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May 8, 2018

Ms. Carrie Stoltz
Wisconsin Department of Natural Resources
107 Sutliff Avenue
Rhinelander, WI 54501

Subject: Vapor Intrusion Investigation Results – Sampling Event 1
Former Northwoods Laundry Site, Minocqua, Wisconsin
WisDOT Project ID #0656-50-31; WDNR BRRTS #02-44-000517

Dear Ms. Stoltz:

This letter presents a summary of the first round of vapor intrusion (VI) monitoring completed for the Former Northwoods Laundry Site (BRRTS #02-44-000517) in Minocqua, Wisconsin (Figure 1). The purpose of this document is to provide a summary of the monitoring completed to evaluate vapor intrusion in select properties near the Former Northwoods Laundry Site and to provide recommendations for further monitoring.

Introduction

The former Northwoods Laundry property (Site) was located at 405 Front Street in Minocqua, Wisconsin. The Wisconsin Department of Transportation (WisDOT) became the Responsible Party (RP) for the chlorinated volatile organic compounds (CVOCs) dissolved phase plume (primarily trichloroethene (TCE) and tetrachloroethene (PCE)) at the Site when it acquired the property for USH 51 reconstruction activities in 1995. A summary of the Site background was included in the Vapor Intrusion Investigation Work Plan ("VI Work Plan"; TRC, 2018), submitted to the Wisconsin Department of Natural Resources (WDNR) in March of 2018.

TRC Environmental Corporation (TRC) on behalf of WisDOT completed a vapor pathway screening assessment to determine if properties near the Site would warrant an invasive VI pathway evaluation. The main conclusions of the assessment were that invasive vapor sampling would be required at:

- One abandoned garage building located east of the former Northwoods Laundry building location;

- Seven small commercial buildings to the west-northwest of the Site along Front Street (Note some properties include multiple business but generally have individual or shared lower levels if present); and
- One residential property to the west of the Site.

The number and type of samples recommended were based on the type and condition of each property. Table 1 includes a list of the properties with sample details and Figure 2 identifies the location of each property with respect to the Site.

Vapor Intrusion Field Screening Summary

In accordance with the Work Plan, TRC completed background air, indoor air, and sub-slab vapor sampling at nine parcels identified in Table 1 and on Figure 2. TRC was onsite between March 21 and 23, 2018 to complete the monitoring event. This initial VI monitoring event was conducted to assess the VI pathway at the site under conservative sampling conditions. The locations of the sample collection points for each parcel are shown on Figures 3 – 7.

Background (Outdoor) Air Samples

Background ambient air (Outdoor) samples were collected near the properties being investigated to provide additional information about ambient air quality surrounding the properties. Two background air samples (Outdoor 1 and Outdoor 2) were collected over the three-day monitoring event. Outdoor 1 was collected between March 21 and 22 and Outdoor 2 between March 22 and 23. Each background air sample was collected using a 6-liter SUMMA® canister with a 24-hour regulator. The sample duration was shortened from the planned 24-hour period for select samples where canister vacuum had depreciated below 5 inches of mercury (in Hg). Each SUMMA® canister was submitted to PACE Analytical Laboratory for EPA Method Toxic Organic (TO) -15 analyses for a select list of CVOCs (PCE, TCE, cis-1,2 dichloroethene, trans-1,2 dichloroethene, and vinyl chloride). The location of the two background samples are shown on Figures 4 and 7.

Indoor Air Samples

Indoor air sample(s) were collected from the lower level of the residential building and from the lower level or main level for the small commercial buildings (depending on construction) prior to the installation of the sub-slab sample point. Overall, 10 indoor air samples were collected during the monitoring event. Each indoor air sample was collected using a 6-liter SUMMA® canister with a 24-hour regulator. The sample duration was

shortened from the planned 24-hour period for select samples where canister vacuum had depreciated below 5 inches of mercury (in Hg). Each SUMMA® canister was submitted to PACE Analytical Laboratory for EPA Method TO -15 analyses for a select list of CVOCs (PCE, TCE, cis-1,2 dichloroethene, trans-1,2 dichloroethene, and vinyl chloride). The locations of the indoor air samples are shown on Figures 4 through 7.

Sub-slab Vapor Samples

Sub-slab vapor sample(s) were collected from the lower level of the residential building and from the lower level or main level for the small commercial buildings (depending on construction). Based on the layout and size of select properties, multiple sub-slab samples were collected. Overall, 12 sub-slab vapor samples and one duplicate sample were collected during the monitoring event. The duplicate sample was collected in conjunction with the sub-sample collected from 300 Front Street as a quality assurance measure. In addition, three leak tests (Water Dam Test, Helium Shroud Test, and Shut-in Test) were completed as outlined in the Work Plan to check the integrity of the sampling equipment. Each sub-slab vapor sample was collected using a 6-liter SUMMA® canister with a 30-minute regulator. The sample duration was extended past 30-minutes for select samples where sufficient vacuum had not depreciated to below at least 8 in Hg. Each SUMMA® canister was submitted to PACE Analytical Laboratory for EPA Method TO -15 analyses for a select list of CVOCs (PCE, TCE, cis-1,2 dichloroethene, trans-1,2 dichloroethene, and vinyl chloride). The locations of the sub-slab vapor samples are shown on Figures 3 - 7.

Vapor Intrusion Field Screening Results

Results from the first round of VI sampling, conducted under conservative conditions, for the former Northwoods Laundry Site indicate the presence of CVOCs in, and below select properties, and within the areas background ambient air. The VI sampling results were compared to the WDNR Vapor Action Levels (VALs) for indoor air and Vapor Risk Screening Levels (VRSLs) for sub-slab vapors. No exceedances of the WDNR VALs or VRSLs were reported. A summary of the laboratory analytical results and the leak test data are included in Table 2, and the complete laboratory analytical reports are included in Attachment 1. A brief discussion of the sampling results is provided below.

Background (Outdoor) Air Sample Results

Background sample Outdoor 1 was collected from the parking lot area along the south side of 317 Front Street. PCE was the only CVOC detected in the sample at a concentration of 16.7 $\mu g/m^3$. The second background sample, Outdoor 2, was collected from the southeast

corner of the building located at 300 Front Street. There were no detections of CVOCs in the background Outdoor 2 sample.

Indoor Air Sample Results

Ten indoor air samples were collected between March 21 and 23, 2018. Six of the 10 samples contained detections of PCE. TCE, cis-1,2 dichloroethene, trans-1,2 dichloroethene, and vinyl chloride were not detected in any of the indoor air samples. Of the six samples with PCE detections, four were reported as estimated concentrations (above the limit of detection but below the limit of quantitation). None of samples with PCE detections exceeded the WDNR indoor air VALs for residential or small commercial properties.

Sub-slab Vapor Sample Results

Twelve sub-slab vapor samples were collected between March 22 and 23, 2018. PCE was detected in 10 of the 12 sub-slab samples; however, none of the concentrations of PCE exceeded the WDNR sub-slab VRSL for residential or small commercial properties. In addition, one sample (301-307 SS-2) contained concentrations of TCE, cis-1,2 dichloroethene, trans-1,2 dichloroethene, and vinyl chloride above the laboratory method detection limit. However, the detected concentrations of the reported analytes were below their respective WDNR sub-slab VRSLs for small commercial properties.

Conclusions

TRC, on behalf of WisDOT, completed a VI pathway sampling evaluation to determine if select properties near the Site contain a risk, or a potential future risk, of VI due to the presence of a dissolved phase groundwater plume of PCE and TCE. Results from the first round of sampling indicate that there are CVOCs in and below select properties and within the background ambient air. However, the results of the first round of VI sampling performed under conservative conditions, were below the WDNR indoor air VALs and sub-slab VRSLs. Based on these results, TRC recommends that one additional round of VI sampling be completed in June/July 2018. We recommend that the second round include all the properties included in the first round. A third sampling event will be evaluated once the additional results from the June/July event are available.

If you have any questions regarding this sampling evaluation, please contact me at (608) 826-3665, or Theodore O'Connell at (608) 826-3648.

Sincerely,

TRC Environmental Corporation

Andrew M. Stehn, P.E.
Project Engineer

Theodore O'Connell
Project Manager

cc: Shar TeBeest – WisDOT (PDF via email)

References

TRC Environmental Corporation (TRC). 2018. Vapor Intrusion Investigation Work Plan, Former Northwoods Laundry Site, Minocqua, Wisconsin. Prepared by TRC Environmental Corporation, Madison, Wisconsin. March 2018

List of Tables

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Tables

Table 1
Vapor Intrusion Monitoring Summary
Former Northwoods Laundry (BRRTS #02-44-000517, WISDOT #0656-50-31)
Minocqua, Oneida County, Wisconsin
TRC Project # 298526.0000.0000

TRC Property ID	Site Address	Site Contact	Lower Level Present	Indoor Air Sample	Indoor Air Sample ID	Sub-slab Vapor Sample	Sub-slab Vapor Sample ID
1	***Property did not contain any building/structures, so was not further assessed.***						
2	***Property did not contain any building/structures, so was not further assessed.***						
3	405 Front Street	William Schmitz	N	0	-	1	405-SS
4	515 Chippewa Street	Curtis Trinko	Y	1	515-IA	1	515-SS
5	329 East Front Street	Curtis Trinko	N	1	329-IA	1	329-SS
6	***Property was a drive way between 321 Front Street and 329 East Front Street, so was not further assessed.***						
7	321 Front Street	Vic Ouimette	Y	1	321-IA	1	321-SS
8	313 Front Street	Vic Ouimette	Y	1	313-IA	1	313-SS
8	315 Front Street	Vic Ouimette	Y	1	315-IA	1	315-SS
8	317 Front Street	Vic Ouimette	Y	1	317-IA	1	317-SS
9 & 10	301-307 Front Street	John and Tim Teichmiller	Y	2	301-307-IA-C and 301-307-IA-S	3	301-307-SS-1, 301-307-SS-2, and 301-307-SS-3
11	527 Oneida Street	Scot and Susan Bassett	Y	1	527-IA	1	527-SS
12	***Property contained a public restroom, but was not further assessed based on the delineated PCE/TCE plume extents.***						
13	300 Front Street	David and Susan Jaster	N	1	300-IA	1	300-SS and DUP-01
14	***Property did not contain any building/structures, so was not further assessed.***						
15	***Property contained a building, but was not further assessed based on the delineated PCE/TCE plume extents.***						
16	***Property contained a building, but was not further assessed based on the delineated PCE/TCE plume extents.***						

Notes:

1. The sample quantities listed above were collected during the first vapor intrusion monitoring event in March 2018.

2. Two outdoor air samples (sample identification Outdoor 1 and Outdoor 2) were collected during the first monitoring event.

Created By: A.Stehn 4/26/2018

Checked By: A. Schroeder 4/30/2018

Table 2
Air/Vapor Sampling Results
Former Northwoods Laundry (BRRTS #02-44-000517, WISDOT #0656-50-31)
Minocqua, Oneida County, Wisconsin
TRC Project # 298526.0000.0000

Map ID	Address	Sample Type	Sample ID	Date	Leak Check	Shut-In Test[4]	Helium Shroud Test			Vapor Results[8][9]				
					Water Dam[3]		Background[5]	Inside Shroud[6]	Sample Port[7]	Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride
					-	-	%	%	%	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
-	-	Outdoor	Outdoor - 1	3/21/18 - 3/22/2018	-	-	-	-	-	16.7	<0.39	<0.49	<0.42	<0.18
-	-	Outdoor	Outdoor - 2	3/22/2018 - 3/23/2018	-	-	-	-	-	<0.43	<0.40	<0.51	<0.44	<0.19
3	405 Front Street, Minocqua, WI 54548	Sub-Slab	405-SS	3/23/2018	Pass	Pass	0	45.3	0	15.5	<0.42	<0.54	<0.47	<0.20
4[8]	515 Chippewa St., Minocqua, WI 54548	Indoor Air	515-IA	3/21/2018 - 3/22/2018	-	-	-	-	-	<0.40	<0.38	<0.48	<0.42	<0.18
		Sub-Slab	515-SS	3/22/2018	Pass	Pass	0	36.9	0	<0.48	<0.45	<0.57	<0.50	<0.21
5	329 E Front St., Minocqua, WI 54548	Indoor Air	329-IA	3/21/2018 - 3/22/2018	-	-	-	-	-	0.47J	<0.37	<0.47	<0.41	<0.18
		Sub-Slab	329-SS	3/22/2018	Pass	Pass	0	31.8	0	11.2	<0.42	<0.53	<0.46	<0.20
7	321 E Front St., Minocqua, WI 54548	Indoor Air	321-IA	3/21/2018 - 3/22/2018	-	Pass	-	-	-	<0.43	<0.40	<0.51	<0.44	<0.19
		Sub-Slab	321-SS	3/22/2018	Pass	-	0	43.2	0	8.5	<0.43	<0.55	<0.47	<0.20
8	317 E Front St., Minocqua, WI 54548	Indoor Air	317-IA	3/21/2018 - 3/22/2018	-	Pass	-	-	-	0.48J	<0.39	<0.49	<0.42	<0.18
		Sub-Slab	317-SS	3/22/2018	Pass	-	0	54	0	41.9	<0.49	<0.62	<0.54	<0.23
	315 E Front St., Minocqua, WI 54548	Indoor Air	315-IA	3/21/2018 - 3/22/2018	-	Pass	-	-	-	<0.43	<0.40	<0.51	<0.44	<0.19
		Sub-Slab	315-SS	3/22/2018	Pass	-	0	23.1	0	2.7	<0.42	<0.54	<0.47	<0.20
	313 E Front St., Minocqua, WI 54548	Indoor Air	313-IA	3/21/2018 - 3/22/2018	-	Pass	-	-	-	0.93J	<0.42	<0.53	<0.46	<0.20
		Sub-Slab	313-SS	3/22/2018	Pass	-	0	46.4	0	2.4	<0.43	<0.55	<0.47	<0.20
9 & 10	301 -307 E Front St., Minocqua, WI 54548 & 524 Oneida St., Minocqua, WI 54548	Indoor Air	301-307-IA-C	3/21/2018 - 3/22/2018	-	-	-	-	-	1.9	<0.40	<0.51	<0.44	<0.19
		Indoor Air	301-307-IA-S	3/21/2018 - 3/22/2018	-	-	-	-	-	1.4	<0.53	<0.67	<0.58	<0.25
		Sub-Slab	301-307-SS-1	3/22/2018	Pass	Pass	0	46.1	0.12	4.2	<0.43	<0.55	<0.47	<0.20
		Sub-Slab	301-307-SS-2	3/22/2018	Pass	Pass	0	46.2	0	10.9	3.4	2.1	1.8	1.8
		Sub-Slab	301-307-SS-3	3/22/2018	Pass	Pass	0	42.4	0	308	<0.60	<0.77	<0.66	<0.28
11	527 Oneida St., Minocqua, WI 54548	Indoor Air	527-IA	3/22/2018 - 3/23/2018	-	-	-	-	-	0.55J	<0.42	<0.53	<0.46	<0.20
		Sub-Slab	527-SS	3/23/2018	Pass	Pass	0	37	0	9.6	<0.43	<0.55	<0.47	<0.20
13	300 E Front St., Minocqua, WI 54548	Indoor Air	300-IA	3/22/2018 - 3/23/2018	-	-	-	-	-	<0.42	<0.39	<0.50	<0.43	<0.18
		Sub-Slab	300-SS	3/23/2018	Pass	Pass	0	21.1	0	<0.44	<0.42	<0.53	<0.46	<0.20
		Duplicate	DUP-01	3/23/2018						<0.44	<0.42	<0.53	<0.46	<0.20
Residential[8]				Indoor Vapor Action Level[1]						42	2.1	--	--	1.7
				Sub-Slab Vapor Screening Level[2]						1,400	70	--	--	57
Small Commercial[9]				Indoor Vapor Action Level[1]						180	8.8	--	--	28
				Sub-Slab Vapor Screening Level[2]						6,000	290	--	--	930

Notes:

Updated by: A. Stehn 4/26/2018

Checked by: A. Schroeder 4/30/2018

VAL = Vapor Action Level

VSL = Vapor Screening Level

- = not applicable

-- = no standard developed for this parameter

J = Estimated concentration at or above the laboratory limit of detection and below the laboratory limit of quantitation.

µg/m^3 = micrograms per cubic meter

Bold text indicates an exceedance of an Indoor Vapor Action Level or Sub-Slab Vapor Screening Level

Footnotes:

(1) VALs for Indoor Air from Regional Screening Tables: https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-november-2017. Uses a 1-in-100,000 excess lifetime cancer risk and HI=1 for screening indoor air.

(2) An attenuation factor of 0.03 (dilution factor of 33) is applied to the Indoor VALs to determine the VSLs for Sub-Slab Vapor for residential/small commercial buildings.

(3) Water dam was created by pouring water around the Cox-Colvin Vapor Pin™ sample port following installation. If water maintained constant head, then tight seal was verified at the port.

(4) A vacuum was applied to the sample train and allowed to sit for 6 minutes based on the use of 6-L Summa canisters. If there was no noticeable change in the vacuum, the shut-in test passed.

(5) A helium meter was connected to the vapor probe and the sub-slab vapors were tested to obtain a background concentration prior to the helium test being completed.

(6) A shroud was installed around the vapor pin and filled with helium at a concentration between 20% and 50% by volume.

(7) While helium at a concentration between 20% and 50% by volume was maintained in the shroud, sub-slab vapors were retested using the helium meter. If the concentration was less than 5% by volume, the helium test passed and a sample was collected.

(8) 515 Chippewa Street is a residential home currently used for storage for the adjacent business located at 329 E Front Street. This property was evaluated using the Residential VAL and VSL.

(9) Results were compared to the Small Commercial VAL and VSL, with the exception of the property at 515 Chippewa Street.

Figures

BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

N

1 " = 2,000 '
1:24,000

0 2,000 4,000
FEET

TRC

708 Heartland Trail
Suite 3000
Madison, WI 53717
Phone: 608.826.3600

TRC - GIS

PROJECT:

WISDOT ID# 0656-50-31
FORMER NORTHWOODS LAUNDRY
MINOCQUA, ONEIDA COUNTY, WISCONSIN

TITLE:

SITE LOCATION MAP

DRAWN BY:	R. SUEMNICHT
CHECKED BY:	T. O'CONNELL
APPROVED BY:	D. HAAK
DATE:	MAY 2018
PROJ. NO.:	298526
FILE:	298526-019slm.mxd

FIGURE 1

E:\WI_DOT\2016_242567\298526-019slm.mxd -- Saved By: RSUEMNICHT on 5/8/2018, 10:43:20 AM

LEGEND

- TRC SMALL DIAMETER PIEZOMETER
- TRC SMALL DIAMETER WATER TABLE WELL
- NOVEMBER 2017 PCE ISOCONCENTRATION CONTOUR (DASHED WHERE INFERRED)
- VAPOR SAMPLING NOT COMPLETED AS NO BUILDINGS ARE PRESENT
- PARCEL WAS INVESTIGATED AND VAPOR SAMPLING COMPLETED
- VAPOR SAMPLING NOT COMPLETED BASED ON EXTENTS OF CONTAMINATION
- APPROXIMATE FORMER NORTHWOODS LAUNDRY BUILDING EXTENT
- WELL ID / *PCE* / *TCE* — NOVEMBER 2017 GROUNDWATER SAMPLING RESULTS (µg/L)
- 1 — TRC PROPERTY ID

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO & PARTNERS, JULY 2015.
2. MAP PROJECTION AND GRID COORDINATES ARE NAD83 STATE PLANE WISCONSIN- NORTH (US SURVEY FEET).
3. ALL MAP FEATURE LOCATIONS ARE APPROXIMATE.
4. TRC SMALL DIAMETER WELLS AND PIEZOMETERS WERE SAMPLED NOVEMBER 30TH AND DECEMBER 1ST, 2017.

0 100 200 Feet

1 " = 100 '

1:1,200

N

PROJECT:

WISDOT ID# 0656-50-31
FORMER NORTHWOODS LAUNDRY
MINOCQUA, ONEIDA COUNTY, WISCONSIN

TITLE:

SITE OVERVIEW MAP - VAPOR INTRUSION EVALUATION

DRAWN BY:	R. SUEMNICHT	PROJ NO.:	298526
CHECKED BY:	T. O'CONNELL		
APPROVED BY:	D. HAAK		**FIGURE 2**
DATE:	MAY 2018		

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708 Heartland Trail, Suite 3000
Madison, WI 53717
Phone: 608.826.3600
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FILE NO.: 298526-018.mxd

Plot Date: 5/8/2018, 10:42:49 AM by RSUEMNICHT -- LAYOUT: ANSI B(11"x17")
Path: E:\WI_DOT\2016_242567\298526-018.mxd
Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet (Foot US)
Map Rotation: 0

TRC - GIS

LEGEND

- 1 — TRC PROPERTY ID
- SUB-SLAB SAMPLE
- APPROXIMATE BUILDING EXTENT
- APPROXIMATE FORMER NORTHWOODS LAUNDRY BUILDING EXTENT
- APPROXIMATE PARCEL BOUNDARY
- WELL ID / *PCE* / *TCE* — MARCH 2018 INDOOR AIR SAMPLING RESULTS (µg/L)

NOTES

1. BASEMAP IMAGERY FROM GOOGLE EARTH PRO & PARTNERS, JULY 2015.
2. MAP ROJECTION AND GRID COORDINATES ARE NAD83 STATE PLANE WISCONSIN-NORTH (US SURVEY FEET).
3. ALL MAP FEATURE LOCATIONS AND SIZES ARE APPROXIMATE.
4. AIR/VAPOR SAMPLING WAS COMPLETED BY TRC BETWEEN MARCH 21 & 23, 2018.
5. BUILDING CONTAINS A SLAB CONSTRUCTED ON GRADE, NO LOWER LEVEL PRESENT.
6. NO INDOOR AIR SAMPLE WAS INSTALLED BASED ON THE BUILDING CONDITION.

0 20 40 Feet

1 " = 20 '
1:240

PROJECT:
WISDOT ID# 0656-50-31
FORMER NORTHWOODS LAUNDRY
MINOCQUA, ONEIDA COUNTY, WISCONSIN

TITLE:
PROPERTY LAYOUT/RESULTS - PROPERTY IDs 1 THROUGH 3

DRAWN BY:	R. SUEMNICHT	PROJ NO.:	298526
CHECKED BY:	T. O'CONNELL		
APPROVED BY:	D. HAAK		
DATE:	MAY 2018		

FIGURE 3

TRC
708 Heartland Trail, Suite 3000
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FILE NO.: 298526-016mb.mxd

Plot Date: 5/8/2018, 10:41:36 AM by RSUEMNICHT -- LAYOUT: ANSI B(11"x17")
Path: E:\WI_DOT\2016_242567\298526-016mb.mxd
Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet (Foot US)
Map Rotation: 0

TRC - GIS

LEGEND

- 1 — TRC PROPERTY ID
- INDOOR AIR SAMPLE
- SUB-SLAB SAMPLE
- OUTDOOR SAMPLE
- APPROXIMATE LOCATION OF SUMP CROCK
- APPROXIMATE LOCATION OF STAIRS
- APPROXIMATE BUILDING EXTENT
- APPROXIMATE BUILDING EXTENT WITH NO ACCESS
- APPROXIMATE LOWER LEVEL CONCRETE FLOOR
- APPROXIMATE PARCEL BOUNDARY
- WELL ID / *PCE* / *TCE* — MARCH 2018 INDOOR AIR SAMPLING RESULTS (µg/L)

NOTES

1. BASEMAP IMAGERY FROM GOOGLE EARTH PRO & PARTNERS, JULY 2015.
2. MAP ROJECTION AND GRID COORDINATES ARE NAD83 STATE PLANE WISCONSIN-NORTH (US SURVEY FEET).
3. ALL MAP FEATURE LOCATIONS AND SIZES ARE APPROXIMATE.
4. AIR/VAPOR SAMPLING WAS COMPLETED BY TRC BETWEEN MARCH 21 & 23, 2018.
5. BUILDING CONTAINS A SLAB CONSTRUCTED ON GRADE, NO LOWER LEVEL PRESENT.

0 20 40 Feet

1 " = 20 '

1:240

N

PROJECT:

WISDOT ID# 0656-50-31
FORMER NORTHWOODS LAUNDRY
MINOCQUA, ONEIDA COUNTY, WISCONSIN

TITLE:

PROPERTY LAYOUT/RESULTS - PROPERTY IDs 4 THROUGH 8

DRAWN BY:	R. SUEMNICHT	PROJ NO.:	298526
CHECKED BY:	T. O'CONNELL		
APPROVED BY:	D. HAAK		**FIGURE 4**
DATE:	MAY 2018		

TRC
708 Heartland Trail, Suite 3000
Madison, WI 53717
Phone: 608.826.3600
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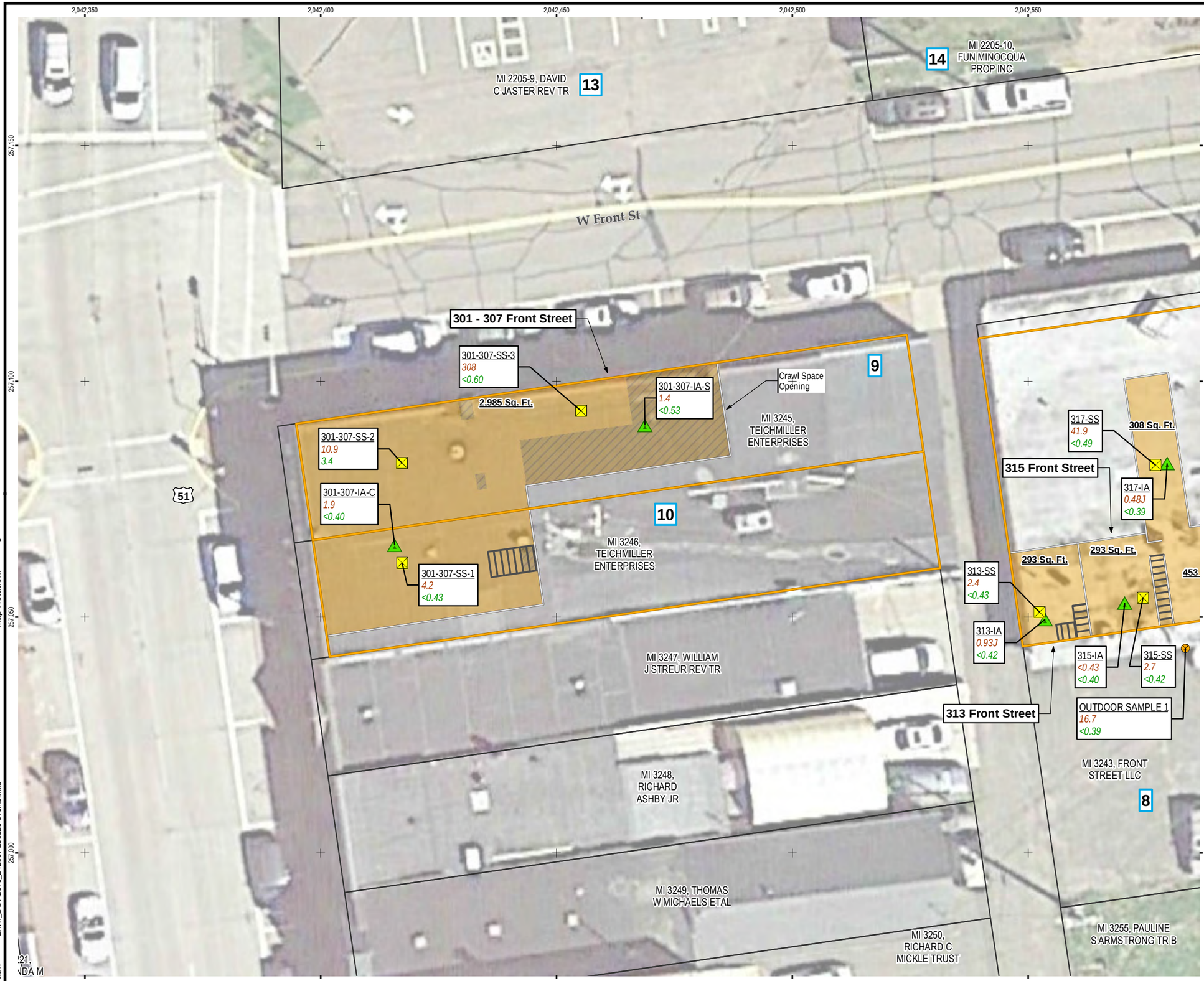
FILE NO.: 298526-016mb.mxd

Plot Date: 5/8/2018, 10:41:36 AM by RSUEMNICHT -- LAYOUT: ANSI B (11"x17")
Path: E:\WI_DOT\2016_242567\298526-016mb.mxd
Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet (Foot US)
Map Rotation: 0

TRC - GIS



LEGEND

- 1 — TRC PROPERTY ID
- INDOOR AIR SAMPLE
- SUB-SLAB SAMPLE
- OUTDOOR SAMPLE
- APPROXIMATE LOCATION OF STAIRS
- APPROXIMATE BUILDING EXTENT
- APPROXIMATE LOWER LEVEL DIRT FLOOR
- APPROXIMATE LOWER LEVEL CONCRETE FLOOR
- APPROXIMATE PARCEL BOUNDARY
- WELL ID / *PCE* / *TCE* — MARCH 2018 INDOOR AIR SAMPLING RESULTS (µg/L)

NOTES

1. BASEMAP IMAGERY FROM GOOGLE EARTH PRO & PARTNERS, JULY 2015.
2. MAP ROJECTION AND GRID COORDINATES ARE NAD83 STATE PLANE WISCONSIN-NORTH (US SURVEY FEET).
3. ALL MAP FEATURE LOCATIONS AND SIZES ARE APPROXIMATE.
4. AIR/VAPOR SAMPLING WAS COMPLETED BY TRC BETWEEN MARCH 21 & 23, 2018.

0 20 40 Feet

1 " = 20 '

1:240

N

PROJECT:

WISDOT ID# 0656-50-31
FORMER NORTHWOODS LAUNDRY
MINOCQUA, ONEIDA COUNTY, WISCONSIN

TITLE:

PROPERTY LAYOUT/RESULTS - PROPERTY IDs 9 AND 10

DRAWN BY:	R. SUEMNICHT	PROJ NO.:	298526
CHECKED BY:	T. O'CONNELL		
APPROVED BY:	D. HAAK		**FIGURE 5**
DATE:	MAY 2018		

TRC
708 Heartland Trail, Suite 3000
Madison, WI 53717
Phone: 608.826.3600
www.trcsolutions.com

FILE NO.: 298526-016mb.mxd

Plot Date: 5/8/2018, 10:41:36 AM by RSUEMNICHT -- LAYOUT: ANSI B (11"x17")
Path: E:\WI_DOT\2016_242567\298526-016mb.mxd
Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet (Foot US)
Map Rotation: 0

TRC - GIS

LEGEND

- 1 — TRC PROPERTY ID
- INDOOR AIR SAMPLE
- SUB-SLAB SAMPLE
- APPROXIMATE LOCATION OF SUMP CROCK
- APPROXIMATE LOCATION OF STAIRS
- APPROXIMATE BUILDING EXTENT
- APPROXIMATE LOWER LEVEL CONCRETE FLOOR
- APPROXIMATE PARCEL BOUNDARY
- WELL ID / *PCE* / *TCE* — MARCH 2018 INDOOR AIR SAMPLING RESULTS (µg/L)

NOTES

1. BASEMAP IMAGERY FROM GOOGLE EARTH PRO & PARTNERS, JULY 2015.
2. MAP ROJECTION AND GRID COORDINATES ARE NAD83 STATE PLANE WISCONSIN-NORTH (US SURVEY FEET).
3. ALL MAP FEATURE LOCATIONS AND SIZES ARE APPROXIMATE.
4. AIR/VAPOR SAMPLING WAS COMPLETED BY TRC BETWEEN MARCH 21 & 23, 2018.

0 20 40 Feet

1 " = 20 '
1:240

N

PROJECT:
WISDOT ID# 0656-50-31
FORMER NORTHWOODS LAUNDRY
MINOCQUA, ONEIDA COUNTY, WISCONSIN

TITLE:
PROPERTY LAYOUT/RESULTS - PROPERTY ID 11

DRAWN BY:	R. SUEMNICHT	PROJ NO.:	298526
CHECKED BY:	T. O'CONNELL		
APPROVED BY:	D. HAAK		**FIGURE 6**
DATE:	MAY 2018		

TRC
708 Heartland Trail, Suite 3000
Madison, WI 53717
Phone: 608.826.3600
www.trcsolutions.com

FILE NO.: 298526-016mb.mxd

TRC - GIS
Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet (Foot US)
Map Rotation: 0
Plot Date: 5/8/2018, 10:41:36 AM by RSUEMNICHT – LAYOUT: ANSI B(11"x17")
Path: E:\WI_DOT\2016_242567\298526-016mb.mxd

LEGEND

- 1 — TRC PROPERTY ID
- INDOOR AIR SAMPLE
- SUB-SLAB SAMPLE
- OUTDOOR SAMPLE
- APPROXIMATE BUILDING EXTENT
- APPROXIMATE PARCEL BOUNDARY
- WELL ID / *PCE* / *TCE* — MARCH 2018 INDOOR AIR SAMPLING RESULTS (µg/L)

NOTES

1. BASEMAP IMAGERY FROM GOOGLE EARTH PRO & PARTNERS, JULY 2015.
2. MAP ROJECTION AND GRID COORDINATES ARE NAD83 STATE PLANE WISCONSIN-NORTH (US SURVEY FEET).
3. ALL MAP FEATURE LOCATIONS AND SIZES ARE APPROXIMATE.
4. AIR/VAPOR SAMPLING WAS COMPLETED BY TRC BETWEEN MARCH 21 & 23, 2018.
5. BUILDING CONTAINS A SLAB CONSTRUCTED ON GRADE, NO LOWER LEVEL PRESENT.

0 20 40 Feet

1 " = 20 '

1:240

N

PROJECT:

WISDOT ID# 0656-50-31
FORMER NORTHWOODS LAUNDRY
MINOCQUA, ONEIDA COUNTY, WISCONSIN

TITLE:

PROPERTY LAYOUT/RESULTS - PROPERTY ID 13

DRAWN BY:	R. SUEMNICHT	PROJ NO.:	298526
CHECKED BY:	T. O'CONNELL		
APPROVED BY:	D. HAAK		**FIGURE 7**
DATE:	MAY 2018		

TRC
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Madison, WI 53717
Phone: 608.826.3600
www.trcsolutions.com

FILE NO.: 298526-016mb.mxd

Plot Date: 5/8/2018, 10:41:36 AM by RSUEMNICHT -- LAYOUT: ANSI B(11"x17")
Path: E:\WI_DOT\2016_242567\298526-016mb.mxd
Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet (Foot US)
Map Rotation: 0
TRC - GIS

Attachment 1

Laboratory Analytical Results

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

April 15, 2018

Andrew Stehn
TRC
708 Heartland Trail
Madison, WI 53717

RE: Project: 298526 Northwoods/Wis DOT
Pace Project No.: 10425179

Dear Andrew Stehn:
Enclosed are the analytical results for sample(s) received by the laboratory on March 28, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted 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
1(612)607-6351
Project Manager

Enclosures

cc: Dan Haak, TRC
Theodore O'Connell, TRC
Peggy Popp, TRC Solutions

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

CERTIFICATIONS

Project: 298526 Northwoods/Wis DOT
Pace Project No.: 10425179

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

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

SAMPLE SUMMARY

Project: 298526 Northwoods/Wis DOT
Pace Project No.: 10425179

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10425179001	**Outdoor - 1**	Air	03/22/18 08:10	03/28/18 11:35
10425179002	**321 - IA**	Air	03/22/18 09:56	03/28/18 11:35
10425179003	**313 - IA**	Air	03/22/18 10:33	03/28/18 11:35
10425179004	**315 - IA**	Air	03/22/18 11:19	03/28/18 11:35
10425179005	**317 - IA**	Air	03/22/18 11:24	03/28/18 11:35
10425179006	**301-307-IA-S**	Air	03/22/18 13:58	03/28/18 11:35
10425179007	**301-307-IA-C**	Air	03/22/18 14:01	03/28/18 11:35
10425179008	**329 - IA**	Air	03/22/18 15:58	03/28/18 11:35
10425179009	**515 - IA**	Air	03/22/18 16:30	03/28/18 11:35
10425179010	**Outdoor - 2**	Air	03/23/18 07:33	03/28/18 11:35
10425179011	**300 - IA**	Air	03/23/18 07:32	03/28/18 11:35
10425179012	**313 - SS**	Air	03/22/18 12:38	03/28/18 11:35
10425179013	**300 - SS**	Air	03/23/18 09:56	03/28/18 11:35
10425179014	**301-307-SS-1**	Air	03/22/18 16:07	03/28/18 11:35
10425179015	**301-307-SS-2**	Air	03/22/18 16:22	03/28/18 11:35
10425179016	**301-307-SS-3**	Air	03/22/18 16:27	03/28/18 11:35
10425179017	**315 - SS**	Air	03/22/18 14:08	03/28/18 11:35
10425179018	**317 - SS**	Air	03/22/18 13:57	03/28/18 11:35
10425179019	**329 - SS**	Air	03/22/18 18:41	03/28/18 11:35
10425179020	**405 - SS**	Air	03/23/18 12:55	03/28/18 11:35
10425179021	**321 - SS**	Air	03/22/18 11:16	03/28/18 11:35
10425179022	**515 - SS**	Air	03/22/18 19:04	03/28/18 11:35
10425179023	**527 - IA**	Air	03/23/18 09:03	03/28/18 11:35
10425179024	**527 - SS**	Air	03/23/18 13:35	03/28/18 11:35
10425179025	**DUP-01**	Air		03/28/18 11:35
10425179026	**Unused can # PACE1731**	Air		03/28/18 11:35
10425179027	**Unused can # PACE1246**	Air		03/28/18 11:35
10425179028	**Unused can # PACE2378**	Air		03/28/18 11:35
10425179029	**Unused can # PACE0533**	Air		03/28/18 11:35

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: 298526 Northwoods/Wis DOT
Pace Project No.: 10425179

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10425179001	**Outdoor - 1**	TO-15	MG2	5	PASI-M
10425179002	**321 - IA**	TO-15	MG2	5	PASI-M
10425179003	**313 - IA**	TO-15	MG2	5	PASI-M
10425179004	**315 - IA**	TO-15	MG2	5	PASI-M
10425179005	**317 - IA**	TO-15	MG2	5	PASI-M
10425179006	**301-307-IA-S**	TO-15	MG2	5	PASI-M
10425179007	**301-307-IA-C**	TO-15	MG2	5	PASI-M
10425179008	**329 - IA**	TO-15	MG2	5	PASI-M
10425179009	**515 - IA**	TO-15	MG2	5	PASI-M
10425179010	**Outdoor - 2**	TO-15	MG2	5	PASI-M
10425179011	**300 - IA**	TO-15	MG2	5	PASI-M
10425179012	**313 - SS**	TO-15	MG2	5	PASI-M
10425179013	**300 - SS**	TO-15	DR1	5	PASI-M
10425179014	**301-307-SS-1**	TO-15	MG2	5	PASI-M
10425179015	**301-307-SS-2**	TO-15	MG2	5	PASI-M
10425179016	**301-307-SS-3**	TO-15	MG2	5	PASI-M
10425179017	**315 - SS**	TO-15	MG2	5	PASI-M
10425179018	**317 - SS**	TO-15	MG2	5	PASI-M
10425179019	**329 - SS**	TO-15	MG2	5	PASI-M
10425179020	**405 - SS**	TO-15	DR1	5	PASI-M
10425179021	**321 - SS**	TO-15	MG2	5	PASI-M
10425179022	**515 - SS**	TO-15	MG2	5	PASI-M
10425179023	**527 - IA**	TO-15	DR1	5	PASI-M
10425179024	**527 - SS**	TO-15	DR1	5	PASI-M
10425179025	**DUP-01**	TO-15	DR1	5	PASI-M

Pace Analytical Services, LLC
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Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 298526 Northwoods/Wis DOT
Pace Project No.: 10425179

Sample: Outdoor - 1 **Lab ID: 10425179001** Collected: 03/22/18 08:10 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.49**	ug/m3	1.2	0.49	1.44		04/13/18 16:15	156-59-2	
trans-1,2-Dichloroethene	**<0.42**	ug/m3	1.2	0.42	1.44		04/13/18 16:15	156-60-5	
Tetrachloroethene	**16.7**	ug/m3	0.99	0.41	1.44		04/13/18 16:15	127-18-4	
Trichloroethene	**<0.39**	ug/m3	0.79	0.39	1.44		04/13/18 16:15	79-01-6	
Vinyl chloride	**<0.18**	ug/m3	0.37	0.18	1.44		04/13/18 16:15	75-01-4	

Sample: 321 - IA **Lab ID: 10425179002** Collected: 03/22/18 09:56 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.51**	ug/m3	1.2	0.51	1.49		04/13/18 23:10	156-59-2	
trans-1,2-Dichloroethene	**<0.44**	ug/m3	1.2	0.44	1.49		04/13/18 23:10	156-60-5	
Tetrachloroethene	**<0.43**	ug/m3	1.0	0.43	1.49		04/13/18 23:10	127-18-4	
Trichloroethene	**<0.40**	ug/m3	0.81	0.40	1.49		04/13/18 23:10	79-01-6	
Vinyl chloride	**<0.19**	ug/m3	0.39	0.19	1.49		04/13/18 23:10	75-01-4	

Sample: 313 - IA **Lab ID: 10425179003** Collected: 03/22/18 10:33 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.53**	ug/m3	1.2	0.53	1.55		04/14/18 01:27	156-59-2	
trans-1,2-Dichloroethene	**<0.46**	ug/m3	1.2	0.46	1.55		04/14/18 01:27	156-60-5	
Tetrachloroethene	**0.93J**	ug/m3	1.1	0.44	1.55		04/14/18 01:27	127-18-4	
Trichloroethene	**<0.42**	ug/m3	0.85	0.42	1.55		04/14/18 01:27	79-01-6	
Vinyl chloride	**<0.20**	ug/m3	0.40	0.20	1.55		04/14/18 01:27	75-01-4	

Sample: 315 - IA **Lab ID: 10425179004** Collected: 03/22/18 11:19 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.51**	ug/m3	1.2	0.51	1.49		04/13/18 22:36	156-59-2	
trans-1,2-Dichloroethene	**<0.44**	ug/m3	1.2	0.44	1.49		04/13/18 22:36	156-60-5	
Tetrachloroethene	**<0.43**	ug/m3	1.0	0.43	1.49		04/13/18 22:36	127-18-4	
Trichloroethene	**<0.40**	ug/m3	0.81	0.40	1.49		04/13/18 22:36	79-01-6	
Vinyl chloride	**<0.19**	ug/m3	0.39	0.19	1.49		04/13/18 22:36	75-01-4	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 298526 Northwoods/Wis DOT
Pace Project No.: 10425179

Sample: 317 - IA **Lab ID: 10425179005** Collected: 03/22/18 11:24 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.49**	ug/m3	1.2	0.49	1.44		04/13/18 18:01	156-59-2	
trans-1,2-Dichloroethene	**<0.42**	ug/m3	1.2	0.42	1.44		04/13/18 18:01	156-60-5	
Tetrachloroethene	**0.48J**	ug/m3	0.99	0.41	1.44		04/13/18 18:01	127-18-4	
Trichloroethene	**<0.39**	ug/m3	0.79	0.39	1.44		04/13/18 18:01	79-01-6	
Vinyl chloride	**<0.18**	ug/m3	0.37	0.18	1.44		04/13/18 18:01	75-01-4	

Sample: 301-307-IA-S **Lab ID: 10425179006** Collected: 03/22/18 13:58 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.67**	ug/m3	1.6	0.67	1.96		04/14/18 03:10	156-59-2	
trans-1,2-Dichloroethene	**<0.58**	ug/m3	1.6	0.58	1.96		04/14/18 03:10	156-60-5	
Tetrachloroethene	**1.4**	ug/m3	1.4	0.56	1.96		04/14/18 03:10	127-18-4	
Trichloroethene	**<0.53**	ug/m3	1.1	0.53	1.96		04/14/18 03:10	79-01-6	
Vinyl chloride	**<0.25**	ug/m3	0.51	0.25	1.96		04/14/18 03:10	75-01-4	

Sample: 301-307-IA-C **Lab ID: 10425179007** Collected: 03/22/18 14:01 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.51**	ug/m3	1.2	0.51	1.49		04/14/18 00:53	156-59-2	
trans-1,2-Dichloroethene	**<0.44**	ug/m3	1.2	0.44	1.49		04/14/18 00:53	156-60-5	
Tetrachloroethene	**1.9**	ug/m3	1.0	0.43	1.49		04/14/18 00:53	127-18-4	
Trichloroethene	**<0.40**	ug/m3	0.81	0.40	1.49		04/14/18 00:53	79-01-6	
Vinyl chloride	**<0.19**	ug/m3	0.39	0.19	1.49		04/14/18 00:53	75-01-4	

Sample: 329 - IA **Lab ID: 10425179008** Collected: 03/22/18 15:58 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.47**	ug/m3	1.1	0.47	1.39		04/13/18 18:36	156-59-2	
trans-1,2-Dichloroethene	**<0.41**	ug/m3	1.1	0.41	1.39		04/13/18 18:36	156-60-5	
Tetrachloroethene	**0.47J**	ug/m3	0.96	0.40	1.39		04/13/18 18:36	127-18-4	
Trichloroethene	**<0.37**	ug/m3	0.76	0.37	1.39		04/13/18 18:36	79-01-6	
Vinyl chloride	**<0.18**	ug/m3	0.36	0.18	1.39		04/13/18 18:36	75-01-4	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 298526 Northwoods/Wis DOT
Pace Project No.: 10425179

Sample: 515 - IA **Lab ID: 10425179009** Collected: 03/22/18 16:30 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.48**	ug/m3	1.1	0.48	1.41		04/14/18 00:19	156-59-2	
trans-1,2-Dichloroethene	**<0.42**	ug/m3	1.1	0.42	1.41		04/14/18 00:19	156-60-5	
Tetrachloroethene	**<0.40**	ug/m3	0.97	0.40	1.41		04/14/18 00:19	127-18-4	
Trichloroethene	**<0.38**	ug/m3	0.77	0.38	1.41		04/14/18 00:19	79-01-6	
Vinyl chloride	**<0.18**	ug/m3	0.37	0.18	1.41		04/14/18 00:19	75-01-4	

Sample: Outdoor - 2 **Lab ID: 10425179010** Collected: 03/23/18 07:33 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.51**	ug/m3	1.2	0.51	1.49		04/13/18 21:27	156-59-2	
trans-1,2-Dichloroethene	**<0.44**	ug/m3	1.2	0.44	1.49		04/13/18 21:27	156-60-5	
Tetrachloroethene	**<0.43**	ug/m3	1.0	0.43	1.49		04/13/18 21:27	127-18-4	
Trichloroethene	**<0.40**	ug/m3	0.81	0.40	1.49		04/13/18 21:27	79-01-6	
Vinyl chloride	**<0.19**	ug/m3	0.39	0.19	1.49		04/13/18 21:27	75-01-4	

Sample: 300 - IA **Lab ID: 10425179011** Collected: 03/23/18 07:32 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.50**	ug/m3	1.2	0.50	1.46		04/13/18 17:27	156-59-2	
trans-1,2-Dichloroethene	**<0.43**	ug/m3	1.2	0.43	1.46		04/13/18 17:27	156-60-5	
Tetrachloroethene	**<0.42**	ug/m3	1.0	0.42	1.46		04/13/18 17:27	127-18-4	
Trichloroethene	**<0.39**	ug/m3	0.80	0.39	1.46		04/13/18 17:27	79-01-6	
Vinyl chloride	**<0.18**	ug/m3	0.38	0.18	1.46		04/13/18 17:27	75-01-4	

Sample: 313 - SS **Lab ID: 10425179012** Collected: 03/22/18 12:38 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.55**	ug/m3	1.3	0.55	1.61		04/13/18 23:45	156-59-2	
trans-1,2-Dichloroethene	**<0.47**	ug/m3	1.3	0.47	1.61		04/13/18 23:45	156-60-5	
Tetrachloroethene	**2.4**	ug/m3	1.1	0.46	1.61		04/13/18 23:45	127-18-4	
Trichloroethene	**<0.43**	ug/m3	0.88	0.43	1.61		04/13/18 23:45	79-01-6	
Vinyl chloride	**<0.20**	ug/m3	0.42	0.20	1.61		04/13/18 23:45	75-01-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 298526 Northwoods/Wis DOT
Pace Project No.: 10425179

Sample: 300 - SS **Lab ID: 10425179013** Collected: 03/23/18 09:56 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.53**	ug/m3	1.2	0.53	1.55		04/12/18 14:43	156-59-2	
trans-1,2-Dichloroethene	**<0.46**	ug/m3	1.2	0.46	1.55		04/12/18 14:43	156-60-5	
Tetrachloroethene	**<0.44**	ug/m3	1.1	0.44	1.55		04/12/18 14:43	127-18-4	
Trichloroethene	**<0.42**	ug/m3	0.85	0.42	1.55		04/12/18 14:43	79-01-6	
Vinyl chloride	**<0.20**	ug/m3	0.40	0.20	1.55		04/12/18 14:43	75-01-4	

Sample: 301-307-SS-1 **Lab ID: 10425179014** Collected: 03/22/18 16:07 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.55**	ug/m3	1.3	0.55	1.61		04/13/18 19:10	156-59-2	
trans-1,2-Dichloroethene	**<0.47**	ug/m3	1.3	0.47	1.61		04/13/18 19:10	156-60-5	
Tetrachloroethene	**4.2**	ug/m3	1.1	0.46	1.61		04/13/18 19:10	127-18-4	
Trichloroethene	**<0.43**	ug/m3	0.88	0.43	1.61		04/13/18 19:10	79-01-6	
Vinyl chloride	**<0.20**	ug/m3	0.42	0.20	1.61		04/13/18 19:10	75-01-4	

Sample: 301-307-SS-2 **Lab ID: 10425179015** Collected: 03/22/18 16:22 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**2.1**	ug/m3	1.7	0.72	2.12		04/14/18 02:36	156-59-2	IS
trans-1,2-Dichloroethene	**1.8**	ug/m3	1.7	0.63	2.12		04/14/18 02:36	156-60-5	IS
Tetrachloroethene	**10.9**	ug/m3	1.5	0.61	2.12		04/14/18 02:36	127-18-4	
Trichloroethene	**3.4**	ug/m3	1.2	0.57	2.12		04/14/18 02:36	79-01-6	IS
Vinyl chloride	**1.8**	ug/m3	0.55	0.27	2.12		04/14/18 02:36	75-01-4	IS

Sample: 301-307-SS-3 **Lab ID: 10425179016** Collected: 03/22/18 16:27 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.77**	ug/m3	1.8	0.77	2.25		04/14/18 02:01	156-59-2	
trans-1,2-Dichloroethene	**<0.66**	ug/m3	1.8	0.66	2.25		04/14/18 02:01	156-60-5	
Tetrachloroethene	**308**	ug/m3	1.6	0.65	2.25		04/14/18 02:01	127-18-4	
Trichloroethene	**<0.60**	ug/m3	1.2	0.60	2.25		04/14/18 02:01	79-01-6	
Vinyl chloride	**<0.28**	ug/m3	0.58	0.28	2.25		04/14/18 02:01	75-01-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 298526 Northwoods/Wis DOT
Pace Project No.: 10425179

Sample: 315 - SS **Lab ID: 10425179017** Collected: 03/22/18 14:08 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.54**	ug/m3	1.3	0.54	1.58		04/13/18 20:52	156-59-2	
trans-1,2-Dichloroethene	**<0.47**	ug/m3	1.3	0.47	1.58		04/13/18 20:52	156-60-5	
Tetrachloroethene	**2.7**	ug/m3	1.1	0.45	1.58		04/13/18 20:52	127-18-4	
Trichloroethene	**<0.42**	ug/m3	0.86	0.42	1.58		04/13/18 20:52	79-01-6	
Vinyl chloride	**<0.20**	ug/m3	0.41	0.20	1.58		04/13/18 20:52	75-01-4	

Sample: 317 - SS **Lab ID: 10425179018** Collected: 03/22/18 13:57 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.62**	ug/m3	1.5	0.62	1.83		04/13/18 15:05	156-59-2	
trans-1,2-Dichloroethene	**<0.54**	ug/m3	1.5	0.54	1.83		04/13/18 15:05	156-60-5	
Tetrachloroethene	**41.9**	ug/m3	1.3	0.53	1.83		04/13/18 15:05	127-18-4	
Trichloroethene	**<0.49**	ug/m3	1.0	0.49	1.83		04/13/18 15:05	79-01-6	
Vinyl chloride	**<0.23**	ug/m3	0.48	0.23	1.83		04/13/18 15:05	75-01-4	

Sample: 329 - SS **Lab ID: 10425179019** Collected: 03/22/18 18:41 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.53**	ug/m3	1.2	0.53	1.55		04/13/18 22:01	156-59-2	
trans-1,2-Dichloroethene	**<0.46**	ug/m3	1.2	0.46	1.55		04/13/18 22:01	156-60-5	
Tetrachloroethene	**11.2**	ug/m3	1.1	0.44	1.55		04/13/18 22:01	127-18-4	
Trichloroethene	**<0.42**	ug/m3	0.85	0.42	1.55		04/13/18 22:01	79-01-6	
Vinyl chloride	**<0.20**	ug/m3	0.40	0.20	1.55		04/13/18 22:01	75-01-4	

Sample: 405 - SS **Lab ID: 10425179020** Collected: 03/23/18 12:55 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.54**	ug/m3	1.3	0.54	1.58		04/12/18 15:23	156-59-2	
trans-1,2-Dichloroethene	**<0.47**	ug/m3	1.3	0.47	1.58		04/12/18 15:23	156-60-5	
Tetrachloroethene	**15.5**	ug/m3	1.1	0.45	1.58		04/12/18 15:23	127-18-4	
Trichloroethene	**<0.42**	ug/m3	0.86	0.42	1.58		04/12/18 15:23	79-01-6	
Vinyl chloride	**<0.20**	ug/m3	0.41	0.20	1.58		04/12/18 15:23	75-01-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 298526 Northwoods/Wis DOT
Pace Project No.: 10425179

Sample: 321 - SS **Lab ID: 10425179021** Collected: 03/22/18 11:16 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.55**	ug/m3	1.3	0.55	1.61		04/13/18 20:18	156-59-2	
trans-1,2-Dichloroethene	**<0.47**	ug/m3	1.3	0.47	1.61		04/13/18 20:18	156-60-5	
Tetrachloroethene	**8.5**	ug/m3	1.1	0.46	1.61		04/13/18 20:18	127-18-4	
Trichloroethene	**<0.43**	ug/m3	0.88	0.43	1.61		04/13/18 20:18	79-01-6	
Vinyl chloride	**<0.20**	ug/m3	0.42	0.20	1.61		04/13/18 20:18	75-01-4	

Sample: 515 - SS **Lab ID: 10425179022** Collected: 03/22/18 19:04 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.57**	ug/m3	1.4	0.57	1.68		04/13/18 19:44	156-59-2	
trans-1,2-Dichloroethene	**<0.50**	ug/m3	1.4	0.50	1.68		04/13/18 19:44	156-60-5	
Tetrachloroethene	**<0.48**	ug/m3	1.2	0.48	1.68		04/13/18 19:44	127-18-4	
Trichloroethene	**<0.45**	ug/m3	0.92	0.45	1.68		04/13/18 19:44	79-01-6	
Vinyl chloride	**<0.21**	ug/m3	0.44	0.21	1.68		04/13/18 19:44	75-01-4	

Sample: 527 - IA **Lab ID: 10425179023** Collected: 03/23/18 09:03 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.53**	ug/m3	1.2	0.53	1.55		04/12/18 16:43	156-59-2	
trans-1,2-Dichloroethene	**<0.46**	ug/m3	1.2	0.46	1.55		04/12/18 16:43	156-60-5	
Tetrachloroethene	**0.55J**	ug/m3	1.1	0.44	1.55		04/12/18 16:43	127-18-4	
Trichloroethene	**<0.42**	ug/m3	0.85	0.42	1.55		04/12/18 16:43	79-01-6	
Vinyl chloride	**<0.20**	ug/m3	0.40	0.20	1.55		04/12/18 16:43	75-01-4	

Sample: 527 - SS **Lab ID: 10425179024** Collected: 03/23/18 13:35 Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.55**	ug/m3	1.3	0.55	1.61		04/12/18 17:23	156-59-2	
trans-1,2-Dichloroethene	**<0.47**	ug/m3	1.3	0.47	1.61		04/12/18 17:23	156-60-5	
Tetrachloroethene	**9.6**	ug/m3	1.1	0.46	1.61		04/12/18 17:23	127-18-4	
Trichloroethene	**<0.43**	ug/m3	0.88	0.43	1.61		04/12/18 17:23	79-01-6	
Vinyl chloride	**<0.20**	ug/m3	0.42	0.20	1.61		04/12/18 17:23	75-01-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 298526 Northwoods/Wis DOT
Pace Project No.: 10425179

Sample: DUP-01 **Lab ID: 10425179025** Collected: Received: 03/28/18 11:35 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
cis-1,2-Dichloroethene	**<0.53**	ug/m3	1.2	0.53	1.55		04/12/18 16:03	156-59-2	
trans-1,2-Dichloroethene	**<0.46**	ug/m3	1.2	0.46	1.55		04/12/18 16:03	156-60-5	
Tetrachloroethene	**<0.44**	ug/m3	1.1	0.44	1.55		04/12/18 16:03	127-18-4	
Trichloroethene	**<0.42**	ug/m3	0.85	0.42	1.55		04/12/18 16:03	79-01-6	
Vinyl chloride	**<0.20**	ug/m3	0.40	0.20	1.55		04/12/18 16:03	75-01-4	

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QUALITY CONTROL DATA

Project: 298526 Northwoods/Wis DOT
Pace Project No.: 10425179

QC Batch: 532049 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10425179013, 10425179020, 10425179023, 10425179024, 10425179025

METHOD BLANK: 2889151 Matrix: Air
Associated Lab Samples: 10425179013, 10425179020, 10425179023, 10425179024, 10425179025

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,2-Dichloroethene	ug/m3	<0.34	0.81	04/12/18 11:27	
Tetrachloroethene	ug/m3	<0.29	0.69	04/12/18 11:27	
trans-1,2-Dichloroethene	ug/m3	<0.30	0.81	04/12/18 11:27	
Trichloroethene	ug/m3	<0.27	0.55	04/12/18 11:27	
Vinyl chloride	ug/m3	<0.13	0.26	04/12/18 11:27	

LABORATORY CONTROL SAMPLE: 2889152

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
cis-1,2-Dichloroethene	ug/m3	40.3	40.8	101	70-136	
Tetrachloroethene	ug/m3	68.9	73.7	107	70-133	
trans-1,2-Dichloroethene	ug/m3	40.3	41.4	103	70-132	
Trichloroethene	ug/m3	54.6	57.5	105	70-135	
Vinyl chloride	ug/m3	26	27.0	104	70-141	

SAMPLE DUPLICATE: 2889574

Parameter	Units	10425034001 Result	Dup Result	RPD	Max RPD	Qualifiers
cis-1,2-Dichloroethene	ug/m3	ND	<0.48		25	
Tetrachloroethene	ug/m3	ND	<0.40		25	
trans-1,2-Dichloroethene	ug/m3	ND	<0.42		25	
Trichloroethene	ug/m3	ND	<0.38		25	
Vinyl chloride	ug/m3	ND	<0.18		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 298526 Northwoods/Wis DOT
Pace Project No.: 10425179

QC Batch: 532051 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10425179001, 10425179002, 10425179003, 10425179004, 10425179005, 10425179006, 10425179007, 10425179008, 10425179009, 10425179010, 10425179011, 10425179012, 10425179014, 10425179015, 10425179016, 10425179017, 10425179018, 10425179019, 10425179021, 10425179022

METHOD BLANK: 2889155 Matrix: Air
Associated Lab Samples: 10425179001, 10425179002, 10425179003, 10425179004, 10425179005, 10425179006, 10425179007, 10425179008, 10425179009, 10425179010, 10425179011, 10425179012, 10425179014, 10425179015, 10425179016, 10425179017, 10425179018, 10425179019, 10425179021, 10425179022

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,2-Dichloroethene	ug/m3	<0.34	0.81	04/13/18 14:22	
Tetrachloroethene	ug/m3	<0.29	0.69	04/13/18 14:22	
trans-1,2-Dichloroethene	ug/m3	<0.30	0.81	04/13/18 14:22	
Trichloroethene	ug/m3	<0.27	0.55	04/13/18 14:22	
Vinyl chloride	ug/m3	<0.13	0.26	04/13/18 14:22	

LABORATORY CONTROL SAMPLE: 2889156

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
cis-1,2-Dichloroethene	ug/m3	42.7	39.8	93	70-136	
Tetrachloroethene	ug/m3	73.8	63.8	86	70-133	
trans-1,2-Dichloroethene	ug/m3	36.3	35.1	97	70-132	
Trichloroethene	ug/m3	58.4	58.9	101	70-135	
Vinyl chloride	ug/m3	25.7	23.8	93	70-141	

SAMPLE DUPLICATE: 2891441

Parameter	Units	10425179018 Result	Dup Result	RPD	Max RPD	Qualifiers
cis-1,2-Dichloroethene	ug/m3	<0.62	<0.62		25	
Tetrachloroethene	ug/m3	41.9	42.7	2	25	
trans-1,2-Dichloroethene	ug/m3	<0.54	<0.54		25	
Trichloroethene	ug/m3	<0.49	<0.49		25	
Vinyl chloride	ug/m3	<0.23	<0.23		25	

SAMPLE DUPLICATE: 2891442

Parameter	Units	10425179001 Result	Dup Result	RPD	Max RPD	Qualifiers
cis-1,2-Dichloroethene	ug/m3	<0.49	<0.49		25	
Tetrachloroethene	ug/m3	16.7	17.0	2	25	
trans-1,2-Dichloroethene	ug/m3	<0.42	<0.42		25	
Trichloroethene	ug/m3	<0.39	<0.39		25	
Vinyl chloride	ug/m3	<0.18	<0.18		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 298526 Northwoods/Wis DOT
Pace Project No.: 10425179

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

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 at or above the adjusted LOD.

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 TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

IS	The internal standard response is below criteria. Results may be biased high.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 298526 Northwoods/Wis DOT
Pace Project No.: 10425179

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10425179001	**Outdoor - 1**	TO-15	532051		
10425179002	**321 - IA**	TO-15	532051		
10425179003	**313 - IA**	TO-15	532051		
10425179004	**315 - IA**	TO-15	532051		
10425179005	**317 - IA**	TO-15	532051		
10425179006	**301-307-IA-S**	TO-15	532051		
10425179007	**301-307-IA-C**	TO-15	532051		
10425179008	**329 - IA**	TO-15	532051		
10425179009	**515 - IA**	TO-15	532051		
10425179010	**Outdoor - 2**	TO-15	532051		
10425179011	**300 - IA**	TO-15	532051		
10425179012	**313 - SS**	TO-15	532051		
10425179013	**300 - SS**	TO-15	532049		
10425179014	**301-307-SS-1**	TO-15	532051		
10425179015	**301-307-SS-2**	TO-15	532051		
10425179016	**301-307-SS-3**	TO-15	532051		
10425179017	**315 - SS**	TO-15	532051		
10425179018	**317 - SS**	TO-15	532051		
10425179019	**329 - SS**	TO-15	532051		
10425179020	**405 - SS**	TO-15	532049		
10425179021	**321 - SS**	TO-15	532051		
10425179022	**515 - SS**	TO-15	532051		
10425179023	**527 - IA**	TO-15	532049		
10425179024	**527 - SS**	TO-15	532049		
10425179025	**DUP-01**	TO-15	532049		

10425179

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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.

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Page: 1 of 3

Section A Required Client Information:

Company: TRC
Address: 708 HEARTLAND TRL
Suite 3000, Madison WI 53717
Email To: astehn@trcsolutions.com
Phone: 608-826-3665 Fax:
Requested Due Date/TAT: STANDARD

Section B Required Project Information:

Report To: ANDREW STEHN
Copy To: Theodore O'connell
toconnell@trcsolutions.com
Purchase Order No.: 120030
Project Name: Northwood3/WisDOT
Project Number: 298526

Section C Invoice Information:

Attention: Theodore O'connell
Company Name: TRC
Address: Same as Section A
Pace Quote Reference:
Pace Project Manager/Sales Rep.
Pace Profile #: 38609

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

Location of Sampling by State: WI

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: 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 DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	Canister Pressure (Initial Field - in Hg)	Canister Pressure (Final Field - in Hg)	Summa Can Number	Flow Control Number	Method: PM10	3C - Fixed Gas (%)	TO-3 BTEX	TO-3M (Methane)	TO-14	TO-15 Full List VOCs	TO-15 Short List BTEX	TO-15 Short List Chlorinated	TO-15 Short List (other)	See Comments	Pace Lab ID
1	Outdoor - 1	6LC		3/21/18	0930	3/22/18	0810	-25	-1.5	3427	FC0350							X				001
2	321 - IA			3/21/18	0956	3/22/18	0956	-30	-4	2340	FC0533											002
3	313 - IA				1033	3/22/18	1033	-30	-5	0702	FC1373											003
4	315 - IA				1119	~~3/22/18~~ 3/23/18	1119	-30	-5	1088	FC1061											004
5	317 - IA				1124	3/22/18	1124	-27.5	-3	2089	FC0452											005
6	301 - 309 - IA - S				1358	3/22/18	1358	-28	-4	0630	FC0315											006
7	301 - 307 - IA - C				1401	3/22/18	1401	-29	-3	2709	FC1454											007
8	~~329~~ 329 - IA				1601	3/22/18	1558	-27	-2	2145	FC1421											008
9	515 - IA			↓	1631	3/22/18	1630	-30	-6	2310	FC1502											009
10	Outdoor - 2			3/22/18	0733	3/23/18	0733	-28	-3	0718	FC0277											010
11	300 - IA				0749	3/23/18	0732	-25.5	-2	2154	FC0767											011
12	~~300 - SS~~ 313 - SS			↓	1203	3/22/18	1238	-30	-7	0680	FC2005							↓				012

Comments:

Samples should be analyzed for PCE, TCE, Cis-1,2 DCE, VC, ~~trans-~~ trans-1,2 DCE ~~1,2 DEC~~

ORIGINAL

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature] / TRC	3/27/18	1200	[signature]	3-28-18	1135

SAMPLE CONDITIONS

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

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: ANDREW STEHN / Tom W. Perkins

SIGNATURE of SAMPLER: [signature] / [signature] DATE Signed (MM / DD / YY): 3/27/18

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

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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.

31924

Section A Required Client Information:

Company: TRC
Address: 708 HEARTLAND TRL
SUITE 3000, MADISON, WI 53717
Email To: aStehn@TRCSolutions.com
Phone: 608-826-3465 Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: ANDREW STEHN
Copy To: THEODORE OCONNELL
toconnell@trcsolutions.com
Purchase Order No.: 120030
Project Name: Northwoods / WisDOT
Project Number: 298526

Section C Invoice Information:

Attention: THEODORE O'CONNELL
Company Name: TRC
Address: SAME AS SECTION A
Pace Quote Reference:
Pace Project Manager/Sales Rep.
Pace Profile #: 38608

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

Location of Sampling by State: WI

Reporting Units: µg/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 #	Section D Required Client Information (AIR SAMPLE ID)	MEDIA CODE	PID Reading (Client only)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	Canister Pressure (Initial Field - in Hg)	Canister Pressure (Final Field - in Hg)	Summa Can Number	Flow Control Number	Method: PM10	3C - Fixed Gas (%)	TO-3 BTEX	TO-3M (Methane)	TO-14	TO-15 Full List VOCs	TO-15 Short List BTEX	TO-15 Short List Chlorinated	TO-15 Short List (other)	Pace Lab ID
1	300-SS	6LC		3/23/18	0844	3/23/18	0956	-30 ~~-28~~	-6	0226	FC09123							X			013
2	301-307-SS-1	AMB		3/23/18	1531	3/23/18	1607	-28	-6	0542	FC08966										014
3	301-307-SS-2	AMB		3/23/18	1545	3/23/18	1622	-29	-5.5	0568	FC06422										015
4	301-307-SS-3	AMB		3/23/18	1554	3/23/18	1627	-27	-6	1545	FC28388										016
5	315-SS			3/22/18	1331	3/22/18	1408	-30	-6	0109	FC09669										017
6	317-SS			3/22/18	1327	3/22/18	1357	-28	-8	0656	FC28344										018
7	329-SS			3/22/18	1805	3/22/18	1841	-28.5	-6	1516	FC28477										019
8	TMP ~~329-SS~~ 405-SS			3/23/18	1219	3/23/18	1255	-29	-6	1185	FC09022										020
9	TMP ~~405-SS~~ 321-SS			3/22/18	1040	3/22/18	1116	-29	-6	0430	FC16063										021
10	515-SS			3/22/18	1832	3/22/18	1904	-28	-6	0164	FC08404										022
11	527-1A			3/22/18	0903	3/23/18	0903	-30	-4	2842	FC01644										023
12	527-SS			3/23/18	1300	3/23/18	1335	-28	-5	3396	FC09113										024

Method: SEE COMMENTS

Comments :

SAMPLES SHOULD BE ANALYZED FOR PCE, TCE, CIS-1,2 DCE, VC, TRANS-1,2 DCE

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature] / TRC	3/27/18	1200	[signature]	3-28-18	1135

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
		Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: ANDREW STEHN / Tom M. Perkins

SIGNATURE of SAMPLER: [signature] DATE Signed (MM / DD / YY): 3/27/18

ORIGINAL

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

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AIR: CHAIN-OF-CUSTOD

The Chain-of-Custody is a LEGAL DOCUMENT. All re

WO# : 10425179

10425179

31923

Page: 3 of 3

Section A Required Client Information:

Company: TRC
Address: 708 HEARTLAND TRL
SUITE 3000, MADISON, WI 53717
Email To: astehn@trcsolutions.com
Phone: 608-826-3665 Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: ANDREW STEHN
Copy To: THEODORE O'CONNELL
toconnell@trcsolutions.com
Purchase Order No.: 120030
Project Name: Northeast Wisconsin
Project Number: 298526

Section C Invoice Information:

Attention: THEODORE O'CONNELL
Company Name: TRC
Address: SAME AS SECTION A
Pace Quote Reference:
Pace Project Manager/Sales Rep.
Pace Profile #: 38608

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

Location of Sampling by State: WI

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 DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE - END/GRAB DATE	COLLECTED COMPOSITE - END/GRAB TIME	Canister Pressure (Initial Field - in Hg)	Canister Pressure (Final Field - in Hg)	Summa Can Number	Flow Control Number	Method: PM10	3C - Fixed Gas (%)	TO-3 BTEX	TO-3M (Methane)	TO-14	TO-15 Full List VOCs	TO-15 Short List BTEX	TO-15 Short List Chlorinated	TO-15 Short List (other)	Pace Lab ID
1	DUP-01	6LC		-	-	-	-	-30	-6	1184								X			025
2																					
3	DO NOT ANALYZE									1731	FC1579										026
4	DO NOT ANALYZE									1246	FC0744										027
5	DO NOT ANALYZE									2378	FC0759										028
6	DO NOT ANALYZE									6533	FC0332										029
7																					
8																					
9																					
10																					
11																					
12																					

Comments :

DUP-01 SAMPLE SHOULD BE ANALYZED FOR PCE, TCE, CIS-1,2 DCE, VC, TRAS-1,2 DCE.

ITEM #3: DO NOT ANALYZE. WATER ENTERED SAMPLE TRAIN DURING COLLECTION.

ITEM #4: DO NOT ~~ANALYZE SAMPLE~~, INITIAL VAC @ -22 inHg. COULD NOT USE.

ITEM #5: DO NOT ANALYZE. MISSING PIN. COULD NOT USE.

ITEM #6: DO NOT ANALYZE. BAD SEAL. COULD NOT USE.

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature] /TRC	3/27/18	1200	[signature] /PACE	3-28-18	1135

SAMPLE CONDITIONS

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

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: ANDREW STEHN /Tom w Perkins

SIGNATURE of SAMPLER: [signature] /Z-A

DATE Signed (MM / DD / YY): 3/27/18

ORIGINAL

Page 1 of 2

Pace Analytical	Document Name: Air Sample Condition Upon Receipt	Document Revised: 28Dec2017 Page 1 of 1
	Document No.: F-MN-A-106-rev.14	Issuing Authority: Pace Minnesota Quality Office

Air Sample Condition Upon Receipt

Client Name: TRC

Project #: WO#: 10425179

PM: MEM1 Due Date: 04/11/18

CLIENT: TRC-WI

Courier: ☑ Fed Ex ☐ UPS ☐ Speedee ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 7476 3006 1373/1362/1340/1318/1351/1370/1329/1384

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Tin Can ☐ Other: **Temp Blank rec:** ☐ Yes ☑ No

Temp. (TO17 and TO13 samples only) (°C): X **Corrected Temp (°C):** X **Thermom. Used:** ☐ 151401163 ☐ G87A9155100842

Temp should be above freezing to 6°C **Correction Factor:** X **Date & Initials of Person Examining Contents:** 3-28-18 MA

Type of ice Received ☐ Blue ☐ Wet ☑ None

				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 and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ 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) Airbag Filter TDT Passive				11. Individually Certified Cans Y (N) (list which samples)
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	12.

Samples Received: 1 T-Fitting

Pressure Gauge # 10AIR26

Canisters					Canisters				
Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure	Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure
1			-2	+5	10			-3	+5
2			-3	"	11			-2.5	"
3			-4	"	12			-5	"
4			-3	"	13			-4	"
5			-2	"	14			-5	"
6			-2.5	"	15			-4.5	"
7			-3	"	16			-6	"
8			-1	"	17			-4.5	"
9			-1.5	"	18			-8	"

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Megan McCabe **Date:** 3/29/18

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)

Pace Analytical	Document Name: **Air Sample Condition Upon Receipt**	Document Revised: 28Dec2017 Page 1 of 1
	Document No.: **F-MN-A-106-rev.14**	Issuing Authority: Pace Minnesota Quality Office

Air Sample Condition Upon Receipt

Client Name: _____ **Project #:** 10425779

Courier: ☐Fed Ex ☐UPS ☐Speedee ☐Client ☐Commercial ☐Pace ☐Other:_____

Tracking Number: _____

Custody Seal on Cooler/Box Present? ☐Yes ☐No **Seals Intact?** ☐Yes ☐No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐Bubble Wrap ☐Bubble Bags ☐Foam ☐None ☐Tin Can ☐Other:_____ **Temp Blank rec:** ☐Yes ☐No

Temp. (TO17 and TO13 samples only) (°C): _____ **Corrected Temp (°C):** _____ **Thermom. Used:** ☐151401163 ☐G87A9155100842

Temp should be above freezing to 6°C **Correction Factor:** _____ **Date & Initials of Person Examining Contents:** _____

Type of ice Received ☐Blue ☐Wet ☐None

				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 and/or Signature on COC?	☐Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time?	☐Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72 hr)?	☐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 Airbag Filter TDT Passive				11. Individually Certified Cans Y N (list which samples)
Sample Labels Match COC?	☐Yes	☐No	☐N/A	12.

Samples Received: Pressure Gauge # 10AIR26

Canisters					Canisters				
Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure	Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure
19			-4	+5	unused can			-20	—
20			-4.5	"	"			-28.5	—
21			-5	"					
22			-6	"					
23			-4	"					
24			-5	"					
25			-4	"					
unused can			-26	—					
"			-18	—					

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Megan McCabe **Date:** 3/29/18

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)