil Gas
Pace Project No.: 10145066

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10145066001	**SG-01**	TO-15	DR1	9
10145066002	**SG-12**	TO-15	DR1	9
10145066003	**SG-06**	TO-15	DB1	9
10145066004	**SG-07**	TO-15	DR1	9
10145066005	**SG-16**	TO-15	DB1	9
10145066006	**SG-10**	TO-15	DB1	9
10145066007	**SG-11**	TO-15	DB1	9
10145066008	**SG-13**	TO-15	DR1	9
10145066009	**SG-09**	TO-15	DR1	9
10145066010	**SG-03**	TO-15	DR1	9
10145066011	**SG-04**	TO-15	DB1	9
10145066012	**SG-05**	TO-15	DB1	9
10145066013	**DUP-01**	TO-15	DR1	9

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PROJECT NARRATIVE

Project: 02751.13 TPC Soil Gas
Pace Project No.: 10145066

Method: **TO-15**
Description: TO15 MSV AIR
Client: RMT, INC
Date: December 23, 2010

General Information:
13 samples were analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Sample Comments:

A3: This result is reported from a serial dilution
- SG-01 (Lab ID: 10145066001)
- DUP-01 (Lab ID: 10145066013)

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 02751.13 TPC Soil Gas
Pace Project No.: 10145066

Sample: SG-01 **Lab ID: 10145066001** Collected: 12/09/10 10:15 Received: 12/10/10 10:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	709	1417.97		12/16/10 17:09	75-34-3	
1,2-Dichloroethane	ND	ppbv	709	1417.97		12/16/10 17:09	107-06-2	
1,1-Dichloroethene	ND	ppbv	709	1417.97		12/16/10 17:09	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	709	1417.97		12/16/10 17:09	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	709	1417.97		12/16/10 17:09	156-60-5	
Tetrachloroethene	ND	ppbv	709	1417.97		12/16/10 17:09	127-18-4	
1,1,1-Trichloroethane	**6440**	ppbv	709	1417.97		12/16/10 17:09	71-55-6	
Trichloroethene	**17800**	ppbv	709	1417.97		12/16/10 17:09	79-01-6	
Vinyl chloride	ND	ppbv	709	1417.97		12/16/10 17:09	75-01-4	

Sample: SG-12 **Lab ID: 10145066002** Collected: 12/09/10 11:00 Received: 12/10/10 10:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	2.5	5.09		12/16/10 18:07	75-34-3	
1,2-Dichloroethane	ND	ppbv	2.5	5.09		12/16/10 18:07	107-06-2	
1,1-Dichloroethene	ND	ppbv	2.5	5.09		12/16/10 18:07	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	2.5	5.09		12/16/10 18:07	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	2.5	5.09		12/16/10 18:07	156-60-5	
Tetrachloroethene	ND	ppbv	2.5	5.09		12/16/10 18:07	127-18-4	
1,1,1-Trichloroethane	ND	ppbv	2.5	5.09		12/16/10 18:07	71-55-6	
Trichloroethene	ND	ppbv	2.5	5.09		12/16/10 18:07	79-01-6	
Vinyl chloride	ND	ppbv	2.5	5.09		12/16/10 18:07	75-01-4	

Sample: SG-06 **Lab ID: 10145066003** Collected: 12/09/10 11:38 Received: 12/10/10 10:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	3.9	7.85		12/15/10 21:29	75-34-3	
1,2-Dichloroethane	ND	ppbv	3.9	7.85		12/15/10 21:29	107-06-2	
1,1-Dichloroethene	ND	ppbv	3.9	7.85		12/15/10 21:29	75-35-4	
cis-1,2-Dichloroethene	**6.1**	ppbv	3.9	7.85		12/15/10 21:29	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	3.9	7.85		12/15/10 21:29	156-60-5	
Tetrachloroethene	**4.3**	ppbv	3.9	7.85		12/15/10 21:29	127-18-4	
1,1,1-Trichloroethane	**7.4**	ppbv	3.9	7.85		12/15/10 21:29	71-55-6	
Trichloroethene	**64.9**	ppbv	3.9	7.85		12/15/10 21:29	79-01-6	
Vinyl chloride	ND	ppbv	3.9	7.85		12/15/10 21:29	75-01-4	

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ANALYTICAL RESULTS

Project: 02751.13 TPC Soil Gas
Pace Project No.: 10145066

Sample: SG-07 **Lab ID: 10145066004** Collected: 12/09/10 12:04 Received: 12/10/10 10:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	22.2	44.31		12/16/10 19:04	75-34-3	
1,2-Dichloroethane	ND	ppbv	22.2	44.31		12/16/10 19:04	107-06-2	
1,1-Dichloroethene	ND	ppbv	22.2	44.31		12/16/10 19:04	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	22.2	44.31		12/16/10 19:04	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	22.2	44.31		12/16/10 19:04	156-60-5	
Tetrachloroethene	**24.4**	ppbv	22.2	44.31		12/16/10 19:04	127-18-4	
1,1,1-Trichloroethane	ND	ppbv	22.2	44.31		12/16/10 19:04	71-55-6	
Trichloroethene	**139**	ppbv	22.2	44.31		12/16/10 19:04	79-01-6	
Vinyl chloride	ND	ppbv	22.2	44.31		12/16/10 19:04	75-01-4	

Sample: SG-16 **Lab ID: 10145066005** Collected: 12/09/10 12:28 Received: 12/10/10 10:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	15.7	31.4		12/15/10 23:27	75-34-3	
1,2-Dichloroethane	ND	ppbv	15.7	31.4		12/15/10 23:27	107-06-2	
1,1-Dichloroethene	ND	ppbv	15.7	31.4		12/15/10 23:27	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	15.7	31.4		12/15/10 23:27	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	15.7	31.4		12/15/10 23:27	156-60-5	
Tetrachloroethene	ND	ppbv	15.7	31.4		12/15/10 23:27	127-18-4	
1,1,1-Trichloroethane	ND	ppbv	15.7	31.4		12/15/10 23:27	71-55-6	
Trichloroethene	ND	ppbv	15.7	31.4		12/15/10 23:27	79-01-6	
Vinyl chloride	ND	ppbv	15.7	31.4		12/15/10 23:27	75-01-4	

Sample: SG-10 **Lab ID: 10145066006** Collected: 12/09/10 13:12 Received: 12/10/10 10:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	8.7	17.4		12/15/10 20:59	75-34-3	
1,2-Dichloroethane	ND	ppbv	8.7	17.4		12/15/10 20:59	107-06-2	
1,1-Dichloroethene	ND	ppbv	8.7	17.4		12/15/10 20:59	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	8.7	17.4		12/15/10 20:59	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	8.7	17.4		12/15/10 20:59	156-60-5	
Tetrachloroethene	ND	ppbv	8.7	17.4		12/15/10 20:59	127-18-4	
1,1,1-Trichloroethane	ND	ppbv	8.7	17.4		12/15/10 20:59	71-55-6	
Trichloroethene	ND	ppbv	8.7	17.4		12/15/10 20:59	79-01-6	
Vinyl chloride	ND	ppbv	8.7	17.4		12/15/10 20:59	75-01-4	

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ANALYTICAL RESULTS

Project: 02751.13 TPC Soil Gas
Pace Project No.: 10145066

Sample: SG-11 **Lab ID: 10145066007** Collected: 12/09/10 13:50 Received: 12/10/10 10:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	0.84	1.68		12/15/10 22:28	75-34-3	
1,2-Dichloroethane	ND	ppbv	0.84	1.68		12/15/10 22:28	107-06-2	
1,1-Dichloroethene	ND	ppbv	0.84	1.68		12/15/10 22:28	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	0.84	1.68		12/15/10 22:28	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	0.84	1.68		12/15/10 22:28	156-60-5	
Tetrachloroethene	ND	ppbv	0.84	1.68		12/15/10 22:28	127-18-4	
1,1,1-Trichloroethane	ND	ppbv	0.84	1.68		12/15/10 22:28	71-55-6	
Trichloroethene	ND	ppbv	0.84	1.68		12/15/10 22:28	79-01-6	
Vinyl chloride	ND	ppbv	0.84	1.68		12/15/10 22:28	75-01-4	

Sample: SG-13 **Lab ID: 10145066008** Collected: 12/09/10 14:13 Received: 12/10/10 10:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	1.6	3.24		12/16/10 17:38	75-34-3	
1,2-Dichloroethane	ND	ppbv	1.6	3.24		12/16/10 17:38	107-06-2	
1,1-Dichloroethene	ND	ppbv	1.6	3.24		12/16/10 17:38	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	1.6	3.24		12/16/10 17:38	156-59-2	
trans-1,2-Dichloroethene	**2.9**	ppbv	1.6	3.24		12/16/10 17:38	156-60-5	
Tetrachloroethene	ND	ppbv	1.6	3.24		12/16/10 17:38	127-18-4	
1,1,1-Trichloroethane	ND	ppbv	1.6	3.24		12/16/10 17:38	71-55-6	
Trichloroethene	ND	ppbv	1.6	3.24		12/16/10 17:38	79-01-6	
Vinyl chloride	ND	ppbv	1.6	3.24		12/16/10 17:38	75-01-4	

Sample: SG-09 **Lab ID: 10145066009** Collected: 12/09/10 16:15 Received: 12/10/10 10:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	13.2	26.38		12/16/10 19:33	75-34-3	
1,2-Dichloroethane	ND	ppbv	13.2	26.38		12/16/10 19:33	107-06-2	
1,1-Dichloroethene	ND	ppbv	13.2	26.38		12/16/10 19:33	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	13.2	26.38		12/16/10 19:33	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	13.2	26.38		12/16/10 19:33	156-60-5	
Tetrachloroethene	ND	ppbv	13.2	26.38		12/16/10 19:33	127-18-4	
1,1,1-Trichloroethane	**61.8**	ppbv	13.2	26.38		12/16/10 19:33	71-55-6	
Trichloroethene	**51.7**	ppbv	13.2	26.38		12/16/10 19:33	79-01-6	
Vinyl chloride	ND	ppbv	13.2	26.38		12/16/10 19:33	75-01-4	

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ANALYTICAL RESULTS

Project: 02751.13 TPC Soil Gas
Pace Project No.: 10145066

Sample: SG-03 **Lab ID: 10145066010** Collected: 12/09/10 14:55 Received: 12/10/10 10:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	**47.7**	ppbv	11.9	23.71		12/16/10 16:40	75-34-3	
1,2-Dichloroethane	ND	ppbv	11.9	23.71		12/16/10 16:40	107-06-2	
1,1-Dichloroethene	ND	ppbv	11.9	23.71		12/16/10 16:40	75-35-4	
cis-1,2-Dichloroethene	**98.0**	ppbv	11.9	23.71		12/16/10 16:40	156-59-2	
trans-1,2-Dichloroethene	**48.5**	ppbv	11.9	23.71		12/16/10 16:40	156-60-5	
Tetrachloroethene	ND	ppbv	11.9	23.71		12/16/10 16:40	127-18-4	
1,1,1-Trichloroethane	ND	ppbv	11.9	23.71		12/16/10 16:40	71-55-6	
Trichloroethene	ND	ppbv	11.9	23.71		12/16/10 16:40	79-01-6	
Vinyl chloride	ND	ppbv	11.9	23.71		12/16/10 16:40	75-01-4	

Sample: SG-04 **Lab ID: 10145066011** Collected: 12/09/10 15:33 Received: 12/10/10 10:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	0.78	1.57		12/15/10 22:57	75-34-3	
1,2-Dichloroethane	ND	ppbv	0.78	1.57		12/15/10 22:57	107-06-2	
1,1-Dichloroethene	ND	ppbv	0.78	1.57		12/15/10 22:57	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	0.78	1.57		12/15/10 22:57	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	0.78	1.57		12/15/10 22:57	156-60-5	
Tetrachloroethene	ND	ppbv	0.78	1.57		12/15/10 22:57	127-18-4	
1,1,1-Trichloroethane	ND	ppbv	0.78	1.57		12/15/10 22:57	71-55-6	
Trichloroethene	ND	ppbv	0.78	1.57		12/15/10 22:57	79-01-6	
Vinyl chloride	ND	ppbv	0.78	1.57		12/15/10 22:57	75-01-4	

Sample: SG-05 **Lab ID: 10145066012** Collected: 12/09/10 16:58 Received: 12/10/10 10:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	15.7	31.4		12/15/10 21:58	75-34-3	
1,2-Dichloroethane	ND	ppbv	15.7	31.4		12/15/10 21:58	107-06-2	
1,1-Dichloroethene	ND	ppbv	15.7	31.4		12/15/10 21:58	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	15.7	31.4		12/15/10 21:58	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	15.7	31.4		12/15/10 21:58	156-60-5	
Tetrachloroethene	ND	ppbv	15.7	31.4		12/15/10 21:58	127-18-4	
1,1,1-Trichloroethane	**357**	ppbv	15.7	31.4		12/15/10 21:58	71-55-6	
Trichloroethene	**538**	ppbv	15.7	31.4		12/15/10 21:58	79-01-6	
Vinyl chloride	ND	ppbv	15.7	31.4		12/15/10 21:58	75-01-4	

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ANALYTICAL RESULTS

Project: 02751.13 TPC Soil Gas
Pace Project No.: 10145066

Sample: DUP-01 **Lab ID: 10145066013** Collected: 12/09/10 00:00 Received: 12/10/10 10:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ppbv	211	422.02		12/16/10 18:35	75-34-3	
1,2-Dichloroethane	ND	ppbv	211	422.02		12/16/10 18:35	107-06-2	
1,1-Dichloroethene	ND	ppbv	211	422.02		12/16/10 18:35	75-35-4	
cis-1,2-Dichloroethene	ND	ppbv	211	422.02		12/16/10 18:35	156-59-2	
trans-1,2-Dichloroethene	ND	ppbv	211	422.02		12/16/10 18:35	156-60-5	
Tetrachloroethene	ND	ppbv	211	422.02		12/16/10 18:35	127-18-4	
1,1,1-Trichloroethane	**772**	ppbv	211	422.02		12/16/10 18:35	71-55-6	
Trichloroethene	**849**	ppbv	211	422.02		12/16/10 18:35	79-01-6	
Vinyl chloride	ND	ppbv	211	422.02		12/16/10 18:35	75-01-4	

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QUALITY CONTROL DATA

Project: 02751.13 TPC Soil Gas
Pace Project No.: 10145066

QC Batch: AIR/11428 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR
Associated Lab Samples: 10145066003, 10145066005, 10145066006, 10145066007, 10145066011, 10145066012

METHOD BLANK: 905754 Matrix: Air
Associated Lab Samples: 10145066003, 10145066005, 10145066006, 10145066007, 10145066011, 10145066012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ppbv	ND	0.50	12/15/10 19:01	
1,1-Dichloroethane	ppbv	ND	0.50	12/15/10 19:01	
1,1-Dichloroethene	ppbv	ND	0.50	12/15/10 19:01	
1,2-Dichloroethane	ppbv	ND	0.50	12/15/10 19:01	
cis-1,2-Dichloroethene	ppbv	ND	0.50	12/15/10 19:01	
Tetrachloroethene	ppbv	ND	0.50	12/15/10 19:01	
trans-1,2-Dichloroethene	ppbv	ND	0.50	12/15/10 19:01	
Trichloroethene	ppbv	ND	0.50	12/15/10 19:01	
Vinyl chloride	ppbv	ND	0.50	12/15/10 19:01	

LABORATORY CONTROL SAMPLE: 905755

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ppbv	10	10.8	108	75-135	
1,1-Dichloroethane	ppbv	10	9.2	92	60-125	
1,1-Dichloroethene	ppbv	10	10.9	109	69-128	
1,2-Dichloroethane	ppbv	10	11.1	111	66-127	
cis-1,2-Dichloroethene	ppbv	10	10.8	108	67-131	
Tetrachloroethene	ppbv	10	10.7	107	68-136	
trans-1,2-Dichloroethene	ppbv	10	10.9	109	69-131	
Trichloroethene	ppbv	10	10.4	104	75-147	
Vinyl chloride	ppbv	10	10.4	104	66-125	

SAMPLE DUPLICATE: 907187

Parameter	Units	10145054001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ppbv	ND	ND		30	
1,1-Dichloroethane	ppbv	ND	ND		30	
1,1-Dichloroethene	ppbv	ND	ND		30	
1,2-Dichloroethane	ppbv	ND	ND		30	
cis-1,2-Dichloroethene	ppbv	ND	ND		30	
Tetrachloroethene	ppbv	ND	ND		30	
trans-1,2-Dichloroethene	ppbv	ND	ND		30	
Trichloroethene	ppbv	ND	ND		30	
Vinyl chloride	ppbv	ND	ND		30	

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QUALITY CONTROL DATA

Project: 02751.13 TPC Soil Gas
Pace Project No.: 10145066

QC Batch: AIR/11446 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR
Associated Lab Samples: 10145066001, 10145066002, 10145066004, 10145066008, 10145066009, 10145066010, 10145066013

METHOD BLANK: 907452 Matrix: Air
Associated Lab Samples: 10145066001, 10145066002, 10145066004, 10145066008, 10145066009, 10145066010, 10145066013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ppbv	ND	0.50	12/16/10 12:35	
1,1-Dichloroethane	ppbv	ND	0.50	12/16/10 12:35	
1,1-Dichloroethene	ppbv	ND	0.50	12/16/10 12:35	
1,2-Dichloroethane	ppbv	ND	0.50	12/16/10 12:35	
cis-1,2-Dichloroethene	ppbv	ND	0.50	12/16/10 12:35	
Tetrachloroethene	ppbv	ND	0.50	12/16/10 12:35	
trans-1,2-Dichloroethene	ppbv	ND	0.50	12/16/10 12:35	
Trichloroethene	ppbv	ND	0.50	12/16/10 12:35	
Vinyl chloride	ppbv	ND	0.50	12/16/10 12:35	

LABORATORY CONTROL SAMPLE: 907453

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ppbv	10	9.8	98	75-135	
1,1-Dichloroethane	ppbv	10	9.8	98	60-125	
1,1-Dichloroethene	ppbv	10	9.5	95	69-128	
1,2-Dichloroethane	ppbv	10	10.6	106	66-127	
cis-1,2-Dichloroethene	ppbv	10	9.5	95	67-131	
Tetrachloroethene	ppbv	10	10.1	101	68-136	
trans-1,2-Dichloroethene	ppbv	10	10.1	101	69-131	
Trichloroethene	ppbv	10	8.1	81	75-147	
Vinyl chloride	ppbv	10	10.3	103	66-125	

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QUALIFIERS

Project: 02751.13 TPC Soil Gas
Pace Project No.: 10145066

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

SAMPLE QUALIFIERS

Sample: 10145066001

[1] This result is reported from a serial dilution

Sample: 10145066013

[1] This result is reported from a serial dilution

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 02751.13 TPC Soil Gas
Pace Project No.: 10145066

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10145066001	**SG-01**	TO-15	AIR/11446		
10145066002	**SG-12**	TO-15	AIR/11446		
10145066003	**SG-06**	TO-15	AIR/11428		
10145066004	**SG-07**	TO-15	AIR/11446		
10145066005	**SG-16**	TO-15	AIR/11428		
10145066006	**SG-10**	TO-15	AIR/11428		
10145066007	**SG-11**	TO-15	AIR/11428		
10145066008	**SG-13**	TO-15	AIR/11446		
10145066009	**SG-09**	TO-15	AIR/11446		
10145066010	**SG-03**	TO-15	AIR/11446		
10145066011	**SG-04**	TO-15	AIR/11428		
10145066012	**SG-05**	TO-15	AIR/11428		
10145066013	**DUP-01**	TO-15	AIR/11446		

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10145066
Project Name: 02751.13 TPC Soil Gas

Lab Sample No: 10145066001
Client Sample ID: SG-01

ProjSampleNum: 10145066001
Matrix: Air

Date Collected: 12/09/10 10:15
Date Received: 12/10/10 10:00

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	35700	ug/m3	3900	417.97	12/16/10 17:09	DR1	71-55-6	
1,1-Dichloroethane	ND	ug/m3	2900	417.97	12/16/10 17:09	DR1	75-34-3	
1,1-Dichloroethene	ND	ug/m3	2900	417.97	12/16/10 17:09	DR1	75-35-4	
1,2-Dichloroethane	ND	ug/m3	2900	417.97	12/16/10 17:09	DR1	107-06-2	
cis-1,2-Dichloroethene	ND	ug/m3	2900	417.97	12/16/10 17:09	DR1	156-59-2	
Tetrachloroethene	ND	ug/m3	4900	417.97	12/16/10 17:09	DR1	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	2900	417.97	12/16/10 17:09	DR1	156-60-5	
Trichloroethene	97200	ug/m3	3900	417.97	12/16/10 17:09	DR1	79-01-6	
Vinyl chloride	ND	ug/m3	1800	417.97	12/16/10 17:09	DR1	75-01-4	

DISCLAIMER: These results have been converted to the units shown from the original units of measurement assuming 20 degrees Celsius and 1 atmosphere pressure. Values were not rounded according to EPA rounding rules. THC is quantitated based on the average response factors of several compounds; the nominal molecular weight of THC used for units conversion is the average of the molecular weights of the compounds used for quantitation.

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10145066
Project Name: 02751.13 TPC Soil Gas

Lab Sample No: 10145066002
Client Sample ID: SG-12

ProjSampleNum: 10145066002
Matrix: Air

Date Collected: 12/09/10 11:00
Date Received: 12/10/10 10:00

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	ND	ug/m3	14	5.09	12/16/10 18:07	DR1	71-55-6	
1,1-Dichloroethane	ND	ug/m3	10	5.09	12/16/10 18:07	DR1	75-34-3	
1,1-Dichloroethene	ND	ug/m3	10	5.09	12/16/10 18:07	DR1	75-35-4	
1,2-Dichloroethane	ND	ug/m3	10	5.09	12/16/10 18:07	DR1	107-06-2	
cis-1,2-Dichloroethene	ND	ug/m3	10	5.09	12/16/10 18:07	DR1	156-59-2	
Tetrachloroethene	ND	ug/m3	17	5.09	12/16/10 18:07	DR1	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	10	5.09	12/16/10 18:07	DR1	156-60-5	
Trichloroethene	ND	ug/m3	14	5.09	12/16/10 18:07	DR1	79-01-6	
Vinyl chloride	ND	ug/m3	6.5	5.09	12/16/10 18:07	DR1	75-01-4	

DISCLAIMER: These results have been converted to the units shown from the original units of measurement assuming 20 degrees Celsius and 1 atmosphere pressure. Values were not rounded according to EPA rounding rules. THC is quantitated based on the average response factors of several compounds; the nominal molecular weight of THC used for units conversion is the average of the molecular weights of the compounds used for quantitation.

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10145066
Project Name: 02751.13 TPC Soil Gas

Lab Sample No: 10145066003
Client Sample ID: SG-06

ProjSampleNum: 10145066003
Matrix: Air

Date Collected: 12/09/10 11:38
Date Received: 12/10/10 10:00

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	41	ug/m3	22	7.85	12/15/10 21:29	DB1	71-55-6	
1,1-Dichloroethane	ND	ug/m3	16	7.85	12/15/10 21:29	DB1	75-34-3	
1,1-Dichloroethene	ND	ug/m3	16	7.85	12/15/10 21:29	DB1	75-35-4	
1,2-Dichloroethane	ND	ug/m3	16	7.85	12/15/10 21:29	DB1	107-06-2	
cis-1,2-Dichloroethene	24.6	ug/m3	16	7.85	12/15/10 21:29	DB1	156-59-2	
Tetrachloroethene	29.6	ug/m3	27	7.85	12/15/10 21:29	DB1	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	16	7.85	12/15/10 21:29	DB1	156-60-5	
Trichloroethene	355	ug/m3	21	7.85	12/15/10 21:29	DB1	79-01-6	
Vinyl chloride	ND	ug/m3	10	7.85	12/15/10 21:29	DB1	75-01-4	

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10145066
Project Name: 02751.13 TPC Soil Gas

Lab Sample No: 10145066004
Client Sample ID: SG-07

ProjSampleNum: 10145066004
Matrix: Air

Date Collected: 12/09/10 12:04
Date Received: 12/10/10 10:00

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	ND	ug/m3	120	44.31	12/16/10 19:04	DR1	71-55-6	
1,1-Dichloroethane	ND	ug/m3	91	44.31	12/16/10 19:04	DR1	75-34-3	
1,1-Dichloroethene	ND	ug/m3	89	44.31	12/16/10 19:04	DR1	75-35-4	
1,2-Dichloroethane	ND	ug/m3	91	44.31	12/16/10 19:04	DR1	107-06-2	
cis-1,2-Dichloroethene	ND	ug/m3	89	44.31	12/16/10 19:04	DR1	156-59-2	
Tetrachloroethene	168	ug/m3	150	44.31	12/16/10 19:04	DR1	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	89	44.31	12/16/10 19:04	DR1	156-60-5	
Trichloroethene	759	ug/m3	120	44.31	12/16/10 19:04	DR1	79-01-6	
Vinyl chloride	ND	ug/m3	58	44.31	12/16/10 19:04	DR1	75-01-4	

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10145066
Project Name: 02751.13 TPC Soil Gas

Lab Sample No: 10145066005
Client Sample ID: SG-16

ProjSampleNum: 10145066005
Matrix: Air

Date Collected: 12/09/10 12:28
Date Received: 12/10/10 10:00

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	ND	ug/m3	87	31.4	12/15/10 23:27	DB1	71-55-6	
1,1-Dichloroethane	ND	ug/m3	65	31.4	12/15/10 23:27	DB1	75-34-3	
1,1-Dichloroethene	ND	ug/m3	63	31.4	12/15/10 23:27	DB1	75-35-4	
1,2-Dichloroethane	ND	ug/m3	65	31.4	12/15/10 23:27	DB1	107-06-2	
cis-1,2-Dichloroethene	ND	ug/m3	63	31.4	12/15/10 23:27	DB1	156-59-2	
Tetrachloroethene	ND	ug/m3	110	31.4	12/15/10 23:27	DB1	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	63	31.4	12/15/10 23:27	DB1	156-60-5	
Trichloroethene	ND	ug/m3	86	31.4	12/15/10 23:27	DB1	79-01-6	
Vinyl chloride	ND	ug/m3	41	31.4	12/15/10 23:27	DB1	75-01-4	

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10145066
Project Name: 02751.13 TPC Soil Gas

Lab Sample No: 10145066006
Client Sample ID: SG-10

ProjSampleNum: 10145066006
Matrix: Air

Date Collected: 12/09/10 13:12
Date Received: 12/10/10 10:00

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	ND	ug/m3	48	17.4	12/15/10 20:59	DB1	71-55-6	
1,1-Dichloroethane	ND	ug/m3	36	17.4	12/15/10 20:59	DB1	75-34-3	
1,1-Dichloroethene	ND	ug/m3	35	17.4	12/15/10 20:59	DB1	75-35-4	
1,2-Dichloroethane	ND	ug/m3	36	17.4	12/15/10 20:59	DB1	107-06-2	
cis-1,2-Dichloroethene	ND	ug/m3	35	17.4	12/15/10 20:59	DB1	156-59-2	
Tetrachloroethene	ND	ug/m3	60	17.4	12/15/10 20:59	DB1	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	35	17.4	12/15/10 20:59	DB1	156-60-5	
Trichloroethene	ND	ug/m3	48	17.4	12/15/10 20:59	DB1	79-01-6	
Vinyl chloride	ND	ug/m3	23	17.4	12/15/10 20:59	DB1	75-01-4	

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10145066
Project Name: 02751.13 TPC Soil Gas

Lab Sample No: 10145066007
Client Sample ID: SG-11

ProjSampleNum: 10145066007
Matrix: Air

Date Collected: 12/09/10 13:50
Date Received: 12/10/10 10:00

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	ND	ug/m3	4.7	1.68	12/15/10 22:28	DB1	71-55-6	
1,1-Dichloroethane	ND	ug/m3	3.5	1.68	12/15/10 22:28	DB1	75-34-3	
1,1-Dichloroethene	ND	ug/m3	3.4	1.68	12/15/10 22:28	DB1	75-35-4	
1,2-Dichloroethane	ND	ug/m3	3.5	1.68	12/15/10 22:28	DB1	107-06-2	
cis-1,2-Dichloroethene	ND	ug/m3	3.4	1.68	12/15/10 22:28	DB1	156-59-2	
Tetrachloroethene	ND	ug/m3	5.8	1.68	12/15/10 22:28	DB1	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	3.4	1.68	12/15/10 22:28	DB1	156-60-5	
Trichloroethene	ND	ug/m3	4.6	1.68	12/15/10 22:28	DB1	79-01-6	
Vinyl chloride	ND	ug/m3	2.2	1.68	12/15/10 22:28	DB1	75-01-4	

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10145066
Project Name: 02751.13 TPC Soil Gas

Lab Sample No: 10145066008
Client Sample ID: SG-13

ProjSampleNum: 10145066008
Matrix: Air

Date Collected: 12/09/10 14:13
Date Received: 12/10/10 10:00

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	ND	ug/m3	8.9	3.24	12/16/10 17:38	DR1	71-55-6	
1,1-Dichloroethane	ND	ug/m3	6.6	3.24	12/16/10 17:38	DR1	75-34-3	
1,1-Dichloroethene	ND	ug/m3	6.4	3.24	12/16/10 17:38	DR1	75-35-4	
1,2-Dichloroethane	ND	ug/m3	6.6	3.24	12/16/10 17:38	DR1	107-06-2	
cis-1,2-Dichloroethene	ND	ug/m3	6.4	3.24	12/16/10 17:38	DR1	156-59-2	
Tetrachloroethene	ND	ug/m3	11	3.24	12/16/10 17:38	DR1	127-18-4	
trans-1,2-Dichloroethene	11.7	ug/m3	6.4	3.24	12/16/10 17:38	DR1	156-60-5	
Trichloroethene	ND	ug/m3	8.7	3.24	12/16/10 17:38	DR1	79-01-6	
Vinyl chloride	ND	ug/m3	4.2	3.24	12/16/10 17:38	DR1	75-01-4	

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10145066
Project Name: 02751.13 TPC Soil Gas

Lab Sample No: 10145066009
Client Sample ID: SG-09

ProjSampleNum: 10145066009
Matrix: Air

Date Collected: 12/09/10 16:15
Date Received: 12/10/10 10:00

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	343	ug/m3	73	26.38	12/16/10 19:33	DR1	71-55-6	
1,1-Dichloroethane	ND	ug/m3	54	26.38	12/16/10 19:33	DR1	75-34-3	
1,1-Dichloroethene	ND	ug/m3	53	26.38	12/16/10 19:33	DR1	75-35-4	
1,2-Dichloroethane	ND	ug/m3	54	26.38	12/16/10 19:33	DR1	107-06-2	
cis-1,2-Dichloroethene	ND	ug/m3	53	26.38	12/16/10 19:33	DR1	156-59-2	
Tetrachloroethene	ND	ug/m3	91	26.38	12/16/10 19:33	DR1	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	53	26.38	12/16/10 19:33	DR1	156-60-5	
Trichloroethene	282	ug/m3	72	26.38	12/16/10 19:33	DR1	79-01-6	
Vinyl chloride	ND	ug/m3	34	26.38	12/16/10 19:33	DR1	75-01-4	

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10145066
Project Name: 02751.13 TPC Soil Gas

Lab Sample No: 10145066010
Client Sample ID: SG-03

ProjSampleNum: 10145066010
Matrix: Air

Date Collected: 12/09/10 14:55
Date Received: 12/10/10 10:00

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	ND	ug/m3	66	23.71	12/16/10 16:40	DR1	71-55-6	
1,1-Dichloroethane	196	ug/m3	49	23.71	12/16/10 16:40	DR1	75-34-3	
1,1-Dichloroethene	ND	ug/m3	48	23.71	12/16/10 16:40	DR1	75-35-4	
1,2-Dichloroethane	ND	ug/m3	49	23.71	12/16/10 16:40	DR1	107-06-2	
cis-1,2-Dichloroethene	395	ug/m3	48	23.71	12/16/10 16:40	DR1	156-59-2	
Tetrachloroethene	ND	ug/m3	82	23.71	12/16/10 16:40	DR1	127-18-4	
trans-1,2-Dichloroethene	195	ug/m3	48	23.71	12/16/10 16:40	DR1	156-60-5	
Trichloroethene	ND	ug/m3	65	23.71	12/16/10 16:40	DR1	79-01-6	
Vinyl chloride	ND	ug/m3	31	23.71	12/16/10 16:40	DR1	75-01-4	

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10145066
Project Name: 02751.13 TPC Soil Gas

Lab Sample No: 10145066011
Client Sample ID: SG-04

ProjSampleNum: 10145066011
Matrix: Air

Date Collected: 12/09/10 15:33
Date Received: 12/10/10 10:00

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	ND	ug/m3	4.3	1.57	12/15/10 22:57	DB1	71-55-6	
1,1-Dichloroethane	ND	ug/m3	3.2	1.57	12/15/10 22:57	DB1	75-34-3	
1,1-Dichloroethene	ND	ug/m3	3.1	1.57	12/15/10 22:57	DB1	75-35-4	
1,2-Dichloroethane	ND	ug/m3	3.2	1.57	12/15/10 22:57	DB1	107-06-2	
cis-1,2-Dichloroethene	ND	ug/m3	3.1	1.57	12/15/10 22:57	DB1	156-59-2	
Tetrachloroethene	ND	ug/m3	5.4	1.57	12/15/10 22:57	DB1	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	3.1	1.57	12/15/10 22:57	DB1	156-60-5	
Trichloroethene	ND	ug/m3	4.3	1.57	12/15/10 22:57	DB1	79-01-6	
Vinyl chloride	ND	ug/m3	2	1.57	12/15/10 22:57	DB1	75-01-4	

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10145066
Project Name: 02751.13 TPC Soil Gas

Lab Sample No: 10145066012
Client Sample ID: SG-05

ProjSampleNum: 10145066012
Matrix: Air

Date Collected: 12/09/10 16:58
Date Received: 12/10/10 10:00

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	1980	ug/m3	87	31.4	12/15/10 21:58	DB1	71-55-6	
1,1-Dichloroethane	ND	ug/m3	65	31.4	12/15/10 21:58	DB1	75-34-3	
1,1-Dichloroethene	ND	ug/m3	63	31.4	12/15/10 21:58	DB1	75-35-4	
1,2-Dichloroethane	ND	ug/m3	65	31.4	12/15/10 21:58	DB1	107-06-2	
cis-1,2-Dichloroethene	ND	ug/m3	63	31.4	12/15/10 21:58	DB1	156-59-2	
Tetrachloroethene	ND	ug/m3	110	31.4	12/15/10 21:58	DB1	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	63	31.4	12/15/10 21:58	DB1	156-60-5	
Trichloroethene	2940	ug/m3	86	31.4	12/15/10 21:58	DB1	79-01-6	
Vinyl chloride	ND	ug/m3	41	31.4	12/15/10 21:58	DB1	75-01-4	

DISCLAIMER: These results have been converted to the units shown from the original units of measurement assuming 20 degrees Celsius and 1 atmosphere pressure. Values were not rounded according to EPA rounding rules. THC is quantitated based on the average response factors of several compounds; the nominal molecular weight of THC used for units conversion is the average of the molecular weights of the compounds used for quantitation.

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ANALYTICAL RESULTS

Client: RMT, INC
Phone: 608-662-5352

Lab Project Number: 10145066
Project Name: 02751.13 TPC Soil Gas

Lab Sample No: 10145066013
Client Sample ID: DUP-01

ProjSampleNum: 10145066013
Matrix: Air

Date Collected: 12/09/10 0:00
Date Received: 12/10/10 10:00

Parameters	Results	Units	Report Limit	DF	Analyzed		CAS No.	Qualifiers
Air								
TO-15								
1,1,1-Trichloroethane	4280	ug/m3	1200	422.02	12/16/10 18:35	DR1	71-55-6	
1,1-Dichloroethane	ND	ug/m3	870	422.02	12/16/10 18:35	DR1	75-34-3	
1,1-Dichloroethene	ND	ug/m3	850	422.02	12/16/10 18:35	DR1	75-35-4	
1,2-Dichloroethane	ND	ug/m3	870	422.02	12/16/10 18:35	DR1	107-06-2	
cis-1,2-Dichloroethene	ND	ug/m3	850	422.02	12/16/10 18:35	DR1	156-59-2	
Tetrachloroethene	ND	ug/m3	1500	422.02	12/16/10 18:35	DR1	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	850	422.02	12/16/10 18:35	DR1	156-60-5	
Trichloroethene	4640	ug/m3	1200	422.02	12/16/10 18:35	DR1	79-01-6	
Vinyl chloride	ND	ug/m3	550	422.02	12/16/10 18:35	DR1	75-01-4	

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ANALYTICAL RESULTS

Client:	RMT, INC	Lab Project Number:	10145066
Phone:	608-662-5352	Project Name:	02751.13 TPC Soil Gas

PARAMETER FOOTNOTES

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AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10145066

02538

Page: 1 of 2

Section A Required Client Information:

Company: RMT
Address: 3754 Ranchero Drive, Ann Arbor MI 48108
Email To: stacy.metz@rmtinc.com
Phone: 734 971 7080 Fax: 734 971 9022
Requested Due Date/TAT: Standard

Section B Required Project Information:

Report To: Stacy Metz
Copy To:
Purchase Order No.:
Project Name: TDC Soil Gas
Project Number: 02751.13

Section C Invoice Information:

Attention: Accounts Payable
Company Name: RMT, Inc
Address: 744 Heartland ~~PO Box~~ Madison WI
Pace Quote Reference:
Pace Project Manager/Sales Rep. Carolynne Trout
Pace Profile #:

Program: ☐ UST ☐ Superfund ☐ Emissions ☐ Clean Air Act ☐ Voluntary Clean Up ☐ Dry Clean ☒ RCRA ☐ Other

Location of Sampling by State: MI

Reporting Units: ug/m³ mg/m³ PPBV ☒ PPMV Other

Report Level: II. III. IV ☒ Other

Method: PM10, 3C- Fixed Gas (%), TO-3, TO-3M (Methane), TO-4 (PCBs), TO-13 (PAH), TO-14, TO-15, TO15 Short List*

Section D Required Client Information

AIR SAMPLE ID

Sample IDs MUST BE UNIQUE

Valid Media Codes

MEDIA	CODE
Tedlar Bag	TB
1 Liter Summa Can	1LC
6 Liter Summa Can	6LC
Low Volume Puff	LVP
High Volume Puff	HVP
Other	PM10

ITEM #	AIR SAMPLE ID	MEDIA CODE	PID Reading (Client only)	COLLECTED Composite Start End/Grab DATE	TIME	Composite - DATE	TIME	Canister Pressure (Initial Field - psig)	Canister Pressure (Final Field - psig)	Summa Can Number	Flow Control Number	PM10	3C- Fixed Gas (%)	TO-3	TO-3M (Methane)	TO-4 (PCBs)	TO-13 (PAH)	TO-14	TO-15	TO15 Short List*	Pace Lab ID
1	SG-01	1LC	4.5	12/9/10	1000	12/9/10	1015	0	28	1157	PA174								X		10145066001
2	SG-12	1LC	0.4		1048		1100	0	29.5	922	PA177										002
3	SG-06		1.8		1128		1138	0	26	902	PA240										003
4	SG-07		2.5		1153		1204	25	0	1010	PA167										004
5	SG-16		1.7		1217		1228	30	+1	876	PA207										005
6	SG-10		0.5		1252		1312	27	1	1310	117										006
7	SG-11*		1.1		1330		1350	-35	11	908	416										007
8	SG-13		0.2		1403		1413	28	1	1351	243 613 SEM										008
9	~~SG-04~~									~~1314~~ SEM	~~248~~ SEM										
10	~~SG-08~~										SEM										
11	SG-09		1.2		1600		1615	27	1	1003	41										009
12	SG-03		0.3		1442		1455	25	0	1314	613 245 SEM										010

Comments: Gauge read a vacuum of 10 prior to applying vacuum

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Stacy Metz	12/9/10	1826	FedEx		
			~~Agnt Exch Pac~~	12-10-10	10:00

SAMPLE CONDITIONS

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
AMB	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Stacy Metz

SIGNATURE of SAMPLER: Stacy Metz

DATE Signed (MM/DD/YY): 12/09/10

ORIGINAL

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414 Air Technical Phone: 612.607.6386

Pace Analytical®
www.pacelabs.com

AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10145066

02489

Page: 2 of 2

Section A Required Client Information:

Company: RMT
Address: 3754 Ranchero Dr, Ann Arbor MI 48108
Email To: stacy.metz@rmtinc.com
Phone: 734 971 7694 Fax: 734 971 9032
Requested Due Date/TAT: std

Section B Required Project Information:

Report To: Stacy Metz
Copy To:
Purchase Order No.:
Project Name: TPC Soil Gas
Project Number: 02751.13

Section C Invoice Information:

Attention: Accounts Payable
Company Name: RMT Inc
Address: 744 Heartland Madison WI
Pace Quote Reference:
Pace Project Manager/Sales Rep. Carolynne Trout
Pace Profile #:

Program: ☐ UST ☐ Superfund ☐ Emissions ☐ Clean Air Act ☐ Voluntary Clean Up ☐ Dry Clean ☒ RCRA ☐ Other

Location of Sampling by State: MI

Reporting Units: ug/m³ ___ mg/m³ ___ PPBV ☒ PPMV ___ Other ___

Report Level: II. ___ III. ___ IV. ☒ Other ___

Section D Required Client Information

AIR SAMPLE ID
Sample IDs MUST BE UNIQUE

Valid Media Codes

MEDIA	CODE
Tedlar Bag	TB
1 Liter Summa Can	1LC
6 Liter Summa Can	6LC
Low Volume Puff	LVP
High Volume Puff	HVP
Other	PM10

ITEM #	AIR SAMPLE ID	MEDIA CODE	PID Reading (Client only)	COLLECTED Composite Start End/Grab DATE	TIME	Composite - DATE	TIME	Canister Pressure (Initial Field - psig)	Canister Pressure (Final Field - psig)	Summa Can Number	Flow Control Number	Method: PM10	3C- Fixed Gas (%)	TO-3	TO-3M (Methane)	TO-4 (PCBs)	TO-13 (PAH)	TO-14	TO-15	TO15 Short List*	Pace Lab ID
1	SG-04	1LC	0.2	12/9/10	1548	12/9/10	1533	29	0	1331	107A								X		10145066011
2	SG-05	↓	2.5	↓	1636	↓	1658	25	0	1032	PA194										012
3	DUP-01		—		—		—	—	—	1100											013
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

Comments :

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Stacy Metz	12/9/10	1836	FedEx		
			[illegible] PACE	12-10-10	10:00 AM

SAMPLE CONDITIONS

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Stacy Metz
SIGNATURE of SAMPLER: Stacy Metz
DATE Signed (MM / DD / YY): 12/09/10

ORIGINAL

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414 Air Technical Phone: 612.607.6386

AIR Sample Condition Upon Receipt

Pace Analytical

Client Name: RMT Project # 10145066

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other_____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other_____

Optional: Proj. due Date: Proj. Name:

Tracking #: 8746 3878 4863, 7995 2593 4965

Date and Initials of person examining contents: 12-10-10 JF

		Comments:
Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Media: AIR (CAN)		11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.

Samples Received: 18 CANS, 18 FC'S

Canisters		Flow Controllers		Stand Alone G		Tedlar Bags	
Sample Number	Can ID	Sample Number	Can ID	Sample Number	Can ID	Sample Number	Can ID
SG-01	1157		PA174	SG-04	1331		107A
SG-12	0922		PA177	SG-05	1032		PA144
SG-06	0902		PA240	DUP-01	1106		
SG-07	1010		PA167				
SG-16	0876		PA207		1393		145
SG-10	1310		117		1163		164
SG-11	0908		A16		1334		120
SG-13	1351		613		0814		45
SG-09	1000		041		1013		16
SG-03	1314		248				40

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: CJ [signature] **Date:** 12/10/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

A106 Rev.01 (22May2009)

Attachment 3

US EPA ARCHIVE DOCUMENT

Laboratory Data Validation Report
September 2010 Soil Gas Sample Event
Former Tecumseh Products Site
Tecumseh, Michigan

Fourteen soil gas samples were collected September 21 - 23, 2010 and analyzed by Pace Analytical Services, Inc., located in Minneapolis, Minnesota. The samples were analyzed for volatile organic analytes by USEPA Method 8260B following Tecumseh Products Quality Assurance Project Plan (QAPP) specified protocols. RMT performed a validation of the laboratory data. The following sections summarize the data validation procedure and the results of the validation.

Validation Procedure

The analytical data were validated using the USEPA National Functional Guidelines for Organic Data Review (USEPA, 2008). The data validation included a review of the spike, duplicate, and blank results from the laboratory, as well as verification that the sample holding times were met. RMT reviewed additional QC information to check for appropriate matrix performance using the analytical methods specified by the laboratory. The procedures RMT used to evaluate data in general included the following items:

- Checked technical holding times for analyses
- Reviewed data for blanks, laboratory duplicates, and laboratory control samples
- Determined field precision from blind field duplicate data
- Assessed the usability of the data

The data validation report addresses the following items:

- Usability of the data if QC results suggest potential problems with all or some of the data
- Potential sample contamination due to blank contributions
- Actions regarding specific QC criteria exceedences

RMT reviewed internal standard areas and retention times, method blanks, field and laboratory duplicate relative percent differences (RPDs), Laboratory Control Sample (LCS) recoveries, and holding times.

Findings

The laboratory completeness goals for the project were met. The procedures specified in the methods were implemented, and the data packages were found to contain all of the deliverables

US EPA ARCHIVE DOCUMENT

necessary for validation of the analytical data. The discussion that follows describes the QA/QC results and evaluation.

- The laboratory met technical holding times for all samples.
- Internal standard areas and retention times were reviewed and found to be within acceptable QC limits.
- The laboratory performed an LCS with each analytical batch. All results were within the laboratory control limits.
- Contaminants were not detected in the method blanks.

Data quality objectives for most of the samples were met. The exceptions are described below. Potential problems with five of the samples (SG-01, Dup-01 (SG-01), SG-02, SG-03, and SG-05) were identified. The problems included:

- Poor duplicate reproducibility. One duplicate sample was collected. Dup-01 corresponded with soil sample SG-01. Five constituents were detected in the parent sample (SG-01) and two constituents (1,1,1-TCA and TCE) were detected in the duplicate. The calculated RPDs exceeded QC limits; therefore, as a minimum corrective measure "j" flags are assigned to samples SG-01 and Dup-01 for 1,1,1-TCA and TCE. The reporting limit for the remaining three constituents that were not detected in the duplicate was much higher than the detected concentrations in the parent sample. Therefore, flags were not assigned to 1,1-DCA, *cis*-1,2-DCE, or PCE.
- Elevated detection limits due to unknown and unexpected matrix inferences; and
- Results which are inconsistent with historic data.

All of these problems could be attributed to sample contamination. An attempt was made to identify potential sources of contamination, but neither field and laboratory personnel could not identify the source of these problems. Consequently, as a corrective measure, a re-sample event was conducted in October 2010 at sample locations SG-01, SG-02, SG-03, and SG-05. September 2010 data from these locations are not considered usable. For the remainder of the data, the data quality objectives for the project were met, and the data are usable.

Prepared by: Jennifer Meek and Stacy Metz
Reviewed by: Terry Hertz and Graham Crockford

US EPA ARCHIVE DOCUMENT

Laboratory Data Validation Report
October 2010 Soil Gas Re-Sample Event
Former Tecumseh Products Site
Tecumseh, Michigan

Five soil gas samples were collected by RMT on October 21, 2010 and analyzed by Pace Analytical Services, Inc., located in Minneapolis, Minnesota. The samples were analyzed for volatile organic analytes by USEPA Method 8260 B following Tecumseh Products Quality Assurance Project Plan (QAPP) specified protocols. RMT performed a validation of the laboratory data. The following sections summarize the data validation procedure and the results of the validation.

Validation Procedure

The analytical data were validated using the USEPA National Functional Guidelines for Organic Data Review (USEPA, 2008). The data validation included a review of the spike, duplicate, and blank results from the laboratory, as well as verification that the sample holding times were met. RMT reviewed additional QC information to check for appropriate matrix performance using the analytical methods specified by the laboratory. The procedures RMT used to evaluate data in general included the following items:

- Checked technical holding times for analyses
- Reviewed data for blanks, laboratory duplicates, and laboratory control samples
- Determined field precision from blind field duplicate data
- Assessed the usability of the data

The data validation report addresses the following items:

- Usability of the data if QC results suggest potential problems with all or some of the data
- Potential sample contamination due to blank contributions
- Actions regarding specific QC criteria exceedences

RMT reviewed internal standard areas and retention times, method blanks, field and laboratory duplicate relative percent differences (RPDs), Laboratory Control Sample (LCS) recoveries, and holding times.

Findings

The data quality objectives and laboratory completeness goals for the project were met, and the data are usable. The procedures specified in the methods were implemented, and the data

US EPA ARCHIVE DOCUMENT

packages were found to contain all of the deliverables necessary for validation of the analytical data. The discussion that follows describes the QA/QC results and evaluation.

- The laboratory met technical holding times for all samples.
- Internal standard areas and retention times were reviewed and found to be within acceptable QC limits.
- The laboratory performed an LCS with each analytical batch. All results were within the laboratory control limits.
- Contaminants were not detected in the method blanks.
- One field duplicate sample was collected. Dup-01 corresponded with soil sample SG-05. Two constituents were detected in both the parent sample (SG-05) and the duplicate (Dup-01): 1,1,1-trichloroethane and trichloroethene. The calculated RPDs did not exceed QC limits.

Prepared by: Jennifer Meek
Reviewed by: Stacy Metz and Graham Crockford

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