

April 25, 2024

SENT VIA E-MAIL ONLY

Mr. Adam Weinzapfel, Permit Manager  
Indiana Department of Environmental Management  
Solid Waste Permits – IGCN 1101  
100 North Senate Avenue  
Indianapolis, IN 46204-2251

Subject: **Topsoil Material Plan Submittal**  
**Bailly Generating Station, SW Program ID 64-014**  
**Chesterton, Porter County**

Dear Mr. Weinzapfel:

Pursuant to the requirement F1 in the Approval of CCR Closure/Post-Closure Plan dated March 28, 2024, for the above referenced facility, the Northern Indiana Public Service Company, LLC (NIPSCO) respectfully submits the enclosed plan for the Topsoil portion of the final cover.

Thank you for your attention to this matter. Should you have questions, please contact me at 219-742-1979 or jloewe@nisource.com.

Sincerely,



Jeffrey M. Loewe  
Manager, Environmental Remediation  
NiSource, Inc.

#### ATTACHMENTS

1. *BORROW SOURCE PLAN – 6-INCH TOPSOIL LAYER*, dated April 25, 2024, 89 pages

**ATTACHMENT 1**  
**BORROW SOURCE PLAN – 6-INCH TOPSOIL LAYER**

BORROW SOURCE PLAN – 6-INCH TOPSOIL LAYER  
CCR IMPOUNDMENT CLOSURE  
BAILLY GENERATING STATION (BGS) - SW ID 64-014

NIPSCO LLC is pleased to provide this Borrow Source Plan to the Indiana Department of Environmental Management (IDEM) for CCR Impoundment Closure at the MCGS. This submittal addresses borrow for the topsoil layer.

As outlined in the approved Closure Application, CCR and the liner system will be removed from the impoundments. After the excavation is complete, backfill and soil cover will be placed. NIPSCO estimates approximately 12,850 CY of topsoil material is required to place 6 inches of topsoil over the soil cover layer.

IDEM's Closure Approval letter dated March 28, 2024, (Section F1) outlines information to be provided in the Borrow Source Plan Submittal. Information addressing Borrow Plan requirement items a, b, and c are provided below:

Item a: *Plans depicting the locations of the borrow area and the location of the borrow area test pits if applicable.*

Tetra Tech, the BGS closure contractor proposes to obtain soil for the 6-inch topsoil layer from a 3.5-acre borrow source provided by GE Marshall, located at 1351 Joliet Road in Valparaiso, Indiana. See Attachment 1 for the stockpiling location. Three samples were collected from the borrow area along with four additional samples collected as delivered to Michigan City Generating Station (MCGS) during closure construction. Environmental samples were taken from sample locations 1 and 2. Note that this is the same borrow source used and approved by IDEM for topsoil for the MCGS impoundment closure project.

Item b: *Results of the borrow area test pits and/or the soil specifications, and environmental testing results showing imported soils are clean/uncontaminated.*

Project specifications require that borrow soil for topsoil meet the following criteria:

Property	Test Method	Criteria	Frequency
Particle Size Analysis	ASTM D7928-17	Clay: 40 % max.	Every 3,000 cubic yards
		Silt: 70% max.	
		Sand: 20% max.	
Organic Content	ASTM D2974-20e1	2% min.; 10% max.	Every 3,000 cubic yards
pH	AASHTO T 289-91(2018)	6.2 min.; 7.4 max.	Every 3,000 cubic yards

**Notes:** % - percent; min. – minimum; max. – maximum; ASTM – ASTM International; AASHTO – American Association of State Highway and Transportation Officials  
Use in place volume for testing frequency.

The results of soil samples taken from the proposed borrow source are included in Attachment 2. The topsoil results indicate a sand percentage of 50 to 58 percent, which exceeds the project specification requirement. A review of various data on the topsoil materials indicated that a higher percentage of sand is typical for this part of the state and that these materials can perform suitably for surface protection and vegetative growth. An evaluation was performed using the Revised Universal Soil Loss (RUSL) calculation to demonstrate that the proposed topsoil material will meet the regulatory erosion maximum limit of 5 tons per acre per year on the closure slopes (See Attachment 3). Based on the RUSL calculation result and the engineer’s review, this material was determined to be suitable for topsoil project requirements.

An environmental chemical analysis result is provided in Attachment 4. The laboratory data results indicate the proposed borrow is clean/uncontaminated.

Item c: *A soil balance calculation to support the availability of the soils for the final cover.*

The proposed borrow area is 3.5 acres and was determined to have suitable materials for topsoil use to a minimum depth of approximately 5 feet, equaling approximately 28,000 CY. This exceeds the amount of material to meet the 12,850 CY project requirement.

# Attachment 1



Valparaiso

Samuel St

Division Rd

BORROW LOCATION



Montdale Rd

N 625 E



3

2

1

## **Attachment 2**



Sample Identification	Sample Type	Sample Depth (ft)	Soil Classification	In-situ Moisture %	Atterberg Limits				Grain Size Distribution		STANDARD Proctor		Organic Content	pH	Hydraulic Conductivity (cm/sec)	Additional Tests Conducted (See Notes)
					LL	PL	PI	LI	% Finer #4 sieve	% Finer #200 sieve	Maximum Dry Density (pcf)	Optimum Moisture %				
Topsoil-1	Bag	-	SC*	16.4	-	-	-	-	96.0	43.3	-	-	3.9	6.7	-	
Topsoil-2	Bag	-	SC*	17.1	-	-	-	-	96.8	42.0	-	-	3.8	6.8	-	

ABBREVIATIONS: LIQUID LIMIT (LL)  
 PLASTIC LIMIT (PL)  
 PLASTICITY INDEX (PI)  
 LIQUIDITY INDEX (LI)  
 SPECIFIC GRAVITY (Gs)  
 MOISTURE (Mc)

NOTES: T = TRIAXIAL TEST  
 U = UNCONFINED COMPRESSION TEST  
 C = CONSOLIDATION TEST  
 DS = DIRECT SHEAR TEST  
 O = ORGANIC CONTENT  
 P = pH  
 NP = NON-PLASTIC  
 \*Classified Visually



NIPSCO MCGS - CQA  
Geotechnical Laboratory Test Results

31404605

Sample Identification	Sample Description	Sample Type	Soil Classification	In-situ Moisture %	Atterberg Limits				Grain Size Distribution		STANDARD Proctor		Unit Weight		Hydraulic Conductivity (cm/sec)
					LL	PL	PI	LI	% Finer #4 sieve	% Finer #200 sieve	Maximum Dry Density (pcf)	Optimum Moisture %	Dry (pcf)	Moisture %	
			Sample No.												
IS-1	On-Site Subgrade	Bulk	SM*	11.6	NON-PLASTIC				97.7	28.8	120.7	10.8	-	-	-
IS-2	On-Site Subgrade	Bulk	SM*	12.3	NON-PLASTIC				99.1	35.7	107.9	13.1	-	-	-
IS-3	On-Site Subgrade	Bulk	SM*	11.8	NON-PLASTIC				100.0	37.0	103.4	14.5	-	-	-
IS-4	On-Site Subgrade	Bulk	SM*	11.2	NON-PLASTIC				99.5	14.1	106.3	13.2	-	-	-
IS-5	On-Site Subgrade	Bulk	SP-SM	13.1	NON-PLASTIC				99.8	11.1	104.6	13.4	-	-	-
IS-6	On-Site Subgrade	Bulk	SM*	13.0	NON-PLASTIC				98.5	27.6	113.3	11.2	-	-	-
IS-7	On-Site Subgrade	Bulk	SM*	8.0	NON-PLASTIC				97.8	13.4	105.7	14.0	-	-	-
IS-8	On-Site Subgrade	Bulk	SM*	12.6	NON-PLASTIC				99.8	22.2	108.8	12.8	-	-	-
IS-9	On-Site Subgrade	Bulk	SM*	14.2	NON-PLASTIC				99.7	28.3	109.3	12.1	-	-	-
IS-10	On-Site Subgrade	Bulk	SM*	12.1	NON-PLASTIC				99.9	12.3	105.5	13.4	-	-	-
IC-1	On-Site Soil Cover	Bulk	CL	20.1	41	19	22	0.05	99.3	89.6	106.1	16.8	100.3	16.5	3.3E-07
IC-2	On-Site Soil Cover	Bulk	CL	23.4	38	19	19	0.23	99.6	92.6	106.0	18.2	100.3	18.2	8.4E-08
IC-3	On-Site Soil Cover	Bulk	CL	14.5	30	17	13	-0.19	99.0	87.8	111.0	15.8	105.1	16.1	1.6E-07
IC-4	On-Site Soil Cover	Bulk	CL	19.8	23	15	8	0.60	96.9	76.6	120.7	12.4	114.5	12.3	6.6E-07
IC-5	On-Site Soil Cover	Bulk	CL	16.3	32	7	15	-0.04	98.1	87.8	110.2	15.6	104.7	15.6	1.0E-07
IC-6	On-Site Soil Cover	Bulk	CL	15.0	31	16	15	-0.07	98.2	87.8	113.8	15.2	107.8	15.6	5.9E-08
													Organic Content	pH	
ITS-1	On-Site Top Soil	Bulk	SC	17.1	-	-	-	-	96.5	46.3	-	-	3.9	7.1	-
ITS-2	On-Site Top Soil	Bulk	SC	16.5	-	-	-	-	96.8	44.7	-	-	4.3	7.0	-
ITS-3	On-Site Top Soil	Bulk	SC	15.8	-	-	-	-	97.0	43.4	-	-	3.4	6.7	-
ITS-4	On-Site Top Soil	Bulk	SC	15.9	-	-	-	-	96.7	46.7	-	-	3.8	7.0	-

<b>ORGANIC CONTENT</b>	
ASTM D2974, METHOD C	
JOB NAME: NIPSCO MCGS CQA	DATE: 6/9/2022
JOB NUMBER: 31404605	TECH: TDS
	REVIEW: <i>AGB</i>

MOISTURE CONTENT DETERMINATION						
sample #	Topsoil-1	Topsoil-2				
depth (ft)	-	-				
tare #	2	4				
wt wet soil & tare (g)	184.25	183.40				
wt dry soil & tare (g)	175.70	175.06				
wt tare (g)	125.12	123.92				
wt lost (g)	8.55	8.34				
wt soil, dry (g)	50.58	51.14				
% moisture	<b>16.9%</b>	<b>16.3%</b>				
ASH & ORGANIC CONTENT DETERMINATION						
wt soil & tare, dry (g)	175.70	175.06				
wt soil & tare, burnt (g)	173.73	173.14				
wt tare (g)	125.12	123.92				
wt lost (g)	1.97	1.92				
wt soil, dry (g)	50.58	51.14				
% ash	<b>96.1%</b>	<b>96.2%</b>				
% Volatile organics	<b>3.9%</b>	<b>3.8%</b>				

Note: Gravel removed from test specimen prior to moisture content determination  
 Furnace temperature for ash content determination was approximately 460° C

**GOLDER ASSOCIATES USA, INC.**  
**LANSING, MI**

pH of Soils  
ASHTO T289

JOB NAME: NIPSCO MCGS CQA

DATE: 6/14/2022

JOB NUMBER: 31404605

TECH: RH

REVIEW: *ACB*

pH DETERMINATION in Water

sample #	Topsoil-1	Topsoil-2				
depth	-	-				
tare #	4	8				
wt of soil (g)	30.01	30.00				
temp (c°)	22.0	21.9				
pH of Soil	6.7	6.8				

GOLDER ASSOCIATES USA, INC.  
LANSING, MI

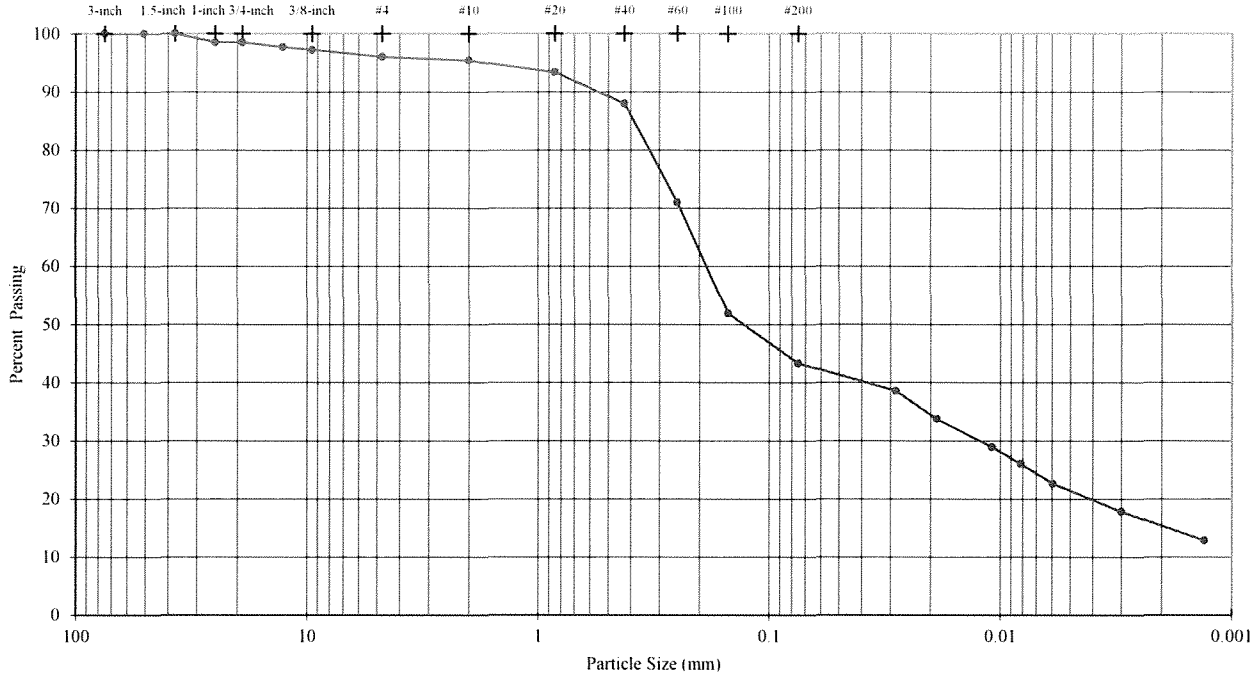
### PARTICLE SIZE DISTRIBUTION & ATTERBERG LIMITS ASTM D421, D422, D4318

PROJECT NAME: NIPSCO MCGS - CQA

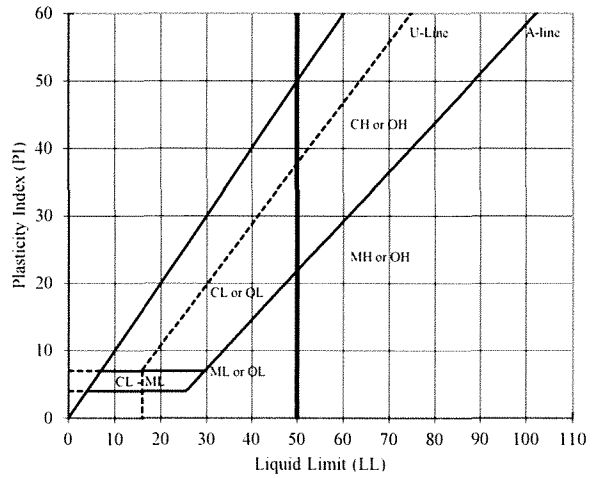
SAMPLE ID: Topsoil-2

DEPTH (ft) -

TYPE: Bag



	Particle Size		Description	Percentage			
	Sieve	(mm)					
Sieve Analysis (Initial Separation on No. 4 Sieve)	3-inch	75.0	100.0	Cobbles	0.00		
	2-inch	50.8	100.0	Coarse Gravel	1.55		
	1.5-inch	37.5	100.0				
	1-inch	25.0	98.5				
	3/4-inch	19.0	98.5	Fine Gravel	2.49		
	1/2-inch	12.7	97.6				
	3/8-inch	9.5	97.2				
	Hydrometer Analysis	#4	4.75	96.0	Coarse Sand	0.58	
		#10	2.0	95.4			
		#20	0.85	93.3			
#40		0.425	87.9	Medium Sand	7.45		
#60		0.25	70.9				
#100		0.15	51.9	Fine Sand	44.66		
#200		0.075	43.3				
		0.028	38.5			Silt or Clay Fines	43.27
		0.019	33.7				
		0.011	28.9				
	0.008	26.0					
	0.006	22.6					
	0.003	17.8					
	0.001	12.8					



Visual Description:  
Dark brown, CLAYEY SAND, trace gravel

LL	PL	PI	LI
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As-Received Moisture Content (%)

16.4

USCS Group Symbol

SC

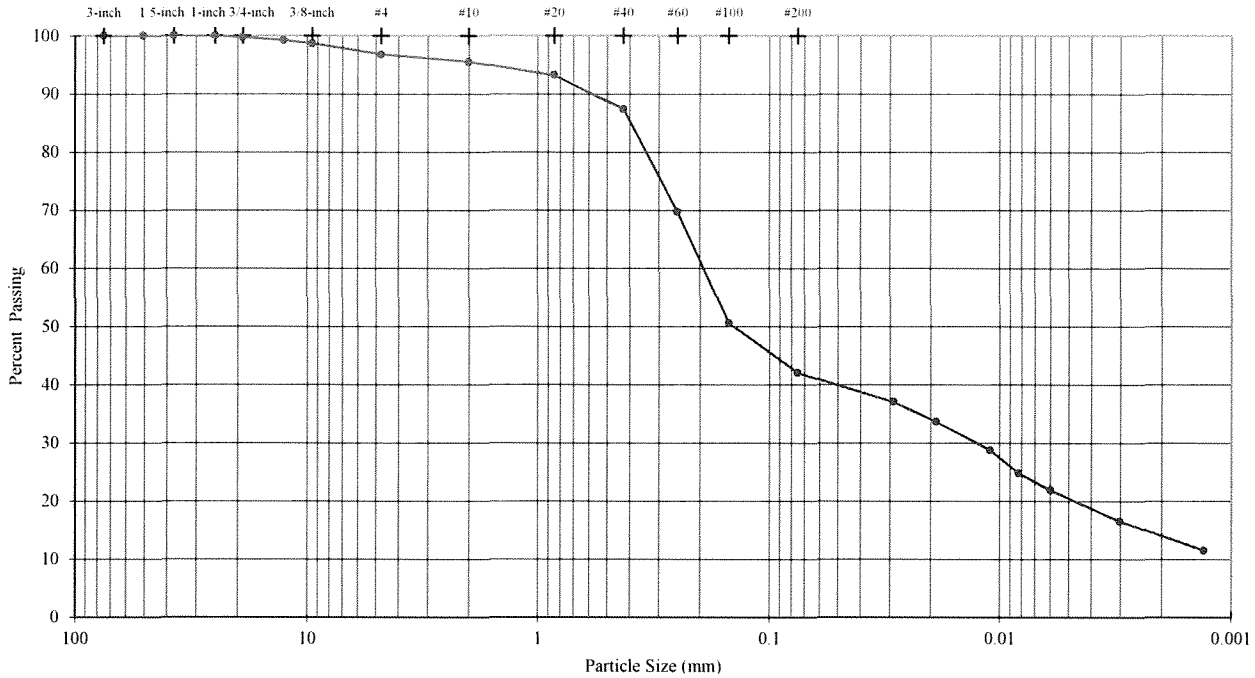
- Notes (1) Particle size analysis sample Mechanically dispersed using Stirring Apparatus A for about 1 Minute  
 (2) Sample prepared for Atterberg Limits testing by the dry method. Material retained on No. 40 sieve removed from Atterberg Limits sample by dry sieving. Plastic Limit test performed by hand rolling. Method A Liquid Limit test performed using manual device

TECH: RH/  
 DATE: 6/10/2022  
 CHECK: P.  
 REVIEW: ACB

### PARTICLE SIZE DISTRIBUTION & ATTERBERG LIMITS ASTM D421, D422, D4318

PROJECT NAME: **NIPSCO MCGS - CQA**  
 SAMPLE ID: **Topsoil-1**  
 TYPE: **Bag**

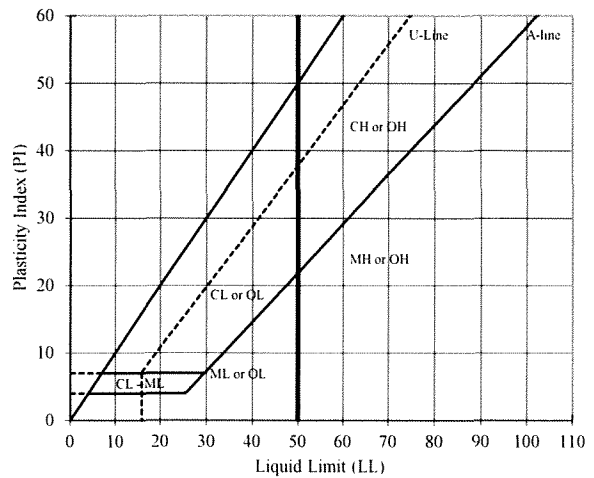
DEPTH (ft): -



Sieve	Particle Size		Description	Percentage
	(mm)	% Passing		
3-inch	75.0	100.0	Cobbles	0.00
2-inch	50.8	100.0	Coarse Gravel	0.29
1.5-inch	37.5	100.0		
1-inch	25.0	100.0		
3/4-inch	19.0	99.7		
1/2-inch	12.7	99.2	Fine Gravel	2.95
3/8-inch	9.5	98.6		
#4	4.75	96.8	Coarse Sand	1.26
#10	2.0	95.5		
#20	0.85	93.2		
#40	0.425	87.4	Medium Sand	8.11
#60	0.25	69.7		
#100	0.15	50.5	Fine Sand	45.34
#200	0.075	42.0		
	0.029	37.0		
	0.019	33.6		
	0.011	28.7		
	0.008	24.8		
	0.006	21.9		
	0.003	16.5		
	0.001	11.5		

Sieve Analysis  
(Initial Separation on No. 4 Sieve)

Hydrometer Analysis



Visual Description:  
 Dark brown, CLAYEY SAND, trace gravel

LL	PL	PI	LI
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As-Received Moisture Content (%)

17.1

USCS Group Symbol

SC

- Notes: (1) Particle size analysis sample Mechanically dispersed using Stirring Apparatus A for about 1 Minute  
 (2) Sample prepared for Atterberg Limits testing by the dry method. Material retained on No. 40 sieve removed from Atterberg Limits sample by dry sieving. Plastic Limit test performed by hand rolling. Method A Liquid Limit test performed using manual device.

TECH	RH
DATE	6/10/2022
CHECK	<i>[Signature]</i>
REVIEW	<i>[Signature]</i>



**K&S ENGINEERS, INC.**

**REPORT  
LABORATORY TESTING  
Topsoil Analysis**

**K & S File No. 13533**

**April 21, 2022**



9715 Kennedy Avenue • Highland, Indiana 46322  
(219) 924-5231 • (773) 734-5900 • FAX (219) 924-5271

www.kandsengineers.com • info@kandsengineers.com

April 21, 2022

K & S File No. 13533

**REPORT  
LABORATORY TESTING  
Topsoil Analysis**

Pursuant to your request, K & S Engineers, Inc., (K & S) is pleased to present this report of laboratory testing services performed on a topsoil sample delivered to our lab on 4/18/2022.

**SCOPE**

The scope included laboratory testing of the topsoil sample received as per the specifications provided and preparation of this report.

The soil samples will be retained in our facility for a period of 60 days, after which time they will be discarded unless other arrangements are made.



## FINDINGS

The summary of the test results are presented below.

Soil Classification	Silty Sand (SM)
Gravel	2.0%
Sand	52.4%
Silt	25.5%
Clay	20.1%
pH	6.4
Organic Content	4.5%
Phosphorus	8 ppm
Potassium	93 ppm
Calcium	1500 ppm
Magnesium	400 ppm

The grain-size curve and topsoil analysis test results are attached with this report.

## LIMITATIONS

The results presented in this report are based upon the premise of competent lab testing.

The professional services provided in connection with this project were performed in a manner consistent with the level of care and skill ordinarily exercised by an engineering firm. The results presented in this report are based upon limited testing and engineering judgment. No other representation, warranty, or guarantee is intended.

We appreciate the opportunity to work with you on this project. If you have any questions concerning this report, or if we may be of any additional services, please do not hesitate to contact our office.

Very Truly Yours,

**K&S Engineers, Inc.**

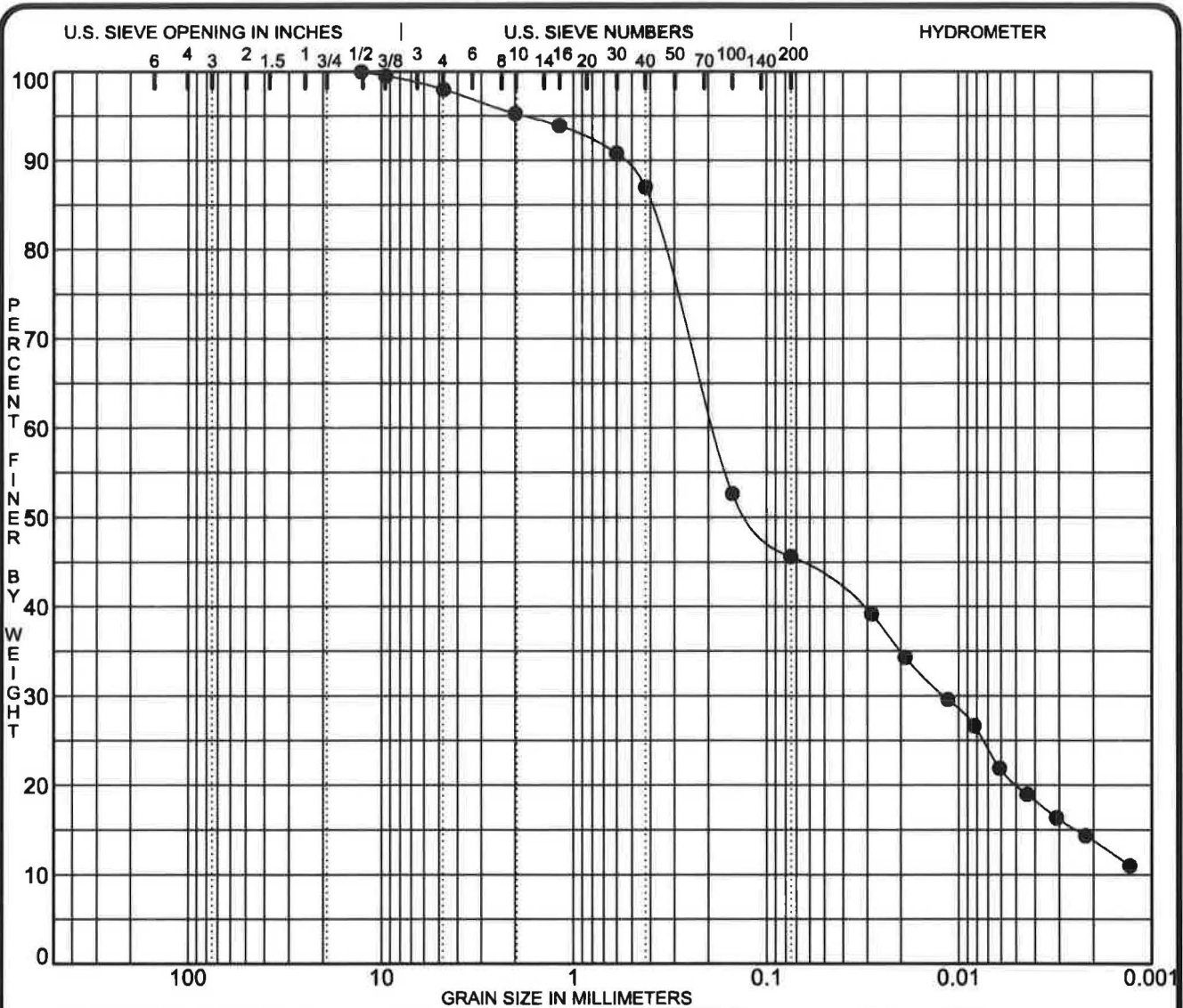


Sadrish Panthi, P.E.  
Senior Project Engineer



Dibakar Sundi, P.E.  
Senior Engineer





COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	Classification	MC%	LL	PL	PI	Cc	Cu
● Topsoil 0.0	SILTY SAND SM	19	NP	NP	NP		

Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● Topsoil 0.0	12.70	0.19	0.012		2.0	52.4	25.5	20.1

PROJECT Laboratory Testing - 325 E, Valparaiso, IN

DES. NO.  
PROJ. NO.

JOB NO.  
DATE 4/20/22

PARTICLE-SIZE CURVES



K & S ENGINEERS, INC.

Report Number  
F22109-0093  
Account Number  
45516



**a&lgreatlakes**  
LABORATORIES  
Scientists who don't mind getting dirty.™

3505 Conestoga Dr.  
Fort Wayne, IN 46808  
260.483.4759  
algreatlakes.com

To: K & S ENGINEERS  
9715 KENNEDY AVE  
HIGHLAND, IN 46322-3357

Date Received: 04/19/2022  
Date Reported: 04/21/2022

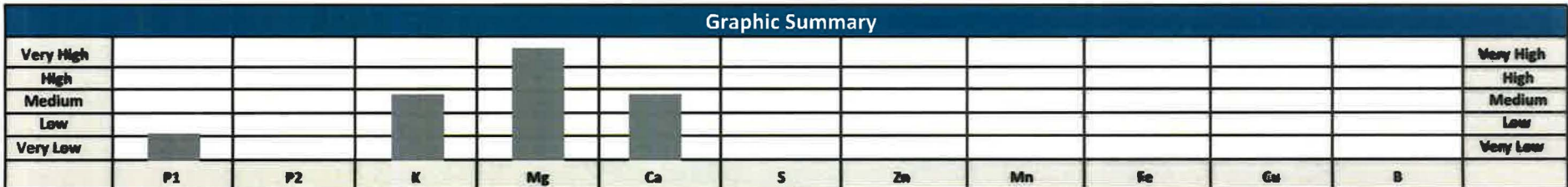
Sample ID: 13533-1

Lab Number: 78714

## SOIL TEST REPORT

Page: 1 of 1

Soil Test Results														
Organic Matter %	Phosphorus		Potassium K ppm	Magnesium Mg ppm	Calcium Ca ppm	Sodium Na ppm	pH		CEC meq/100g	Cation Saturation				
	Bray-1 Equiv ppm	Bray P2 ppm					Soil pH	Buffer pH		% K	% Mg	% Ca	% H	% Na
3.4	8		93	400	1500		6.4	6.9	12.3	1.9	27.2	61.1	9.8	
Sulfur S ppm	Zinc Zn ppm	Manganese Mn ppm	Iron Fe ppm	Copper Cu ppm	Boron B ppm	Soluble Salts (1:2) mmho/cm	Nitrate NO <sub>3</sub> -N ppm	Ammonium NH <sub>4</sub> -N ppm	Bicarbonate-P P ppm	Chloride Cl ppm			Aluminum Al-DEE ppm	



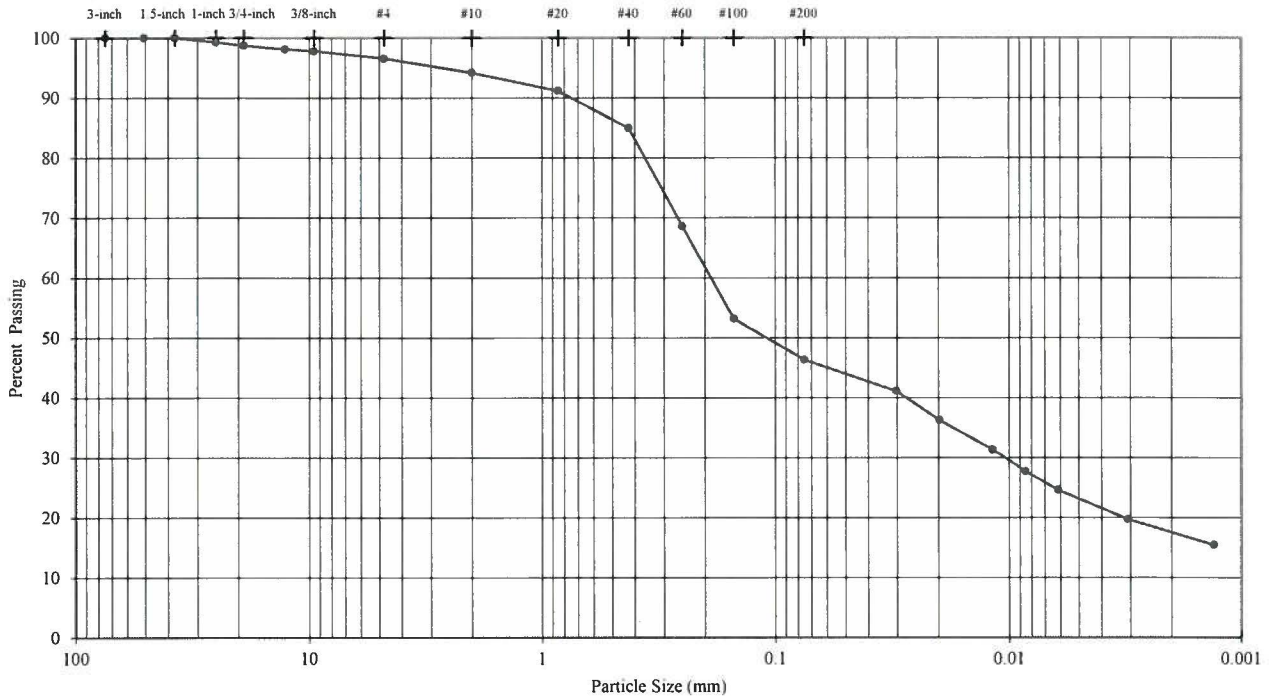
Soil Fertility Recommendations													
Intended Crop	Yield Goal	Previous Crop	Lime Tons/A	Nitrogen N lb/A	Phosphate P <sub>2</sub> O <sub>5</sub> lb/A	Potash K <sub>2</sub> O lb/A	Magnesium Mg lb/A	Sulfur S lb/A	Zinc Zn lb/A	Manganese Mn lb/A	Iron Fe lb/A	Copper Cu lb/A	Boron B lb/A

Report reviewed and approved by our professional agronomy staff.

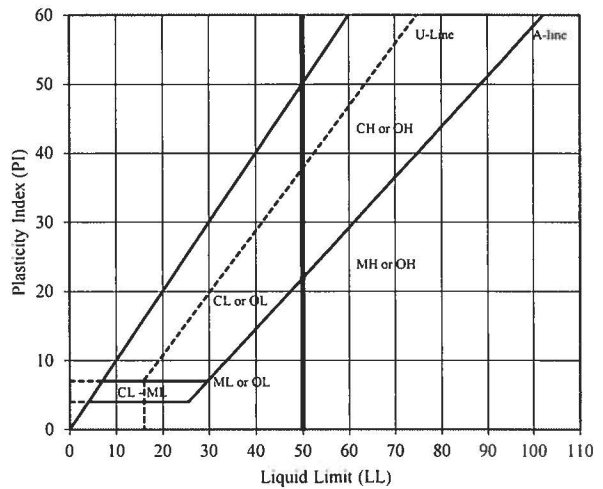
**PARTICLE SIZE DISTRIBUTION & ATTERBERG LIMITS**  
**ASTM D421, D422, D4318**

PROJECT NAME: NIPSCO MCGS CQA  
 SAMPLE ID: ITS-1  
 TYPE: Bulk

DEPTH (ft): -



Sieve	Particle Size (mm)	% Passing	Description	Percentage
3-inch	75.0	100.0	Cobbles	0.00
2-inch	50.8	100.0	Coarse Gravel	1.31
1.5-inch	37.5	100.0		
1-inch	25.0	99.2		
3/4-inch	19.0	98.7		
1/2-inch	12.7	98.1	Fine Gravel	2.16
3/8-inch	9.5	97.7		
#4	4.75	96.5		
#10	2.0	94.2	Coarse Sand	2.37
#20	0.85	91.1	Medium Sand	9.25
#40	0.425	84.9		
#60	0.25	68.5	Fine Sand	38.62
#100	0.15	53.1		
#200	0.075	46.3		
	0.030	41.0		
	0.020	36.2	Silt or Clay Fines	46.29
	0.012	31.3		
	0.008	27.6		
	0.006	24.6		
	0.003	19.7		
	0.001	15.4		



Visual Description:  
 Very dark brown, CLAYEY SAND, trace gravel

LL	PL	PI	LI
--	--	--	--

As-Received Moisture Content (%)  
 17.1

USCS Group Symbol  
 SC

- Notes (1) Particle size analysis sample Mechanically dispersed using Stirring Apparatus A for about 1 Minute  
 (2) Sample prepared for Atterberg Limits testing by the dry method. Material retained on No. 40 sieve removed from Atterberg Limits sample by dry sieving. Plastic Limit test performed by hand rolling. Method A Liquid Limit test performed using manual device.

TECH: RH/NC  
 DATE: 5/12/2023  
 CHECK: [Signature]  
 REVIEW: [Signature]



**ORGANIC CONTENT**  
**ASTM D2974, METHOD A**

JOB NAME: NIPSCO MCGS CQA	DATE: 5/9/2023
JOB NUMBER: 31404605	TECH: RH
	CHECK: <i>PH</i>
	REVIEW: <i>ACB</i>

**MOISTURE CONTENT DETERMINATION**

sample #	ITS-1					
depth (ft)	-					
tare #	1					
wt wet soil & tare (g)	189.15					
wt dry soil & tare (g)	180.46					
wt tare (g)	129.56					
wt lost (g)	8.69					
wt soil, dry (g)	50.90					
% moisture	<b>17.1%</b>					

**ASH & ORGANIC CONTENT DETERMINATION**

wt soil & tare, dry (g)	180.46					
wt soil & tare, burnt (g)	178.46					
wt tare (g)	129.56					
wt lost (g)	2.00					
wt soil, dry (g)	50.90					
% ash	<b>96.1%</b>					
% Volatile organics	<b>3.9%</b>					

Start time 0900 End Time 1500

Note: Gravel removed from test specimen prior to moisture content determination  
Furnace temperature for ash content determination was approximately 460° C

**WSP USA, INC.**  
**LANSING, MI**

WSP

pH of Soils  
ASHTO T289

JOB NAME: NIPSCO MCGS CQA

DATE: 5/11/2023

JOB NUMBER: 31404605

TECH: RH

Check: *PS*

REVIEW: *ACB*

pH DETERMINATION in Water

sample #	ITS-1					
depth	-					
tare #	1					
wt of soil (g)	30.01					
temp (c°)	21.7					
pH of Soil	7.1					

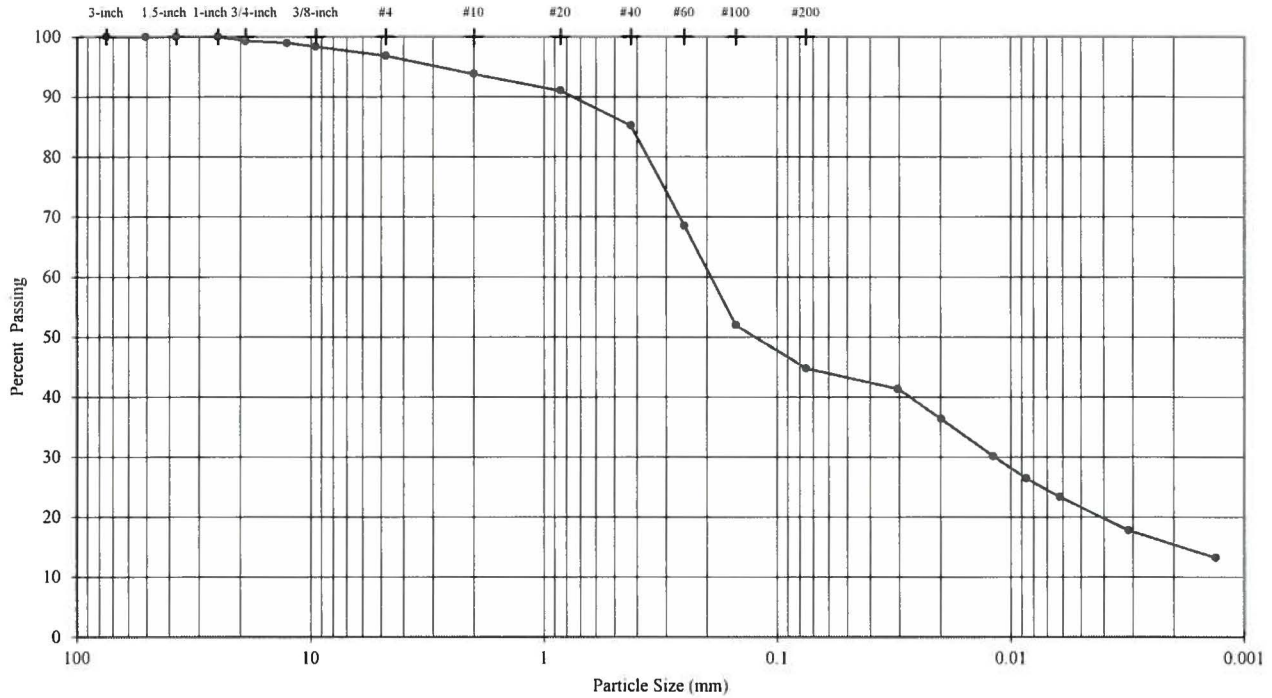
Balance ID: IT 1202121  
pH meter/Electrode ID: 2136710240  
Thermometer ID: 2136710240

WSP USA, INC.  
LANSING, MI

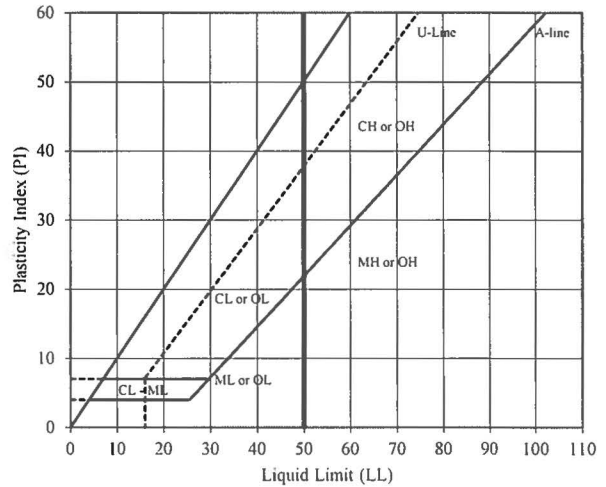
**PARTICLE SIZE DISTRIBUTION & ATTERBERG LIMITS  
ASTM D421, D422, D4318**

PROJECT NAME: NIPSCO MCGS CQA  
 SAMPLE ID: ITS-2  
 TYPE: Bulk

DEPTH (ft) -



	Sieve	Particle Size (mm)	% Passing	Description	Percentage	
Sieve Analysis (Initial Separation on No. 4 Sieve)	3-inch	75.0	100.0	Cobbles	0.00	
	2-inch	50.8	100.0	Coarse Gravel	0.76	
	1.5-inch	37.5	100.0			
	1-inch	25.0	100.0			
		3/4-inch	19.0	99.2	Fine Gravel	2.48
		1/2-inch	12.7	98.9		
		3/8-inch	9.5	98.3	Coarse Sand	3.00
	#4	4.75	96.8			
	#10	2.0	93.8			
	#20	0.85	91.0			
	#40	0.425	85.2			
	#60	0.25	68.4			
Hydrometer Analysis	#100	0.15	51.9	Medium Sand	8.61	
	#200	0.075	44.7			
		0.030	41.3	Fine Sand	40.40	
		0.020	36.3			
		0.012	30.1			
		0.009	26.4			
		0.006	23.3			
	0.003	17.7				
	0.001	13.2	Silt or Clay Fines	44.75		



Visual Description:  
 Very dark brown, CLAYEY SAND, trace gravel

LL	PL	PI	LI
-	-	-	-

As-Received Moisture Content (%)  
 16.5

USCS Group Symbol  
 SC

- Notes: (1) Particle size analysis sample Mechanically dispersed using Stirring Apparatus A for about 1 Minute  
 (2) Sample prepared for Atterberg Limits testing by the dry method. Material retained on No. 40 sieve removed from Atterberg Limits sample by dry sieving. Plastic Limit test performed by hand rolling. Method A Liquid Limit test performed using manual device.

TECH: RH/NC  
 DATE: 5/12/2023  
 CHECK: [Signature]  
 REVIEW: [Signature]



**ORGANIC CONTENT**  
ASTM D2974, METHOD A

JOB NAME: NIPSCO MCGS CQA	DATE: 5/9/2023
JOB NUMBER: 31404605	TECH: RH
	CHECK: <i>PS</i>
	REVIEW: <i>ACB</i>

**MOISTURE CONTENT DETERMINATION**

sample #	ITS-2					
depth (ft)	-					
tare #	2					
wt wet soil & tare (g)	182.66					
wt dry soil & tare (g)	174.50					
wt tare (g)	125.11					
wt lost (g)	8.16					
wt soil, dry (g)	49.39					
% moisture	<b>16.5%</b>					

**ASH & ORGANIC CONTENT DETERMINATION**

wt soil & tare, dry (g)	174.50					
wt soil & tare, burnt (g)	172.37					
wt tare (g)	125.11					
wt lost (g)	2.13					
wt soil, dry (g)	49.39					
% ash	<b>95.7%</b>					
% Volatile organics	<b>4.3%</b>					

Start time 0900 End Time 1500

Note: Gravel removed from test specimen prior to moisture content determination  
Furnace temperature for ash content determination was approximately 460° C

**WSP USA, INC.**  
**LANSING, MI**



WSP

pH of Soils  
ASHTO T289

JOB NAME: NIPSCO MCGS CQA

DATE: 5/11/2023

JOB NUMBER: 31404605

TECH: RH

Check: *PS*

REVIEW: *ACB*

pH DETERMINATION in Water

sample #	ITS-2					
depth	-					
tare #	2					
wt of soil (g)	30.00					
temp (c°)	21.6					
pH of Soil	7.0					

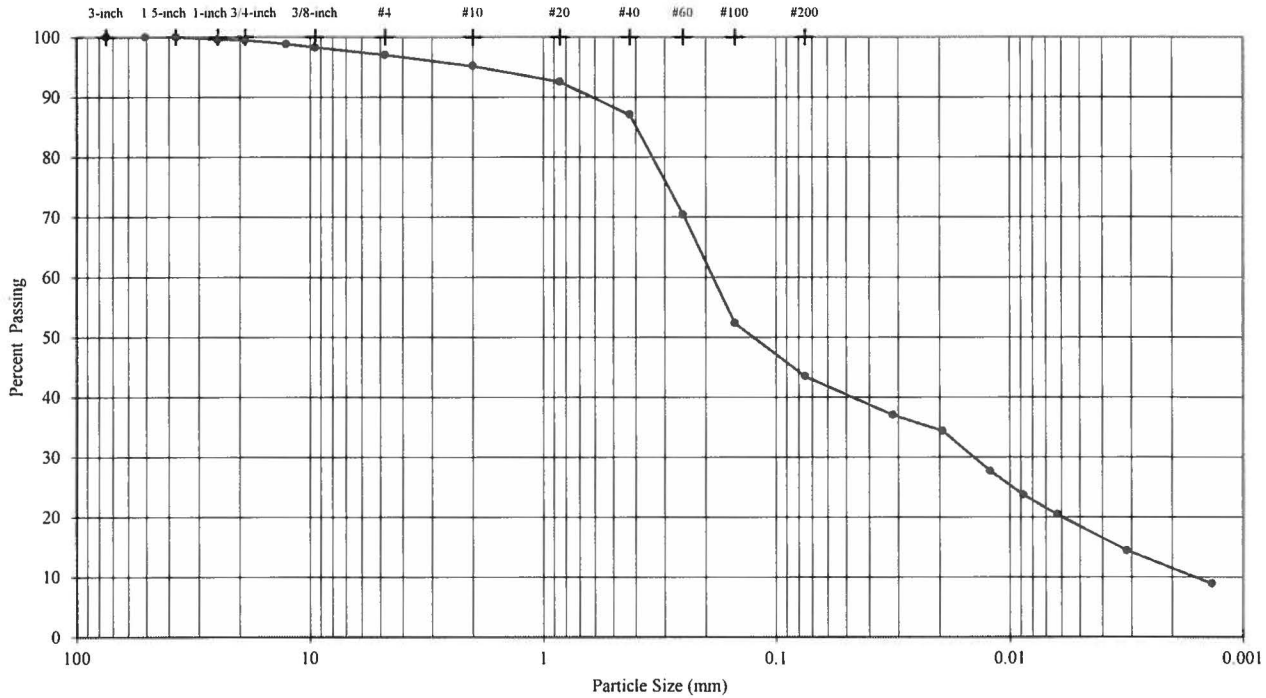
Balance ID: IT 1202121  
pH meter/Electrode ID: 2136710240  
Thermometer ID: 2136710240

WSP USA, INC.  
LANSING, MI

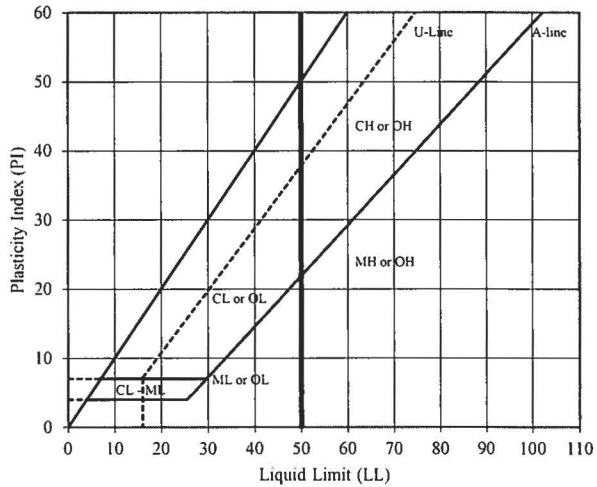
**PARTICLE SIZE DISTRIBUTION & ATTERBERG LIMITS**  
**ASTM D421, D422, D4318**

PROJECT NAME: NIPSCO MCGS CQA  
 SAMPLE ID: ITS-3  
 TYPE: Bulk

DEPTH (ft): -



		Particle Size			
		Sieve (mm)	% Passing	Description	Percentage
Sieve Analysis (Initial Separation on No. 4 Sieve)		3-inch	75.0	Cobbles	0.00
		2-inch	50.8	Coarse Gravel	0.58
		1.5-inch	37.5		
		1-inch	25.0		
		3/4-inch	19.0	Fine Gravel	2.46
		1/2-inch	12.7		
		3/8-inch	9.5		
		#4	4.75	Coarse Sand	1.80
		#10	2.0		
		#20	0.85	Medium Sand	8.14
	#40	0.425			
	#60	0.25	Fine Sand	43.59	
	#100	0.15			
	#200	0.075			
Hydrometer Analysis		0.032	37.0	Silt or Clay Fines	43.43
		0.019	34.3		
		0.012	27.6		
		0.009	23.7		
		0.006	20.4		
		0.003	14.4		
	0.001	8.9			



Visual Description:  
 Dark brown, CLAYEY SAND, trace gravel

LL	PL	PI	LI
--	--	--	--

As-Received Moisture Content (%) **15.8**      USCS Group Symbol **SC**

Notes: (1) Particle size analysis sample Mechanically dispersed using Stirring Apparatus A for about 1 Minute  
 (2) Sample prepared for Atterberg Limits testing by the dry method. Material retained on No. 40 sieve removed from Atterberg Limits sample by dry sieving. Plastic Limit test performed by hand rolling. Method A Liquid Limit test performed using manual device.

TECH: NC/  
 DATE: 5/31/2023  
 CHECK: [Signature]  
 REVIEW: [Signature]



**ORGANIC CONTENT**  
**ASTM D2974, METHOD A**

JOB NAME: NIPSCO MCGS CQA	DATE: 5/30/2023
JOB NUMBER: 31404605	TECH: NC
	CHECK: <i>TPJ</i>
	REVIEW: <i>DMZ</i>

**MOISTURE CONTENT DETERMINATION**

sample #	ITS-3					
depth (ft)	-					
tare #	4					
wt wet soil & tare (g)	193.92					
wt dry soil & tare (g)	192.46					
wt tare (g)	123.90					
wt lost (g)	1.46					
wt soil, dry (g)	68.56					
% moisture	<b>2.1%</b>					

**ASH & ORGANIC CONTENT DETERMINATION**

wt soil & tare, dry (g)	192.46					
wt soil & tare, burnt (g)	190.10					
wt tare (g)	123.90					
wt lost (g)	2.36					
wt soil, dry (g)	68.56					
% ash	<b>96.6%</b>					
% Volatile organics	<b>3.4%</b>					

Start time 0945 End Time 1600

Note: Gravel removed from test specimen prior to moisture content determination  
Furnace temperature for ash content determination was approximately 460° C

**WSP USA, INC.**  
**LANSING, MI**

WSP

pH of Soils  
ASHTO T289

JOB NAME: NIPSCO MCGS CQA

DATE: 5/30/2023

JOB NUMBER: 31404605

TECH: NC

CHECK: *BS*

REVIEW: *BML*

pH DETERMINATION in Water

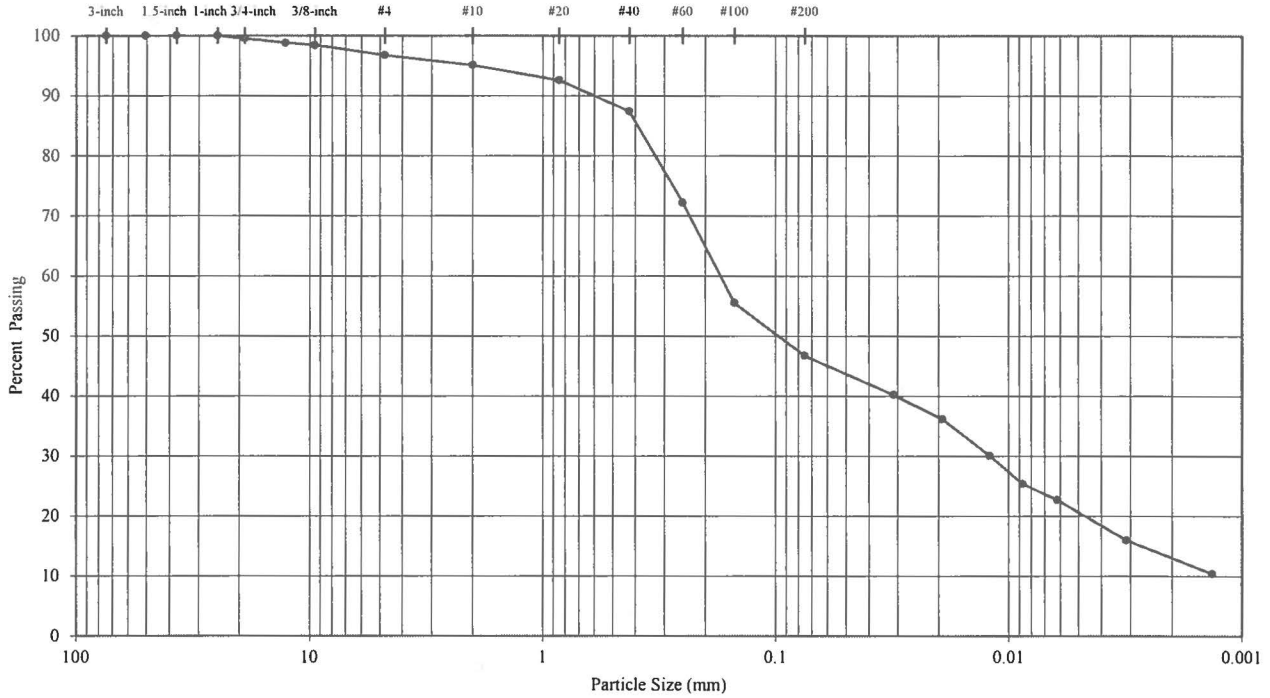
sample #	ITS-3					
depth	-					
tare #	1					
wt of soil (g)	30.01					
temp (c°)	21.9					
pH of Soil	6.7					

WSP USA, INC.  
LANSING, MI

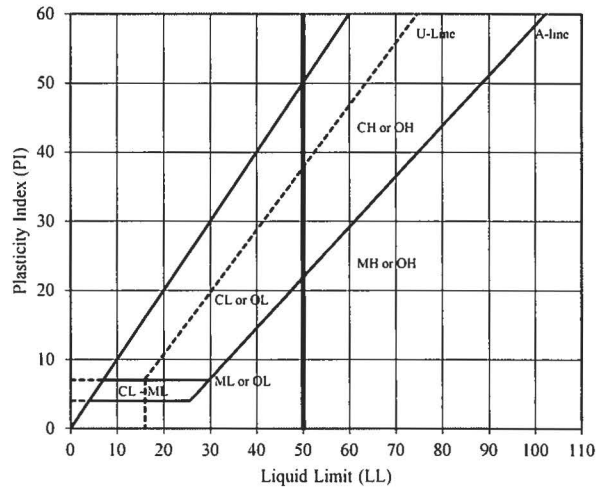
**PARTICLE SIZE DISTRIBUTION & ATTERBERG LIMITS**  
**ASTM D421, D422, D4318**

PROJECT NAME: NIPSCO MCGS CQA  
 SAMPLE ID: ITS-4  
 TYPE: Bulk

DEPTH (ft): -



Sieve	Particle Size (mm)	% Passing	Description	Percentage
3-inch	75.0	100.0	Cobbles	0.00
2-inch	50.8	100.0	Coarse Gravel	0.52
1.5-inch	37.5	100.0		
1-inch	25.0	100.0		
3/4-inch	19.0	99.5	Fine Gravel	2.77
1/2-inch	12.7	98.8		
3/8-inch	9.5	98.4		
#4	4.75	96.7	Coarse Sand	1.64
#10	2.0	95.1		
#20	0.85	92.6		
#40	0.425	87.4	Medium Sand	7.70
#60	0.25	72.1		
#100	0.15	55.5		
#200	0.075	46.7	Fine Sand	40.70
	0.031	40.2		
	0.019	36.1		
	0.012	30.0	Silt or Clay Fines	46.68
	0.009	25.3		
	0.006	22.7		
	0.003	15.9		
	0.001	10.4		



Visual Description:  
 Dark brown, CLAYEY SAND, trace gravel

LL	PL	PI	LI
--	--	--	--

As-Received Moisture Content (%)  
 15.9

USCS Group Symbol  
 SC

- Notes: (1) Particle size analysis sample Mechanically dispersed using Stirring Apparatus A for about 1 Minute  
 (2) Sample prepared for Atterberg Limits testing by the dry method. Material retained on No. 40 sieve removed from Atterberg Limits sample by dry sieving. Plastic Limit test performed by hand rolling. Method A Liquid Limit test performed using manual device.

TECH: NC  
 DATE: 5/31/2023  
 CHECK: [Signature]  
 REVIEW: [Signature]



**ORGANIC CONTENT**  
ASTM D2974, METHOD A

JOB NAME: NIPSCO MCGS CQA	DATE: 5/30/2023
JOB NUMBER: 31404605	TECH: NC
	CHECK: <i>POS</i>
	REVIEW:

**MOISTURE CONTENT DETERMINATION**

sample #	<b>ITS-4</b>					
depth (ft)	-					
tare #	5					
wt wet soil & tare (g)	200.13					
wt dry soil & tare (g)	198.73					
wt tare (g)	130.10					
wt lost (g)	1.40					
wt soil, dry (g)	68.63					
% moisture	<b>2.0%</b>					

**ASH & ORGANIC CONTENT DETERMINATION**

wt soil & tare, dry (g)	198.73					
wt soil & tare, burnt (g)	196.15					
wt tare (g)	130.10					
wt lost (g)	2.58					
wt soil, dry (g)	68.63					
% ash	<b>96.2%</b>					
% Volatile organics	<b>3.8%</b>					

Start time 0945 End Time 1600

Note: Gravel removed from test specimen prior to moisture content determination  
Furnace temperature for ash content determination was approximately 460° C

**WSP USA, INC.**  
**LANSING, MI**

WSP

pH of Soils  
ASHTO T289

JOB NAME: NIPSCO MCGS CQA

DATE: 5/30/2023

JOB NUMBER: 31404605

TECH: NC

CHECK: *PS*

REVIEW:

pH DETERMINATION in Water

sample #	ITS-4					
depth	-					
tare #	2					
wt of soil (g)	30.00					
temp (c°)	21.9					
pH of Soil	7.0					

WSP USA, INC.  
LANSING, MI

## **Attachment 3**



## BAILLY GENERATING STATION

## CCR IMPOUNDMENT CLOSURE

## UNIVERSAL SOIL LOSS CALCULATIONS

Utilizing a spreadsheet developed per *Predicting Rainfall Erosion Loss*, published by USDA in 1978, anticipated soil loss in tons/acre per year was calculated for the 0.5% proposed impoundment closure footprint. Note that all side slopes greater than 0.5% have a riprap cover and not topsoil.

The 0.5% slope and maximum slope length of 360 feet were used to estimate a topographic factor (LS) from Figure 4 of the guidance document, with the following results:

- 0.5% slope – LS of 0.14

The soil erodibility factor (k) was initially determined by visiting the USDA website to review the web soil survey database in the vicinity of the proposed topsoil borrow. The map and table generated are shown below in Figure 1 and Table 1:

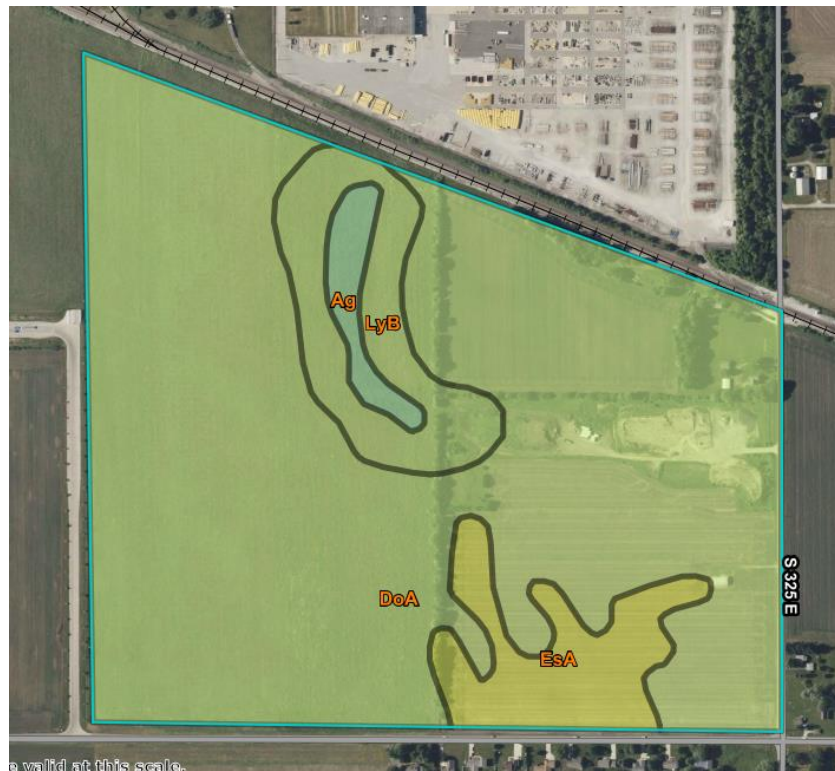


Figure 1 – Map of soils surveyed near RMSGs

Table 1 – Summary of Soils Surveyed  
(rating = k-value)

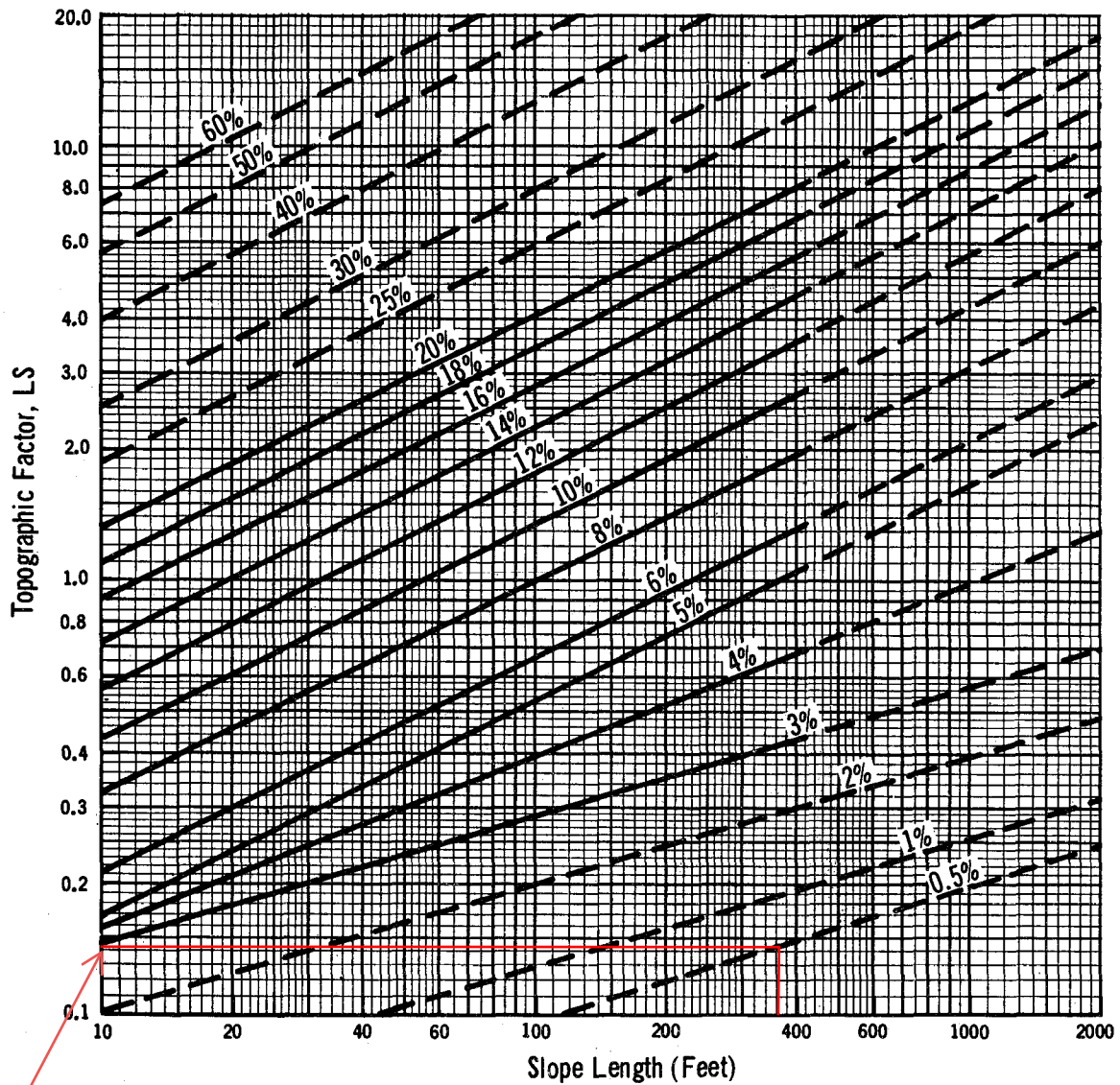
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ag	Alida loam	.28	2.9	2.2%
DoA	Door loam, 0 to 2 percent slopes	.24	107.2	81.7%
EsA	Elston loam, 0 to 3 percent slopes	.20	9.9	7.5%
LyB	Lydick loam, 2 to 6 percent slopes	.24	11.2	8.6%
<b>Totals for Area of Interest</b>			<b>131.2</b>	<b>100.0%</b>

The Door loam is the predominant soil type across the proposed borrow, with a k factor of 0.24. This assumption was checked by laboratory testing conducted on topsoil samples taken from borrow area test pits, as provided in Attachment 2. The average organic matter was 3.85%, the average portion passing the #200 screen was 44.4%, and the average % sand was 52.2%. Using the nomograph attached in Figure 2, this equates to a k-value of 0.28 for the borrow area soil. Therefore, a k factor of 0.27 is used in the calculations.

Additional factors for the calculation were estimated in accordance with the guidance document, as outlined in the summary table below:

BAILLY GS POND SLOPE

$A = R * K * LS * C * P$	value	reference
A, soil loss ton/yr/acre		
R, rainfall-runoff erosivity factor	160	map in Figure 1
K, soil erodibility factor	0.28	Significant quantity of Martinsville loam is available just south of Highway 12, good topsoil candidate
LS, slope length/steepness factor	0.14	Scaled from site plan
C, cover management factor	0.013	Table 10, grass, 80% coverage
P, support practice factor	1	N/A - no terracing
A = soil loss	0.08	tons/Ac/year



0.5% SLOPE

\*The dashed lines represent estimates for slope dimensions beyond the range of lengths and steepnesses for which data are available. The curves were derived by the formula:

$$LS = \left( \frac{\lambda}{72.6} \right)^m \left( \frac{430x^2 + 30x + 0.43}{6.57415} \right)$$

where  $\lambda$  = field slope length in feet and  $m = 0.5$  if  $s = 5\%$  or greater,  $0.4$  if  $s = 4\%$ , and  $0.3$  if  $s = 3\%$  or less; and  $x = \sin \theta$ .  $\theta$  is the angle of slope in degrees.

Figure 3-2.—Slope-effect chart (topographic factor, LS).

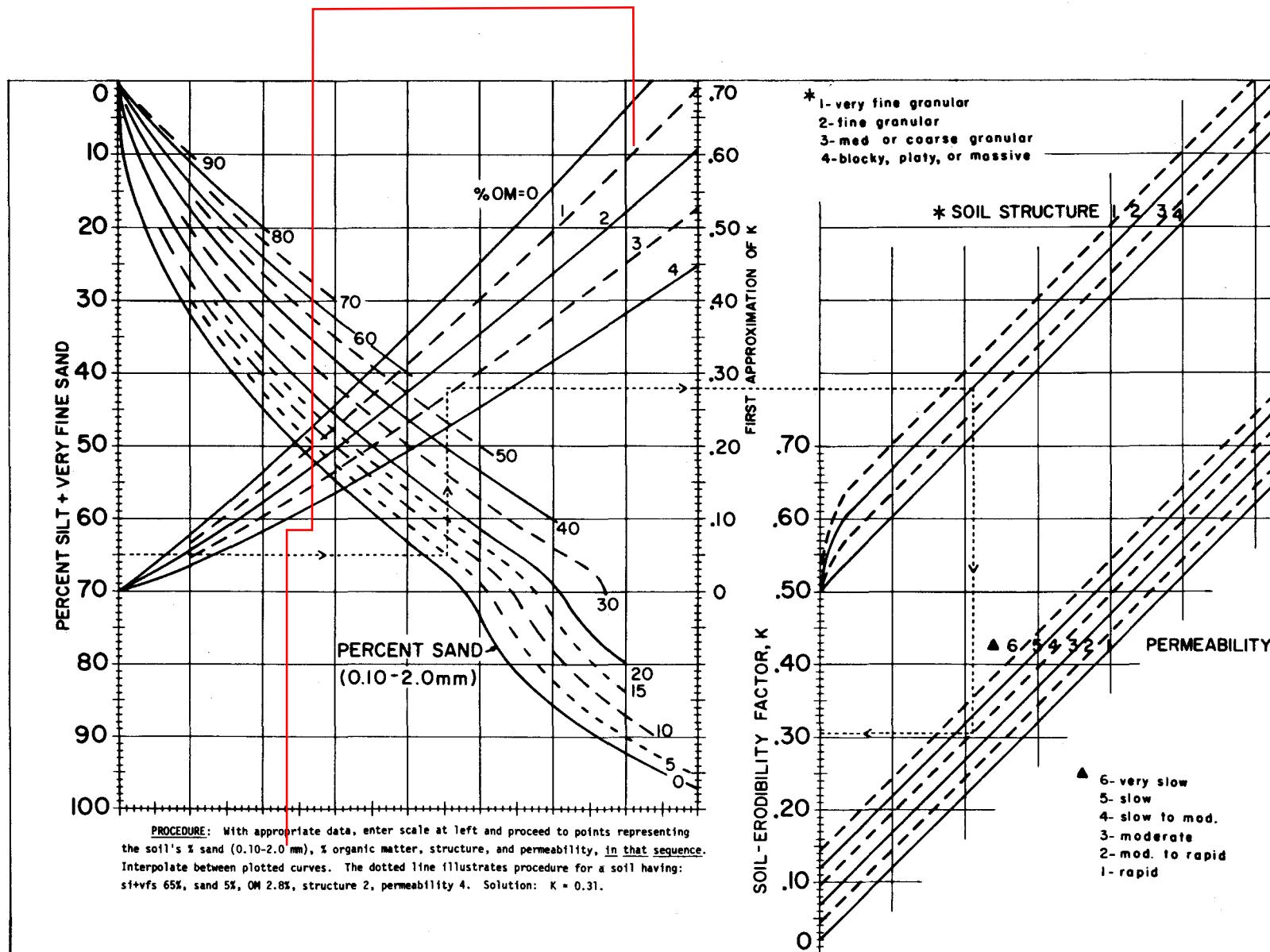


FIGURE 3.—The soil-erodibility nomograph. Where the silt fraction does not exceed 70 percent, the equation is  $100 K = 2.1 M^{1.14} (10^{-5}) (12 - a) + 3.25 (b - 2) + 2.5 (c - 3)$  where  $M = (\text{percent si} + \text{vfs}) (100 - \text{percent c})$ ,  $a = \text{percent organic matter}$ ,  $b = \text{structure code}$ , and  $c = \text{profile permeability class}$ .

## **Attachment 4**

June 15, 2022

Mr. Jim Peace  
WSP Golder  
10 Al Paul Lande  
Suite 103  
Merrimack, NH 03054

RE: Project: MI City - Borrow Source  
Pace Project No.: 50318336

Dear Mr. Peace:

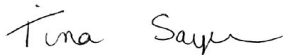
Enclosed are the analytical results for sample(s) received by the laboratory on June 08, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Indianapolis

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

Sincerely,



Tina Sayer  
tina.sayer@pacelabs.com  
(317)228-3100  
Project Manager

Enclosures

cc: Mr. Victor Garcia, WSP Golder  
Mr. Tom Haskins, WSP Golder  
Ms. Danielle Sylvia, WSP Golder



## REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.

## CERTIFICATIONS

Project: MI City - Borrow Source

Pace Project No.: 50318336

---

### **Pace Analytical Services Indianapolis**

7726 Moller Road, Indianapolis, IN 46268

Illinois Accreditation #: 200074

Indiana Drinking Water Laboratory #: C-49-06

Kansas/TNI Certification #: E-10177

Kentucky UST Agency Interest #: 80226

Kentucky WW Laboratory ID #: 98019

Michigan Drinking Water Laboratory #9050

Ohio VAP Certified Laboratory #: CL0065

Oklahoma Laboratory #: 9204

Texas Certification #: T104704355

Wisconsin Laboratory #: 999788130

USDA Soil Permit #: P330-19-00257

---

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: MI City - Borrow Source

Pace Project No.: 50318336

---

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50318336001	Borrow-Topsoil-1	Solid	06/07/22 13:15	06/08/22 08:50
50318336002	Borrow-Topsoil-2	Solid	06/07/22 13:30	06/08/22 08:50
50318336003	Trip Blank	Solid	06/07/22 08:00	06/08/22 08:50

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: MI City - Borrow Source

Pace Project No.: 50318336

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50318336001	Borrow-Topsoil-1	EPA 8081	KAV	23	PASI-I
		EPA 8082	RID	8	PASI-I
		EPA 6010	JPK	7	PASI-I
		EPA 7471	EAE	1	PASI-I
		EPA 8270	JCM	67	PASI-I
		EPA 8260	TMW	73	PASI-I
		SM 2540G	IRH	1	PASI-I
		EPA 9045	TRK	1	PASI-I
50318336002	Borrow-Topsoil-2	EPA 8081	KAV	23	PASI-I
		EPA 8082	RID	8	PASI-I
		EPA 6010	JPK	7	PASI-I
		EPA 7471	EAE	1	PASI-I
		EPA 8270	JCM	67	PASI-I
		EPA 8260	TMW	73	PASI-I
		SM 2540G	IRH	1	PASI-I
		EPA 9045	TRK	1	PASI-I
50318336003	Trip Blank	EPA 8260	TMW	73	PASI-I

PASI-I = Pace Analytical Services - Indianapolis

### REPORT OF LABORATORY ANALYSIS

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### SUMMARY OF DETECTION

Project: MI City - Borrow Source

Pace Project No.: 50318336

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
<b>50318336001</b>	<b>Borrow-Topsoil-1</b>					
EPA 6010	Arsenic	12.1	mg/kg	1.1	06/14/22 22:37	
EPA 6010	Barium	80.3	mg/kg	1.1	06/14/22 22:37	
EPA 6010	Cadmium	0.23J	mg/kg	0.56	06/14/22 22:37	
EPA 6010	Chromium	12.3	mg/kg	1.1	06/14/22 22:37	
EPA 6010	Lead	16.1	mg/kg	1.1	06/14/22 22:37	
EPA 6010	Selenium	1.2	mg/kg	1.1	06/14/22 22:37	
SM 2540G	Percent Moisture	14.7	%	0.10	06/09/22 09:40	N2
EPA 9045	pH at 25 Degrees C	6.7	Std. Units	0.10	06/08/22 16:39	H3
<b>50318336002</b>	<b>Borrow-Topsoil-2</b>					
EPA 6010	Arsenic	12.6	mg/kg	1.1	06/14/22 22:39	
EPA 6010	Barium	70.3	mg/kg	1.1	06/14/22 22:39	
EPA 6010	Cadmium	0.17J	mg/kg	0.54	06/14/22 22:39	
EPA 6010	Chromium	11.7	mg/kg	1.1	06/14/22 22:39	
EPA 6010	Lead	16.8	mg/kg	1.1	06/14/22 22:39	
EPA 6010	Selenium	1.3	mg/kg	1.1	06/14/22 22:39	
EPA 7471	Mercury	0.23J	mg/kg	0.23	06/12/22 18:28	
EPA 8260	Acetone	0.047J	mg/kg	0.094	06/11/22 04:00	
SM 2540G	Percent Moisture	13.1	%	0.10	06/09/22 09:40	N2
EPA 9045	pH at 25 Degrees C	6.7	Std. Units	0.10	06/08/22 16:41	H3
<b>50318336003</b>	<b>Trip Blank</b>					
EPA 8260	Methylene Chloride	0.0017J	mg/kg	0.020	06/11/22 04:31	B

### REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: MI City - Borrow Source

Pace Project No.: 50318336

---

**Method:** EPA 8081

**Description:** 8081 GCS Pesticide Solids

**Client:** WSP\_NiSource

**Date:** June 15, 2022

**General Information:**

2 samples were analyzed for EPA 8081 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

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

**Sample Preparation:**

The samples were prepared in accordance with EPA 3546 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.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: MI City - Borrow Source

Pace Project No.: 50318336

---

**Method:** EPA 8082

**Description:** 8082 PCB Solids

**Client:** WSP\_NiSource

**Date:** June 15, 2022

**General Information:**

2 samples were analyzed for EPA 8082 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

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

**Sample Preparation:**

The samples were prepared in accordance with EPA 3546 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.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: MI City - Borrow Source

Pace Project No.: 50318336

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**Method:** EPA 6010

**Description:** 6010 MET ICP

**Client:** WSP\_NiSource

**Date:** June 15, 2022

**General Information:**

2 samples were analyzed for EPA 6010 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

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

**Sample Preparation:**

The samples were prepared in accordance with EPA 3050 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.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 681420

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 50318660001

M3: Matrix spike recovery was outside laboratory control limits due to matrix interferences.

- MS (Lab ID: 3136341)
  - Lead
- MSD (Lab ID: 3136342)
  - Lead

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: MI City - Borrow Source

Pace Project No.: 50318336

---

**Method:** EPA 7471

**Description:** 7471 Mercury

**Client:** WSP\_NiSource

**Date:** June 15, 2022

**General Information:**

2 samples were analyzed for EPA 7471 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

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

**Sample Preparation:**

The samples were prepared in accordance with EPA 7471 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.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: MI City - Borrow Source

Pace Project No.: 50318336

---

**Method:** EPA 8270

**Description:** 8270 SVOC FS Soil

**Client:** WSP\_NiSource

**Date:** June 15, 2022

**General Information:**

2 samples were analyzed for EPA 8270 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

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

**Sample Preparation:**

The samples were prepared in accordance with EPA 3546 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.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: MI City - Borrow Source

Pace Project No.: 50318336

---

**Method:** EPA 8260

**Description:** 8260 MSV 5035A VOA

**Client:** WSP\_NiSource

**Date:** June 15, 2022

**General Information:**

3 samples were analyzed for EPA 8260 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**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.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 681192

B: Analyte was detected in the associated method blank.

- BLANK for HBN 681192 [MSV/1606 (Lab ID: 3135361)]
- Methylene Chloride

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 681185

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

- LCS (Lab ID: 3135345)
- Acrolein
- Vinyl acetate

QC Batch: 681192

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

- LCS (Lab ID: 3135362)
- Vinyl acetate

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: MI City - Borrow Source

Pace Project No.: 50318336

---

**Method:** EPA 8260

**Description:** 8260 MSV 5035A VOA

**Client:** WSP\_NiSource

**Date:** June 15, 2022

### Additional Comments:

Analyte Comments:

QC Batch: 681185

1d: A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

- BLANK (Lab ID: 3135344)
- Dibromofluoromethane (S)

QC Batch: 681192

1d: A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

- BLANK (Lab ID: 3135361)
- Dibromofluoromethane (S)

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: MI City - Borrow Source

Pace Project No.: 50318336

---

**Method:** EPA 9045

**Description:** 9045 pH Soil

**Client:** WSP\_NiSource

**Date:** June 15, 2022

### General Information:

2 samples were analyzed for EPA 9045 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

### Hold Time:

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

H3: Sample was received or analysis requested beyond the recognized method holding time.

- Borrow-Topsoil-1 (Lab ID: 50318336001)
- Borrow-Topsoil-2 (Lab ID: 50318336002)

### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### Duplicate Sample:

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

### Additional Comments:

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

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: MI City - Borrow Source

Pace Project No.: 50318336

**Sample: Borrow-Topsoil-1**      **Lab ID: 50318336001**      Collected: 06/07/22 13:15      Received: 06/08/22 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8081 GCS Pesticide Solids</b>									
Analytical Method: EPA 8081    Preparation Method: EPA 3546									
Initial Volume/Weight: 20.6 g    Final Volume/Weight: 10 mL									
Pace Analytical Services - Indianapolis									
Aldrin	ND	mg/kg	0.0028	0.00055	1	06/13/22 10:37	06/13/22 18:21	309-00-2	
alpha-BHC	ND	mg/kg	0.0028	0.00059	1	06/13/22 10:37	06/13/22 18:21	319-84-6	
beta-BHC	ND	mg/kg	0.0028	0.00054	1	06/13/22 10:37	06/13/22 18:21	319-85-7	
delta-BHC	ND	mg/kg	0.0028	0.00075	1	06/13/22 10:37	06/13/22 18:21	319-86-8	
gamma-BHC (Lindane)	ND	mg/kg	0.0028	0.00052	1	06/13/22 10:37	06/13/22 18:21	58-89-9	
Chlordane (Technical)	ND	mg/kg	0.057	0.012	1	06/13/22 10:37	06/13/22 18:21	57-74-9	
alpha-Chlordane	ND	mg/kg	0.0028	0.00050	1	06/13/22 10:37	06/13/22 18:21	5103-71-9	
gamma-Chlordane	ND	mg/kg	0.0028	0.00060	1	06/13/22 10:37	06/13/22 18:21	5103-74-2	
4,4'-DDD	ND	mg/kg	0.0057	0.0011	1	06/13/22 10:37	06/13/22 18:21	72-54-8	
4,4'-DDE	ND	mg/kg	0.0057	0.00094	1	06/13/22 10:37	06/13/22 18:21	72-55-9	
4,4'-DDT	ND	mg/kg	0.0057	0.0018	1	06/13/22 10:37	06/13/22 18:21	50-29-3	
Dieldrin	ND	mg/kg	0.0057	0.0010	1	06/13/22 10:37	06/13/22 18:21	60-57-1	
Endosulfan I	ND	mg/kg	0.0028	0.00047	1	06/13/22 10:37	06/13/22 18:21	959-98-8	
Endosulfan II	ND	mg/kg	0.0057	0.00093	1	06/13/22 10:37	06/13/22 18:21	33213-65-9	
Endosulfan sulfate	ND	mg/kg	0.0057	0.0011	1	06/13/22 10:37	06/13/22 18:21	1031-07-8	
Endrin	ND	mg/kg	0.0057	0.0010	1	06/13/22 10:37	06/13/22 18:21	72-20-8	
Endrin aldehyde	ND	mg/kg	0.0057	0.0013	1	06/13/22 10:37	06/13/22 18:21	7421-93-4	
Endrin ketone	ND	mg/kg	0.0057	0.0014	1	06/13/22 10:37	06/13/22 18:21	53494-70-5	
Heptachlor	ND	mg/kg	0.0028	0.00051	1	06/13/22 10:37	06/13/22 18:21	76-44-8	
Heptachlor epoxide	ND	mg/kg	0.0028	0.00048	1	06/13/22 10:37	06/13/22 18:21	1024-57-3	
Methoxychlor	ND	mg/kg	0.028	0.0065	1	06/13/22 10:37	06/13/22 18:21	72-43-5	
Toxaphene	ND	mg/kg	0.057	0.020	1	06/13/22 10:37	06/13/22 18:21	8001-35-2	
<b>Surrogates</b>									
Decachlorobiphenyl (S)	46	%	10-147		1	06/13/22 10:37	06/13/22 18:21	2051-24-3	

### 8082 PCB Solids

Analytical Method: EPA 8082    Preparation Method: EPA 3546

Initial Volume/Weight: 15.9 g    Final Volume/Weight: 10 mL

Pace Analytical Services - Indianapolis

PCB-1016 (Aroclor 1016)	ND	mg/kg	0.11	0.0041	1	06/08/22 22:26	06/09/22 17:26	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	mg/kg	0.11	0.0052	1	06/08/22 22:26	06/09/22 17:26	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	mg/kg	0.11	0.0058	1	06/08/22 22:26	06/09/22 17:26	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	mg/kg	0.11	0.0048	1	06/08/22 22:26	06/09/22 17:26	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	mg/kg	0.11	0.0034	1	06/08/22 22:26	06/09/22 17:26	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	mg/kg	0.11	0.0050	1	06/08/22 22:26	06/09/22 17:26	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	mg/kg	0.11	0.0052	1	06/08/22 22:26	06/09/22 17:26	11096-82-5	
<b>Surrogates</b>									
Tetrachloro-m-xylene (S)	60	%	36-112		1	06/08/22 22:26	06/09/22 17:26	877-09-8	

### 6010 MET ICP

Analytical Method: EPA 6010    Preparation Method: EPA 3050

Initial Volume/Weight: 1.051 g    Final Volume/Weight: 50 mL

Pace Analytical Services - Indianapolis

Arsenic	<b>12.1</b>	mg/kg	1.1	0.19	1	06/14/22 16:27	06/14/22 22:37	7440-38-2	
Barium	<b>80.3</b>	mg/kg	1.1	0.21	1	06/14/22 16:27	06/14/22 22:37	7440-39-3	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: MI City - Borrow Source

Pace Project No.: 50318336

**Sample: Borrow-Topsoil-1**      **Lab ID: 50318336001**      Collected: 06/07/22 13:15      Received: 06/08/22 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010    Preparation Method: EPA 3050									
Initial Volume/Weight: 1.051 g    Final Volume/Weight: 50 mL									
Pace Analytical Services - Indianapolis									
Cadmium	<b>0.23J</b>	mg/kg	0.56	0.032	1	06/14/22 16:27	06/14/22 22:37	7440-43-9	
Chromium	<b>12.3</b>	mg/kg	1.1	0.19	1	06/14/22 16:27	06/14/22 22:37	7440-47-3	
Lead	<b>16.1</b>	mg/kg	1.1	0.44	1	06/14/22 16:27	06/14/22 22:37	7439-92-1	
Selenium	<b>1.2</b>	mg/kg	1.1	0.35	1	06/14/22 16:27	06/14/22 22:37	7782-49-2	
Silver	ND	mg/kg	0.56	0.070	1	06/14/22 16:27	06/14/22 22:37	7440-22-4	
<b>7471 Mercury</b>									
Analytical Method: EPA 7471    Preparation Method: EPA 7471									
Initial Volume/Weight: 0.282 g    Final Volume/Weight: 50 mL									
Pace Analytical Services - Indianapolis									
Mercury	ND	mg/kg	0.25	0.024	1	06/13/22 11:43	06/13/22 18:05	7439-97-6	
<b>8270 SVOC FS Soil</b>									
Analytical Method: EPA 8270    Preparation Method: EPA 3546									
Initial Volume/Weight: 30.3 g    Final Volume/Weight: 1 mL									
Pace Analytical Services - Indianapolis									
Acenaphthene	ND	mg/kg	0.38	0.10	1	06/09/22 12:01	06/11/22 11:29	83-32-9	
Acenaphthylene	ND	mg/kg	0.38	0.11	1	06/09/22 12:01	06/11/22 11:29	208-96-8	
Anthracene	ND	mg/kg	0.38	0.16	1	06/09/22 12:01	06/11/22 11:29	120-12-7	
Benzo(a)anthracene	ND	mg/kg	0.38	0.11	1	06/09/22 12:01	06/11/22 11:29	56-55-3	
Benzo(a)pyrene	ND	mg/kg	0.38	0.13	1	06/09/22 12:01	06/11/22 11:29	50-32-8	
Benzo(b)fluoranthene	ND	mg/kg	0.38	0.13	1	06/09/22 12:01	06/11/22 11:29	205-99-2	
Benzo(g,h,i)perylene	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:29	191-24-2	
Benzo(k)fluoranthene	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:29	207-08-9	
Benzyl alcohol	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:29	100-51-6	
4-Bromophenylphenyl ether	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:29	101-55-3	
Butylbenzylphthalate	ND	mg/kg	0.38	0.21	1	06/09/22 12:01	06/11/22 11:29	85-68-7	
4-Chloro-3-methylphenol	ND	mg/kg	0.38	0.16	1	06/09/22 12:01	06/11/22 11:29	59-50-7	
4-Chloroaniline	ND	mg/kg	0.38	0.10	1	06/09/22 12:01	06/11/22 11:29	106-47-8	
bis(2-Chloroethoxy)methane	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:29	111-91-1	
bis(2-Chloroethyl) ether	ND	mg/kg	0.38	0.15	1	06/09/22 12:01	06/11/22 11:29	111-44-4	
bis(2chloro1methylethyl) ether	ND	mg/kg	0.38	0.13	1	06/09/22 12:01	06/11/22 11:29	108-60-1	
2-Chloronaphthalene	ND	mg/kg	0.38	0.11	1	06/09/22 12:01	06/11/22 11:29	91-58-7	
2-Chlorophenol	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:29	95-57-8	
4-Chlorophenylphenyl ether	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:29	7005-72-3	
Chrysene	ND	mg/kg	0.38	0.13	1	06/09/22 12:01	06/11/22 11:29	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:29	53-70-3	
Dibenzofuran	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:29	132-64-9	
3,3'-Dichlorobenzidine	ND	mg/kg	0.78	0.13	1	06/09/22 12:01	06/11/22 11:29	91-94-1	
2,4-Dichlorophenol	ND	mg/kg	0.38	0.13	1	06/09/22 12:01	06/11/22 11:29	120-83-2	
Diethylphthalate	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:29	84-66-2	
2,4-Dimethylphenol	ND	mg/kg	0.38	0.13	1	06/09/22 12:01	06/11/22 11:29	105-67-9	
Dimethylphthalate	ND	mg/kg	0.38	0.13	1	06/09/22 12:01	06/11/22 11:29	131-11-3	
Di-n-butylphthalate	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:29	84-74-2	
4,6-Dinitro-2-methylphenol	ND	mg/kg	0.78	0.23	1	06/09/22 12:01	06/11/22 11:29	534-52-1	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: MI City - Borrow Source

Pace Project No.: 50318336

**Sample: Borrow-Topsoil-1**      **Lab ID: 50318336001**      Collected: 06/07/22 13:15      Received: 06/08/22 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 SVOC FS Soil</b>									
Analytical Method: EPA 8270    Preparation Method: EPA 3546									
Initial Volume/Weight: 30.3 g    Final Volume/Weight: 1 mL									
Pace Analytical Services - Indianapolis									
2,4-Dinitrophenol	ND	mg/kg	1.9	0.21	1	06/09/22 12:01	06/11/22 11:29	51-28-5	
2,4-Dinitrotoluene	ND	mg/kg	0.38	0.13	1	06/09/22 12:01	06/11/22 11:29	121-14-2	
2,6-Dinitrotoluene	ND	mg/kg	0.38	0.11	1	06/09/22 12:01	06/11/22 11:29	606-20-2	
Di-n-octylphthalate	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:29	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:29	117-81-7	
Fluoranthene	ND	mg/kg	0.38	0.15	1	06/09/22 12:01	06/11/22 11:29	206-44-0	
Fluorene	ND	mg/kg	0.38	0.13	1	06/09/22 12:01	06/11/22 11:29	86-73-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.38	0.10	1	06/09/22 12:01	06/11/22 11:29	87-68-3	
Hexachlorobenzene	ND	mg/kg	0.38	0.097	1	06/09/22 12:01	06/11/22 11:29	118-74-1	
Hexachlorocyclopentadiene	ND	mg/kg	0.38	0.19	1	06/09/22 12:01	06/11/22 11:29	77-47-4	
Hexachloroethane	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:29	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:29	193-39-5	
Isophorone	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:29	78-59-1	
1-Methylnaphthalene	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:29	90-12-0	
2-Methylnaphthalene	ND	mg/kg	0.38	0.11	1	06/09/22 12:01	06/11/22 11:29	91-57-6	
2-Methylphenol(o-Cresol)	ND	mg/kg	0.38	0.16	1	06/09/22 12:01	06/11/22 11:29	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	0.38	0.16	1	06/09/22 12:01	06/11/22 11:29		
Naphthalene	ND	mg/kg	0.38	0.11	1	06/09/22 12:01	06/11/22 11:29	91-20-3	
2-Nitroaniline	ND	mg/kg	0.38	0.16	1	06/09/22 12:01	06/11/22 11:29	88-74-4	
3-Nitroaniline	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:29	99-09-2	
4-Nitroaniline	ND	mg/kg	0.38	0.15	1	06/09/22 12:01	06/11/22 11:29	100-01-6	
Nitrobenzene	ND	mg/kg	0.38	0.13	1	06/09/22 12:01	06/11/22 11:29	98-95-3	
2-Nitrophenol	ND	mg/kg	0.38	0.15	1	06/09/22 12:01	06/11/22 11:29	88-75-5	
4-Nitrophenol	ND	mg/kg	1.9	0.29	1	06/09/22 12:01	06/11/22 11:29	100-02-7	
N-Nitroso-di-n-propylamine	ND	mg/kg	0.38	0.15	1	06/09/22 12:01	06/11/22 11:29	621-64-7	
N-Nitrosodiphenylamine	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:29	86-30-6	
Pentachlorophenol	ND	mg/kg	1.9	0.29	1	06/09/22 12:01	06/11/22 11:29	87-86-5	
Phenanthrene	ND	mg/kg	0.38	0.15	1	06/09/22 12:01	06/11/22 11:29	85-01-8	
Phenol	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:29	108-95-2	
Pyrene	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:29	129-00-0	
2,4,5-Trichlorophenol	ND	mg/kg	0.38	0.13	1	06/09/22 12:01	06/11/22 11:29	95-95-4	
2,4,6-Trichlorophenol	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:29	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	77	%	35-110		1	06/09/22 12:01	06/11/22 11:29	4165-60-0	
2-Fluorobiphenyl (S)	72	%	36-100		1	06/09/22 12:01	06/11/22 11:29	321-60-8	
p-Terphenyl-d14 (S)	83	%	29-117		1	06/09/22 12:01	06/11/22 11:29	1718-51-0	
Phenol-d5 (S)	96	%	35-115		1	06/09/22 12:01	06/11/22 11:29	4165-62-2	
2-Fluorophenol (S)	80	%	22-114		1	06/09/22 12:01	06/11/22 11:29	367-12-4	
2,4,6-Tribromophenol (S)	86	%	10-123		1	06/09/22 12:01	06/11/22 11:29	118-79-6	

## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: MI City - Borrow Source

Pace Project No.: 50318336

**Sample: Borrow-Topsoil-1**      **Lab ID: 50318336001**      Collected: 06/07/22 13:15      Received: 06/08/22 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<p><b>8260 MSV 5035A VOA</b>      Analytical Method: EPA 8260  Initial Volume/Weight: 5.589 g      Final Volume/Weight: 5 mL  Pace Analytical Services - Indianapolis</p>									
Acetone	ND	mg/kg	0.10	0.0041	1		06/10/22 23:49	67-64-1	
Acrolein	ND	mg/kg	0.10	0.0029	1		06/10/22 23:49	107-02-8	L1
Acrylonitrile	ND	mg/kg	0.10	0.0011	1		06/10/22 23:49	107-13-1	
Benzene	ND	mg/kg	0.0052	0.00036	1		06/10/22 23:49	71-43-2	
Bromobenzene	ND	mg/kg	0.0052	0.00035	1		06/10/22 23:49	108-86-1	
Bromochloromethane	ND	mg/kg	0.0052	0.00018	1		06/10/22 23:49	74-97-5	
Bromodichloromethane	ND	mg/kg	0.0052	0.00022	1		06/10/22 23:49	75-27-4	
Bromoform	ND	mg/kg	0.0052	0.00015	1		06/10/22 23:49	75-25-2	
Bromomethane	ND	mg/kg	0.0052	0.00029	1		06/10/22 23:49	74-83-9	
2-Butanone (MEK)	ND	mg/kg	0.026	0.00072	1		06/10/22 23:49	78-93-3	
n-Butylbenzene	ND	mg/kg	0.0052	0.00044	1		06/10/22 23:49	104-51-8	
sec-Butylbenzene	ND	mg/kg	0.0052	0.00046	1		06/10/22 23:49	135-98-8	
tert-Butylbenzene	ND	mg/kg	0.0052	0.00048	1		06/10/22 23:49	98-06-6	
Carbon disulfide	ND	mg/kg	0.010	0.00037	1		06/10/22 23:49	75-15-0	
Carbon tetrachloride	ND	mg/kg	0.0052	0.00032	1		06/10/22 23:49	56-23-5	
Chlorobenzene	ND	mg/kg	0.0052	0.00036	1		06/10/22 23:49	108-90-7	
Chloroethane	ND	mg/kg	0.0052	0.00017	1		06/10/22 23:49	75-00-3	
Chloroform	ND	mg/kg	0.0052	0.00064	1		06/10/22 23:49	67-66-3	
Chloromethane	ND	mg/kg	0.0052	0.00018	1		06/10/22 23:49	74-87-3	
2-Chlorotoluene	ND	mg/kg	0.0052	0.00041	1		06/10/22 23:49	95-49-8	
4-Chlorotoluene	ND	mg/kg	0.0052	0.00041	1		06/10/22 23:49	106-43-4	
Dibromochloromethane	ND	mg/kg	0.0052	0.00021	1		06/10/22 23:49	124-48-1	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.0052	0.00024	1		06/10/22 23:49	106-93-4	
Dibromomethane	ND	mg/kg	0.0052	0.00018	1		06/10/22 23:49	74-95-3	
1,2-Dichlorobenzene	ND	mg/kg	0.0052	0.00035	1		06/10/22 23:49	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.0052	0.00043	1		06/10/22 23:49	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.0052	0.00040	1		06/10/22 23:49	106-46-7	
trans-1,4-Dichloro-2-butene	ND	mg/kg	0.10	0.00036	1		06/10/22 23:49	110-57-6	
Dichlorodifluoromethane	ND	mg/kg	0.0052	0.00028	1		06/10/22 23:49	75-71-8	
1,1-Dichloroethane	ND	mg/kg	0.0052	0.00032	1		06/10/22 23:49	75-34-3	
1,2-Dichloroethane	ND	mg/kg	0.0052	0.00027	1		06/10/22 23:49	107-06-2	
1,1-Dichloroethene	ND	mg/kg	0.0052	0.00028	1		06/10/22 23:49	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.0052	0.00033	1		06/10/22 23:49	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.0052	0.00046	1		06/10/22 23:49	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.0052	0.00031	1		06/10/22 23:49	78-87-5	
1,3-Dichloropropane	ND	mg/kg	0.0052	0.00019	1		06/10/22 23:49	142-28-9	
2,2-Dichloropropane	ND	mg/kg	0.0052	0.00041	1		06/10/22 23:49	594-20-7	
1,1-Dichloropropene	ND	mg/kg	0.0052	0.00043	1		06/10/22 23:49	563-58-6	
cis-1,3-Dichloropropene	ND	mg/kg	0.0052	0.00022	1		06/10/22 23:49	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.0052	0.00023	1		06/10/22 23:49	10061-02-6	
Ethylbenzene	ND	mg/kg	0.0052	0.00043	1		06/10/22 23:49	100-41-4	
Ethyl methacrylate	ND	mg/kg	0.10	0.00019	1		06/10/22 23:49	97-63-2	
Hexachloro-1,3-butadiene	ND	mg/kg	0.0052	0.00046	1		06/10/22 23:49	87-68-3	

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### ANALYTICAL RESULTS

Project: MI City - Borrow Source

Pace Project No.: 50318336

**Sample: Borrow-Topsoil-1**      **Lab ID: 50318336001**      Collected: 06/07/22 13:15      Received: 06/08/22 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV 5035A VOA</b>									
Analytical Method: EPA 8260									
Initial Volume/Weight: 5.589 g Final Volume/Weight: 5 mL									
Pace Analytical Services - Indianapolis									
n-Hexane	ND	mg/kg	0.0052	0.00023	1		06/10/22 23:49	110-54-3	
2-Hexanone	ND	mg/kg	0.10	0.0011	1		06/10/22 23:49	591-78-6	
Iodomethane	ND	mg/kg	0.10	0.00030	1		06/10/22 23:49	74-88-4	
Isopropylbenzene (Cumene)	ND	mg/kg	0.0052	0.00044	1		06/10/22 23:49	98-82-8	
p-Isopropyltoluene	ND	mg/kg	0.0052	0.00049	1		06/10/22 23:49	99-87-6	
Methylene Chloride	ND	mg/kg	0.021	0.00051	1		06/10/22 23:49	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.026	0.00098	1		06/10/22 23:49	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.0052	0.00020	1		06/10/22 23:49	1634-04-4	
Naphthalene	ND	mg/kg	0.0052	0.00080	1		06/10/22 23:49	91-20-3	
n-Propylbenzene	ND	mg/kg	0.0052	0.00045	1		06/10/22 23:49	103-65-1	
Styrene	ND	mg/kg	0.0052	0.00038	1		06/10/22 23:49	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0052	0.00025	1		06/10/22 23:49	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0052	0.00027	1		06/10/22 23:49	79-34-5	
Tetrachloroethene	ND	mg/kg	0.0052	0.00042	1		06/10/22 23:49	127-18-4	
Toluene	ND	mg/kg	0.0052	0.00070	1		06/10/22 23:49	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.0052	0.00036	1		06/10/22 23:49	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.0052	0.00044	1		06/10/22 23:49	120-82-1	
1,1,1-Trichloroethane	ND	mg/kg	0.0052	0.00037	1		06/10/22 23:49	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.0052	0.00022	1		06/10/22 23:49	79-00-5	
Trichloroethene	ND	mg/kg	0.0052	0.00039	1		06/10/22 23:49	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.0052	0.00017	1		06/10/22 23:49	75-69-4	
1,2,3-Trichloropropane	ND	mg/kg	0.0052	0.00028	1		06/10/22 23:49	96-18-4	
1,2,4-Trimethylbenzene	ND	mg/kg	0.0052	0.00045	1		06/10/22 23:49	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.0052	0.00041	1		06/10/22 23:49	108-67-8	
Vinyl acetate	ND	mg/kg	0.10	0.00050	1		06/10/22 23:49	108-05-4	L1
Vinyl chloride	ND	mg/kg	0.0052	0.00018	1		06/10/22 23:49	75-01-4	
Xylene (Total)	ND	mg/kg	0.010	0.00044	1		06/10/22 23:49	1330-20-7	
<b>Surrogates</b>									
Dibromofluoromethane (S)	105	%	62-146		1		06/10/22 23:49	1868-53-7	
Toluene-d8 (S)	106	%	68-143		1		06/10/22 23:49	2037-26-5	
4-Bromofluorobenzene (S)	93	%	63-129		1		06/10/22 23:49	460-00-4	

**Percent Moisture**

Analytical Method: SM 2540G

Pace Analytical Services - Indianapolis

Percent Moisture	<b>14.7</b>	%	0.10	0.10	1		06/09/22 09:40		N2
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**9045 pH Soil**

Analytical Method: EPA 9045

Pace Analytical Services - Indianapolis

pH at 25 Degrees C	<b>6.7</b>	Std. Units	0.10	0.10	1		06/08/22 16:39		H3
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## ANALYTICAL RESULTS

Project: MI City - Borrow Source

Pace Project No.: 50318336

**Sample: Borrow-Topsoil-2**      **Lab ID: 50318336002**      Collected: 06/07/22 13:30      Received: 06/08/22 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8081 GCS Pesticide Solids</b>									
Analytical Method: EPA 8081    Preparation Method: EPA 3546									
Initial Volume/Weight: 20.2 g    Final Volume/Weight: 10 mL									
Pace Analytical Services - Indianapolis									
Aldrin	ND	mg/kg	0.0028	0.00055	1	06/13/22 10:37	06/13/22 18:33	309-00-2	
alpha-BHC	ND	mg/kg	0.0028	0.00059	1	06/13/22 10:37	06/13/22 18:33	319-84-6	
beta-BHC	ND	mg/kg	0.0028	0.00054	1	06/13/22 10:37	06/13/22 18:33	319-85-7	
delta-BHC	ND	mg/kg	0.0028	0.00075	1	06/13/22 10:37	06/13/22 18:33	319-86-8	
gamma-BHC (Lindane)	ND	mg/kg	0.0028	0.00052	1	06/13/22 10:37	06/13/22 18:33	58-89-9	
Chlordane (Technical)	ND	mg/kg	0.057	0.012	1	06/13/22 10:37	06/13/22 18:33	57-74-9	
alpha-Chlordane	ND	mg/kg	0.0028	0.00050	1	06/13/22 10:37	06/13/22 18:33	5103-71-9	
gamma-Chlordane	ND	mg/kg	0.0028	0.00060	1	06/13/22 10:37	06/13/22 18:33	5103-74-2	
4,4'-DDD	ND	mg/kg	0.0057	0.0011	1	06/13/22 10:37	06/13/22 18:33	72-54-8	
4,4'-DDE	ND	mg/kg	0.0057	0.00094	1	06/13/22 10:37	06/13/22 18:33	72-55-9	
4,4'-DDT	ND	mg/kg	0.0057	0.0018	1	06/13/22 10:37	06/13/22 18:33	50-29-3	
Dieldrin	ND	mg/kg	0.0057	0.0010	1	06/13/22 10:37	06/13/22 18:33	60-57-1	
Endosulfan I	ND	mg/kg	0.0028	0.00047	1	06/13/22 10:37	06/13/22 18:33	959-98-8	
Endosulfan II	ND	mg/kg	0.0057	0.00093	1	06/13/22 10:37	06/13/22 18:33	33213-65-9	
Endosulfan sulfate	ND	mg/kg	0.0057	0.0011	1	06/13/22 10:37	06/13/22 18:33	1031-07-8	
Endrin	ND	mg/kg	0.0057	0.0010	1	06/13/22 10:37	06/13/22 18:33	72-20-8	
Endrin aldehyde	ND	mg/kg	0.0057	0.0013	1	06/13/22 10:37	06/13/22 18:33	7421-93-4	
Endrin ketone	ND	mg/kg	0.0057	0.0014	1	06/13/22 10:37	06/13/22 18:33	53494-70-5	
Heptachlor	ND	mg/kg	0.0028	0.00051	1	06/13/22 10:37	06/13/22 18:33	76-44-8	
Heptachlor epoxide	ND	mg/kg	0.0028	0.00048	1	06/13/22 10:37	06/13/22 18:33	1024-57-3	
Methoxychlor	ND	mg/kg	0.028	0.0065	1	06/13/22 10:37	06/13/22 18:33	72-43-5	
Toxaphene	ND	mg/kg	0.057	0.020	1	06/13/22 10:37	06/13/22 18:33	8001-35-2	
<b>Surrogates</b>									
Decachlorobiphenyl (S)	69	%	10-147		1	06/13/22 10:37	06/13/22 18:33	2051-24-3	

### 8082 PCB Solids

Analytical Method: EPA 8082    Preparation Method: EPA 3546

Initial Volume/Weight: 15.4 g    Final Volume/Weight: 10 mL

Pace Analytical Services - Indianapolis

PCB-1016 (Aroclor 1016)	ND	mg/kg	0.11	0.0042	1	06/08/22 22:26	06/09/22 17:41	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	mg/kg	0.11	0.0053	1	06/08/22 22:26	06/09/22 17:41	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	mg/kg	0.11	0.0058	1	06/08/22 22:26	06/09/22 17:41	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	mg/kg	0.11	0.0049	1	06/08/22 22:26	06/09/22 17:41	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	mg/kg	0.11	0.0034	1	06/08/22 22:26	06/09/22 17:41	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	mg/kg	0.11	0.0050	1	06/08/22 22:26	06/09/22 17:41	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	mg/kg	0.11	0.0053	1	06/08/22 22:26	06/09/22 17:41	11096-82-5	
<b>Surrogates</b>									
Tetrachloro-m-xylene (S)	49	%	36-112		1	06/08/22 22:26	06/09/22 17:41	877-09-8	

### 6010 MET ICP

Analytical Method: EPA 6010    Preparation Method: EPA 3050

Initial Volume/Weight: 1.07 g    Final Volume/Weight: 50 mL

Pace Analytical Services - Indianapolis

Arsenic	<b>12.6</b>	mg/kg	1.1	0.18	1	06/14/22 16:27	06/14/22 22:39	7440-38-2	
Barium	<b>70.3</b>	mg/kg	1.1	0.20	1	06/14/22 16:27	06/14/22 22:39	7440-39-3	

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## ANALYTICAL RESULTS

Project: MI City - Borrow Source

Pace Project No.: 50318336

**Sample: Borrow-Topsoil-2**      **Lab ID: 50318336002**      Collected: 06/07/22 13:30      Received: 06/08/22 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010    Preparation Method: EPA 3050									
Initial Volume/Weight: 1.07 g    Final Volume/Weight: 50 mL									
Pace Analytical Services - Indianapolis									
Cadmium	<b>0.17J</b>	mg/kg	0.54	0.031	1	06/14/22 16:27	06/14/22 22:39	7440-43-9	
Chromium	<b>11.7</b>	mg/kg	1.1	0.18	1	06/14/22 16:27	06/14/22 22:39	7440-47-3	
Lead	<b>16.8</b>	mg/kg	1.1	0.43	1	06/14/22 16:27	06/14/22 22:39	7439-92-1	
Selenium	<b>1.3</b>	mg/kg	1.1	0.34	1	06/14/22 16:27	06/14/22 22:39	7782-49-2	
Silver	ND	mg/kg	0.54	0.068	1	06/14/22 16:27	06/14/22 22:39	7440-22-4	
<b>7471 Mercury</b>									
Analytical Method: EPA 7471    Preparation Method: EPA 7471									
Initial Volume/Weight: 0.295 g    Final Volume/Weight: 50 mL									
Pace Analytical Services - Indianapolis									
Mercury	<b>0.23J</b>	mg/kg	0.23	0.022	1	06/10/22 12:43	06/12/22 18:28	7439-97-6	
<b>8270 SVOC FS Soil</b>									
Analytical Method: EPA 8270    Preparation Method: EPA 3546									
Initial Volume/Weight: 30.2 g    Final Volume/Weight: 1 mL									
Pace Analytical Services - Indianapolis									
Acenaphthene	ND	mg/kg	0.38	0.10	1	06/09/22 12:01	06/11/22 11:45	83-32-9	
Acenaphthylene	ND	mg/kg	0.38	0.11	1	06/09/22 12:01	06/11/22 11:45	208-96-8	
Anthracene	ND	mg/kg	0.38	0.15	1	06/09/22 12:01	06/11/22 11:45	120-12-7	
Benzo(a)anthracene	ND	mg/kg	0.38	0.11	1	06/09/22 12:01	06/11/22 11:45	56-55-3	
Benzo(a)pyrene	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:45	50-32-8	
Benzo(b)fluoranthene	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:45	205-99-2	
Benzo(g,h,i)perylene	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:45	191-24-2	
Benzo(k)fluoranthene	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:45	207-08-9	
Benzyl alcohol	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:45	100-51-6	
4-Bromophenylphenyl ether	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:45	101-55-3	
Butylbenzylphthalate	ND	mg/kg	0.38	0.21	1	06/09/22 12:01	06/11/22 11:45	85-68-7	
4-Chloro-3-methylphenol	ND	mg/kg	0.38	0.15	1	06/09/22 12:01	06/11/22 11:45	59-50-7	
4-Chloroaniline	ND	mg/kg	0.38	0.099	1	06/09/22 12:01	06/11/22 11:45	106-47-8	
bis(2-Chloroethoxy)methane	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:45	111-91-1	
bis(2-Chloroethyl) ether	ND	mg/kg	0.38	0.15	1	06/09/22 12:01	06/11/22 11:45	111-44-4	
bis(2chloro1methylethyl) ether	ND	mg/kg	0.38	0.13	1	06/09/22 12:01	06/11/22 11:45	108-60-1	
2-Chloronaphthalene	ND	mg/kg	0.38	0.11	1	06/09/22 12:01	06/11/22 11:45	91-58-7	
2-Chlorophenol	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:45	95-57-8	
4-Chlorophenylphenyl ether	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:45	7005-72-3	
Chrysene	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:45	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:45	53-70-3	
Dibenzofuran	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:45	132-64-9	
3,3'-Dichlorobenzidine	ND	mg/kg	0.77	0.13	1	06/09/22 12:01	06/11/22 11:45	91-94-1	
2,4-Dichlorophenol	ND	mg/kg	0.38	0.13	1	06/09/22 12:01	06/11/22 11:45	120-83-2	
Diethylphthalate	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:45	84-66-2	
2,4-Dimethylphenol	ND	mg/kg	0.38	0.13	1	06/09/22 12:01	06/11/22 11:45	105-67-9	
Dimethylphthalate	ND	mg/kg	0.38	0.13	1	06/09/22 12:01	06/11/22 11:45	131-11-3	
Di-n-butylphthalate	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:45	84-74-2	
4,6-Dinitro-2-methylphenol	ND	mg/kg	0.77	0.23	1	06/09/22 12:01	06/11/22 11:45	534-52-1	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: MI City - Borrow Source

Pace Project No.: 50318336

**Sample: Borrow-Topsoil-2**      **Lab ID: 50318336002**      Collected: 06/07/22 13:30      Received: 06/08/22 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 SVOC FS Soil</b>									
Analytical Method: EPA 8270    Preparation Method: EPA 3546									
Initial Volume/Weight: 30.2 g    Final Volume/Weight: 1 mL									
Pace Analytical Services - Indianapolis									
2,4-Dinitrophenol	ND	mg/kg	1.9	0.21	1	06/09/22 12:01	06/11/22 11:45	51-28-5	
2,4-Dinitrotoluene	ND	mg/kg	0.38	0.13	1	06/09/22 12:01	06/11/22 11:45	121-14-2	
2,6-Dinitrotoluene	ND	mg/kg	0.38	0.11	1	06/09/22 12:01	06/11/22 11:45	606-20-2	
Di-n-octylphthalate	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:45	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:45	117-81-7	
Fluoranthene	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:45	206-44-0	
Fluorene	ND	mg/kg	0.38	0.13	1	06/09/22 12:01	06/11/22 11:45	86-73-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.38	0.10	1	06/09/22 12:01	06/11/22 11:45	87-68-3	
Hexachlorobenzene	ND	mg/kg	0.38	0.095	1	06/09/22 12:01	06/11/22 11:45	118-74-1	
Hexachlorocyclopentadiene	ND	mg/kg	0.38	0.18	1	06/09/22 12:01	06/11/22 11:45	77-47-4	
Hexachloroethane	ND	mg/kg	0.38	0.11	1	06/09/22 12:01	06/11/22 11:45	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:45	193-39-5	
Isophorone	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:45	78-59-1	
1-Methylnaphthalene	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:45	90-12-0	
2-Methylnaphthalene	ND	mg/kg	0.38	0.11	1	06/09/22 12:01	06/11/22 11:45	91-57-6	
2-Methylphenol(o-Cresol)	ND	mg/kg	0.38	0.16	1	06/09/22 12:01	06/11/22 11:45	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	0.38	0.16	1	06/09/22 12:01	06/11/22 11:45		
Naphthalene	ND	mg/kg	0.38	0.11	1	06/09/22 12:01	06/11/22 11:45	91-20-3	
2-Nitroaniline	ND	mg/kg	0.38	0.15	1	06/09/22 12:01	06/11/22 11:45	88-74-4	
3-Nitroaniline	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:45	99-09-2	
4-Nitroaniline	ND	mg/kg	0.38	0.15	1	06/09/22 12:01	06/11/22 11:45	100-01-6	
Nitrobenzene	ND	mg/kg	0.38	0.13	1	06/09/22 12:01	06/11/22 11:45	98-95-3	
2-Nitrophenol	ND	mg/kg	0.38	0.15	1	06/09/22 12:01	06/11/22 11:45	88-75-5	
4-Nitrophenol	ND	mg/kg	1.9	0.29	1	06/09/22 12:01	06/11/22 11:45	100-02-7	
N-Nitroso-di-n-propylamine	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:45	621-64-7	
N-Nitrosodiphenylamine	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:45	86-30-6	
Pentachlorophenol	ND	mg/kg	1.9	0.29	1	06/09/22 12:01	06/11/22 11:45	87-86-5	
Phenanthrene	ND	mg/kg	0.38	0.15	1	06/09/22 12:01	06/11/22 11:45	85-01-8	
Phenol	ND	mg/kg	0.38	0.14	1	06/09/22 12:01	06/11/22 11:45	108-95-2	
Pyrene	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:45	129-00-0	
2,4,5-Trichlorophenol	ND	mg/kg	0.38	0.13	1	06/09/22 12:01	06/11/22 11:45	95-95-4	
2,4,6-Trichlorophenol	ND	mg/kg	0.38	0.12	1	06/09/22 12:01	06/11/22 11:45	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	75	%	35-110		1	06/09/22 12:01	06/11/22 11:45	4165-60-0	
2-Fluorobiphenyl (S)	70	%	36-100		1	06/09/22 12:01	06/11/22 11:45	321-60-8	
p-Terphenyl-d14 (S)	81	%	29-117		1	06/09/22 12:01	06/11/22 11:45	1718-51-0	
Phenol-d5 (S)	96	%	35-115		1	06/09/22 12:01	06/11/22 11:45	4165-62-2	
2-Fluorophenol (S)	79	%	22-114		1	06/09/22 12:01	06/11/22 11:45	367-12-4	
2,4,6-Tribromophenol (S)	85	%	10-123		1	06/09/22 12:01	06/11/22 11:45	118-79-6	

## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: MI City - Borrow Source

Pace Project No.: 50318336

Sample: Borrow-Topsoil-2 Lab ID: 50318336002 Collected: 06/07/22 13:30 Received: 06/08/22 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV 5035A VOA</b> Analytical Method: EPA 8260 Initial Volume/Weight: 6.128 g Final Volume/Weight: 5 mL Pace Analytical Services - Indianapolis									
Acetone	0.047J	mg/kg	0.094	0.0037	1		06/11/22 04:00	67-64-1	
Acrolein	ND	mg/kg	0.094	0.0026	1		06/11/22 04:00	107-02-8	
Acrylonitrile	ND	mg/kg	0.094	0.00095	1		06/11/22 04:00	107-13-1	
Benzene	ND	mg/kg	0.0047	0.00032	1		06/11/22 04:00	71-43-2	
Bromobenzene	ND	mg/kg	0.0047	0.00031	1		06/11/22 04:00	108-86-1	
Bromochloromethane	ND	mg/kg	0.0047	0.00016	1		06/11/22 04:00	74-97-5	
Bromodichloromethane	ND	mg/kg	0.0047	0.00020	1		06/11/22 04:00	75-27-4	
Bromoform	ND	mg/kg	0.0047	0.00014	1		06/11/22 04:00	75-25-2	
Bromomethane	ND	mg/kg	0.0047	0.00026	1		06/11/22 04:00	74-83-9	
2-Butanone (MEK)	ND	mg/kg	0.023	0.00065	1		06/11/22 04:00	78-93-3	
n-Butylbenzene	ND	mg/kg	0.0047	0.00039	1		06/11/22 04:00	104-51-8	
sec-Butylbenzene	ND	mg/kg	0.0047	0.00041	1		06/11/22 04:00	135-98-8	
tert-Butylbenzene	ND	mg/kg	0.0047	0.00043	1		06/11/22 04:00	98-06-6	
Carbon disulfide	ND	mg/kg	0.0094	0.00033	1		06/11/22 04:00	75-15-0	
Carbon tetrachloride	ND	mg/kg	0.0047	0.00028	1		06/11/22 04:00	56-23-5	
Chlorobenzene	ND	mg/kg	0.0047	0.00032	1		06/11/22 04:00	108-90-7	
Chloroethane	ND	mg/kg	0.0047	0.00015	1		06/11/22 04:00	75-00-3	
Chloroform	ND	mg/kg	0.0047	0.00057	1		06/11/22 04:00	67-66-3	
Chloromethane	ND	mg/kg	0.0047	0.00016	1		06/11/22 04:00	74-87-3	
2-Chlorotoluene	ND	mg/kg	0.0047	0.00037	1		06/11/22 04:00	95-49-8	
4-Chlorotoluene	ND	mg/kg	0.0047	0.00037	1		06/11/22 04:00	106-43-4	
Dibromochloromethane	ND	mg/kg	0.0047	0.00019	1		06/11/22 04:00	124-48-1	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.0047	0.00021	1		06/11/22 04:00	106-93-4	
Dibromomethane	ND	mg/kg	0.0047	0.00016	1		06/11/22 04:00	74-95-3	
1,2-Dichlorobenzene	ND	mg/kg	0.0047	0.00031	1		06/11/22 04:00	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.0047	0.00039	1		06/11/22 04:00	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.0047	0.00036	1		06/11/22 04:00	106-46-7	
trans-1,4-Dichloro-2-butene	ND	mg/kg	0.094	0.00032	1		06/11/22 04:00	110-57-6	
Dichlorodifluoromethane	ND	mg/kg	0.0047	0.00025	1		06/11/22 04:00	75-71-8	
1,1-Dichloroethane	ND	mg/kg	0.0047	0.00029	1		06/11/22 04:00	75-34-3	
1,2-Dichloroethane	ND	mg/kg	0.0047	0.00025	1		06/11/22 04:00	107-06-2	
1,1-Dichloroethene	ND	mg/kg	0.0047	0.00025	1		06/11/22 04:00	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.0047	0.00029	1		06/11/22 04:00	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.0047	0.00041	1		06/11/22 04:00	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.0047	0.00028	1		06/11/22 04:00	78-87-5	
1,3-Dichloropropane	ND	mg/kg	0.0047	0.00017	1		06/11/22 04:00	142-28-9	
2,2-Dichloropropane	ND	mg/kg	0.0047	0.00037	1		06/11/22 04:00	594-20-7	
1,1-Dichloropropene	ND	mg/kg	0.0047	0.00039	1		06/11/22 04:00	563-58-6	
cis-1,3-Dichloropropene	ND	mg/kg	0.0047	0.00019	1		06/11/22 04:00	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.0047	0.00020	1		06/11/22 04:00	10061-02-6	
Ethylbenzene	ND	mg/kg	0.0047	0.00038	1		06/11/22 04:00	100-41-4	
Ethyl methacrylate	ND	mg/kg	0.094	0.00017	1		06/11/22 04:00	97-63-2	
Hexachloro-1,3-butadiene	ND	mg/kg	0.0047	0.00041	1		06/11/22 04:00	87-68-3	

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### ANALYTICAL RESULTS

Project: MI City - Borrow Source

Pace Project No.: 50318336

**Sample: Borrow-Topsoil-2**      **Lab ID: 50318336002**      Collected: 06/07/22 13:30      Received: 06/08/22 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV 5035A VOA</b>									
Analytical Method: EPA 8260									
Initial Volume/Weight: 6.128 g Final Volume/Weight: 5 mL									
Pace Analytical Services - Indianapolis									
n-Hexane	ND	mg/kg	0.0047	0.00021	1		06/11/22 04:00	110-54-3	
2-Hexanone	ND	mg/kg	0.094	0.00098	1		06/11/22 04:00	591-78-6	
Iodomethane	ND	mg/kg	0.094	0.00027	1		06/11/22 04:00	74-88-4	
Isopropylbenzene (Cumene)	ND	mg/kg	0.0047	0.00040	1		06/11/22 04:00	98-82-8	
p-Isopropyltoluene	ND	mg/kg	0.0047	0.00043	1		06/11/22 04:00	99-87-6	
Methylene Chloride	ND	mg/kg	0.019	0.00045	1		06/11/22 04:00	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.023	0.00088	1		06/11/22 04:00	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.0047	0.00018	1		06/11/22 04:00	1634-04-4	
Naphthalene	ND	mg/kg	0.0047	0.00071	1		06/11/22 04:00	91-20-3	
n-Propylbenzene	ND	mg/kg	0.0047	0.00040	1		06/11/22 04:00	103-65-1	
Styrene	ND	mg/kg	0.0047	0.00034	1		06/11/22 04:00	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0047	0.00023	1		06/11/22 04:00	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0047	0.00024	1		06/11/22 04:00	79-34-5	
Tetrachloroethene	ND	mg/kg	0.0047	0.00037	1		06/11/22 04:00	127-18-4	
Toluene	ND	mg/kg	0.0047	0.00062	1		06/11/22 04:00	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.0047	0.00033	1		06/11/22 04:00	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.0047	0.00039	1		06/11/22 04:00	120-82-1	
1,1,1-Trichloroethane	ND	mg/kg	0.0047	0.00033	1		06/11/22 04:00	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.0047	0.00019	1		06/11/22 04:00	79-00-5	
Trichloroethene	ND	mg/kg	0.0047	0.00035	1		06/11/22 04:00	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.0047	0.00016	1		06/11/22 04:00	75-69-4	
1,2,3-Trichloropropane	ND	mg/kg	0.0047	0.00025	1		06/11/22 04:00	96-18-4	
1,2,4-Trimethylbenzene	ND	mg/kg	0.0047	0.00041	1		06/11/22 04:00	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.0047	0.00037	1		06/11/22 04:00	108-67-8	
Vinyl acetate	ND	mg/kg	0.094	0.00045	1		06/11/22 04:00	108-05-4	L1
Vinyl chloride	ND	mg/kg	0.0047	0.00016	1		06/11/22 04:00	75-01-4	
Xylene (Total)	ND	mg/kg	0.0094	0.00040	1		06/11/22 04:00	1330-20-7	
<b>Surrogates</b>									
Dibromofluoromethane (S)	107	%	62-146		1		06/11/22 04:00	1868-53-7	
Toluene-d8 (S)	105	%	68-143		1		06/11/22 04:00	2037-26-5	
4-Bromofluorobenzene (S)	94	%	63-129		1		06/11/22 04:00	460-00-4	

**Percent Moisture**

Analytical Method: SM 2540G

Pace Analytical Services - Indianapolis

Percent Moisture	<b>13.1</b>	%	0.10	0.10	1		06/09/22 09:40		N2
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**9045 pH Soil**

Analytical Method: EPA 9045

Pace Analytical Services - Indianapolis

pH at 25 Degrees C	<b>6.7</b>	Std. Units	0.10	0.10	1		06/08/22 16:41		H3
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## ANALYTICAL RESULTS

Project: MI City - Borrow Source

Pace Project No.: 50318336

**Sample:** Trip Blank      **Lab ID:** 50318336003      Collected: 06/07/22 08:00      Received: 06/08/22 08:50      Matrix: Solid

*Results reported on a "wet-weight" basis*

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV 5035A VOA</b>									
Analytical Method: EPA 8260									
Initial Volume/Weight: 5 g Final Volume/Weight: 5 mL									
Pace Analytical Services - Indianapolis									
Acetone	ND	mg/kg	0.10	0.0039	1		06/11/22 04:31	67-64-1	
Acrolein	ND	mg/kg	0.10	0.0027	1		06/11/22 04:31	107-02-8	
Acrylonitrile	ND	mg/kg	0.10	0.0010	1		06/11/22 04:31	107-13-1	
Benzene	ND	mg/kg	0.0050	0.00034	1		06/11/22 04:31	71-43-2	
Bromobenzene	ND	mg/kg	0.0050	0.00033	1		06/11/22 04:31	108-86-1	
Bromochloromethane	ND	mg/kg	0.0050	0.00018	1		06/11/22 04:31	74-97-5	
Bromodichloromethane	ND	mg/kg	0.0050	0.00021	1		06/11/22 04:31	75-27-4	
Bromoform	ND	mg/kg	0.0050	0.00014	1		06/11/22 04:31	75-25-2	
Bromomethane	ND	mg/kg	0.0050	0.00027	1		06/11/22 04:31	74-83-9	
2-Butanone (MEK)	ND	mg/kg	0.025	0.00069	1		06/11/22 04:31	78-93-3	
n-Butylbenzene	ND	mg/kg	0.0050	0.00042	1		06/11/22 04:31	104-51-8	
sec-Butylbenzene	ND	mg/kg	0.0050	0.00044	1		06/11/22 04:31	135-98-8	
tert-Butylbenzene	ND	mg/kg	0.0050	0.00045	1		06/11/22 04:31	98-06-6	
Carbon disulfide	ND	mg/kg	0.010	0.00035	1		06/11/22 04:31	75-15-0	
Carbon tetrachloride	ND	mg/kg	0.0050	0.00030	1		06/11/22 04:31	56-23-5	
Chlorobenzene	ND	mg/kg	0.0050	0.00034	1		06/11/22 04:31	108-90-7	
Chloroethane	ND	mg/kg	0.0050	0.00016	1		06/11/22 04:31	75-00-3	
Chloroform	ND	mg/kg	0.0050	0.00061	1		06/11/22 04:31	67-66-3	
Chloromethane	ND	mg/kg	0.0050	0.00017	1		06/11/22 04:31	74-87-3	
2-Chlorotoluene	ND	mg/kg	0.0050	0.00039	1		06/11/22 04:31	95-49-8	
4-Chlorotoluene	ND	mg/kg	0.0050	0.00039	1		06/11/22 04:31	106-43-4	
Dibromochloromethane	ND	mg/kg	0.0050	0.00020	1		06/11/22 04:31	124-48-1	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.0050	0.00023	1		06/11/22 04:31	106-93-4	
Dibromomethane	ND	mg/kg	0.0050	0.00018	1		06/11/22 04:31	74-95-3	
1,2-Dichlorobenzene	ND	mg/kg	0.0050	0.00033	1		06/11/22 04:31	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.0050	0.00041	1		06/11/22 04:31	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.0050	0.00038	1		06/11/22 04:31	106-46-7	
trans-1,4-Dichloro-2-butene	ND	mg/kg	0.10	0.00034	1		06/11/22 04:31	110-57-6	
Dichlorodifluoromethane	ND	mg/kg	0.0050	0.00026	1		06/11/22 04:31	75-71-8	
1,1-Dichloroethane	ND	mg/kg	0.0050	0.00031	1		06/11/22 04:31	75-34-3	
1,2-Dichloroethane	ND	mg/kg	0.0050	0.00026	1		06/11/22 04:31	107-06-2	
1,1-Dichloroethene	ND	mg/kg	0.0050	0.00027	1		06/11/22 04:31	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.0050	0.00031	1		06/11/22 04:31	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.0050	0.00044	1		06/11/22 04:31	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.0050	0.00029	1		06/11/22 04:31	78-87-5	
1,3-Dichloropropane	ND	mg/kg	0.0050	0.00018	1		06/11/22 04:31	142-28-9	
2,2-Dichloropropane	ND	mg/kg	0.0050	0.00039	1		06/11/22 04:31	594-20-7	
1,1-Dichloropropene	ND	mg/kg	0.0050	0.00041	1		06/11/22 04:31	563-58-6	
cis-1,3-Dichloropropene	ND	mg/kg	0.0050	0.00021	1		06/11/22 04:31	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.0050	0.00022	1		06/11/22 04:31	10061-02-6	
Ethylbenzene	ND	mg/kg	0.0050	0.00041	1		06/11/22 04:31	100-41-4	
Ethyl methacrylate	ND	mg/kg	0.10	0.00018	1		06/11/22 04:31	97-63-2	
Hexachloro-1,3-butadiene	ND	mg/kg	0.0050	0.00044	1		06/11/22 04:31	87-68-3	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: MI City - Borrow Source

Pace Project No.: 50318336

Sample: Trip Blank Lab ID: 50318336003 Collected: 06/07/22 08:00 Received: 06/08/22 08:50 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV 5035A VOA</b>									
Analytical Method: EPA 8260									
Initial Volume/Weight: 5 g Final Volume/Weight: 5 mL									
Pace Analytical Services - Indianapolis									
n-Hexane	ND	mg/kg	0.0050	0.00022	1		06/11/22 04:31	110-54-3	
2-Hexanone	ND	mg/kg	0.10	0.0010	1		06/11/22 04:31	591-78-6	
Iodomethane	ND	mg/kg	0.10	0.00028	1		06/11/22 04:31	74-88-4	
Isopropylbenzene (Cumene)	ND	mg/kg	0.0050	0.00042	1		06/11/22 04:31	98-82-8	
p-Isopropyltoluene	ND	mg/kg	0.0050	0.00046	1		06/11/22 04:31	99-87-6	
Methylene Chloride	<b>0.0017J</b>	mg/kg	0.020	0.00048	1		06/11/22 04:31	75-09-2	B
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.025	0.00094	1		06/11/22 04:31	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.0050	0.00019	1		06/11/22 04:31	1634-04-4	
Naphthalene	ND	mg/kg	0.0050	0.00076	1		06/11/22 04:31	91-20-3	
n-Propylbenzene	ND	mg/kg	0.0050	0.00042	1		06/11/22 04:31	103-65-1	
Styrene	ND	mg/kg	0.0050	0.00036	1		06/11/22 04:31	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0050	0.00024	1		06/11/22 04:31	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0050	0.00025	1		06/11/22 04:31	79-34-5	
Tetrachloroethene	ND	mg/kg	0.0050	0.00040	1		06/11/22 04:31	127-18-4	
Toluene	ND	mg/kg	0.0050	0.00066	1		06/11/22 04:31	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.0050	0.00035	1		06/11/22 04:31	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.0050	0.00042	1		06/11/22 04:31	120-82-1	
1,1,1-Trichloroethane	ND	mg/kg	0.0050	0.00036	1		06/11/22 04:31	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.0050	0.00021	1		06/11/22 04:31	79-00-5	
Trichloroethene	ND	mg/kg	0.0050	0.00037	1		06/11/22 04:31	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.0050	0.00017	1		06/11/22 04:31	75-69-4	
1,2,3-Trichloropropane	ND	mg/kg	0.0050	0.00026	1		06/11/22 04:31	96-18-4	
1,2,4-Trimethylbenzene	ND	mg/kg	0.0050	0.00043	1		06/11/22 04:31	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.0050	0.00039	1		06/11/22 04:31	108-67-8	
Vinyl acetate	ND	mg/kg	0.10	0.00048	1		06/11/22 04:31	108-05-4	L1
Vinyl chloride	ND	mg/kg	0.0050	0.00017	1		06/11/22 04:31	75-01-4	
Xylene (Total)	ND	mg/kg	0.010	0.00042	1		06/11/22 04:31	1330-20-7	
<b>Surrogates</b>									
Dibromofluoromethane (S)	106	%	62-146		1		06/11/22 04:31	1868-53-7	
Toluene-d8 (S)	99	%	68-143		1		06/11/22 04:31	2037-26-5	
4-Bromofluorobenzene (S)	104	%	63-129		1		06/11/22 04:31	460-00-4	

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**QUALITY CONTROL DATA**

Project: MI City - Borrow Source

Pace Project No.: 50318336

QC Batch: 680993

Analysis Method: EPA 7471

QC Batch Method: EPA 7471

Analysis Description: 7471 Mercury

Laboratory: Pace Analytical Services - Indianapolis

Associated Lab Samples: 50318336001

METHOD BLANK: 3134130

Matrix: Solid

Associated Lab Samples: 50318336001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.20	0.019	06/13/22 17:02	

LABORATORY CONTROL SAMPLE: 3134131

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	0.51	0.54	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3134132 3134133

Parameter	Units	3134132		3134133		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		50318275001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury	mg/kg	ND	0.62	0.61	0.60	0.69	92	110	75-125	15	20

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### QUALITY CONTROL DATA

Project: MI City - Borrow Source

Pace Project No.: 50318336

QC Batch: 681059

Analysis Method: EPA 7471

QC Batch Method: EPA 7471

Analysis Description: 7471 Mercury

Laboratory: Pace Analytical Services - Indianapolis

Associated Lab Samples: 50318336002

METHOD BLANK: 3134412

Matrix: Solid

Associated Lab Samples: 50318336002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.20	0.019	06/12/22 18:21	

LABORATORY CONTROL SAMPLE: 3134413

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	0.49	0.47	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3134414 3134415

Parameter	Units	3134414		3134415		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		50318442005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury	mg/kg	ND	0.57	0.65	0.63	0.70	106	107	75-125	11	20

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### QUALITY CONTROL DATA

Project: MI City - Borrow Source

Pace Project No.: 50318336

QC Batch: 681420

Analysis Method: EPA 6010

QC Batch Method: EPA 3050

Analysis Description: 6010 MET

Laboratory: Pace Analytical Services - Indianapolis

Associated Lab Samples: 50318336001, 50318336002

METHOD BLANK: 3136339

Matrix: Solid

Associated Lab Samples: 50318336001, 50318336002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/kg	ND	1.0	0.17	06/14/22 22:34	
Barium	mg/kg	ND	1.0	0.19	06/14/22 22:34	
Cadmium	mg/kg	ND	0.50	0.029	06/14/22 22:34	
Chromium	mg/kg	ND	1.0	0.17	06/14/22 22:34	
Lead	mg/kg	ND	1.0	0.40	06/14/22 22:34	
Selenium	mg/kg	ND	1.0	0.32	06/14/22 22:34	
Silver	mg/kg	ND	0.50	0.063	06/14/22 22:34	

LABORATORY CONTROL SAMPLE: 3136340

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	50	49.5	99	80-120	
Barium	mg/kg	50	51.9	104	80-120	
Cadmium	mg/kg	50	49.3	99	80-120	
Chromium	mg/kg	50	51.0	102	80-120	
Lead	mg/kg	50	48.8	98	80-120	
Selenium	mg/kg	50	50.2	100	80-120	
Silver	mg/kg	25	24.2	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3136341 3136342

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		50318660001 Result	Spike Conc.	Spike Conc.	MS Result						
Arsenic	mg/kg	8.3	45.2	45.8	49.1	50.7	90	93	75-125	3	20
Barium	mg/kg	90.5	45.2	45.8	143	147	117	123	75-125	2	20
Cadmium	mg/kg	ND	45.2	45.8	40.6	42.2	89	91	75-125	4	20
Chromium	mg/kg	14.5	45.2	45.8	57.7	59.8	95	99	75-125	4	20
Lead	mg/kg	24.9	45.2	45.8	50.8	51.3	57	58	75-125	1	20 M3
Selenium	mg/kg	ND	45.2	45.8	40.1	42.3	87	91	75-125	5	20
Silver	mg/kg	ND	22.6	22.9	20.1	20.8	89	91	75-125	4	20

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### QUALITY CONTROL DATA

Project: MI City - Borrow Source  
Pace Project No.: 50318336

QC Batch: 681185      Analysis Method: EPA 8260  
QC Batch Method: EPA 8260      Analysis Description: 8260 MSV 5035A Volatile Organics  
Laboratory: Pace Analytical Services - Indianapolis

Associated Lab Samples: 50318336001

METHOD BLANK: 3135344      Matrix: Solid

Associated Lab Samples: 50318336001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	mg/kg	ND	0.0050	0.00024	06/10/22 14:58	
1,1,1-Trichloroethane	mg/kg	ND	0.0050	0.00036	06/10/22 14:58	
1,1,2,2-Tetrachloroethane	mg/kg	ND	0.0050	0.00025	06/10/22 14:58	
1,1,2-Trichloroethane	mg/kg	ND	0.0050	0.00021	06/10/22 14:58	
1,1-Dichloroethane	mg/kg	ND	0.0050	0.00031	06/10/22 14:58	
1,1-Dichloroethene	mg/kg	ND	0.0050	0.00027	06/10/22 14:58	
1,1-Dichloropropene	mg/kg	ND	0.0050	0.00041	06/10/22 14:58	
1,2,3-Trichlorobenzene	mg/kg	ND	0.0050	0.00035	06/10/22 14:58	
1,2,3-Trichloropropane	mg/kg	ND	0.0050	0.00026	06/10/22 14:58	
1,2,4-Trichlorobenzene	mg/kg	ND	0.0050	0.00042	06/10/22 14:58	
1,2,4-Trimethylbenzene	mg/kg	ND	0.0050	0.00043	06/10/22 14:58	
1,2-Dibromoethane (EDB)	mg/kg	ND	0.0050	0.00023	06/10/22 14:58	
1,2-Dichlorobenzene	mg/kg	ND	0.0050	0.00033	06/10/22 14:58	
1,2-Dichloroethane	mg/kg	ND	0.0050	0.00026	06/10/22 14:58	
1,2-Dichloropropane	mg/kg	ND	0.0050	0.00029	06/10/22 14:58	
1,3,5-Trimethylbenzene	mg/kg	ND	0.0050	0.00039	06/10/22 14:58	
1,3-Dichlorobenzene	mg/kg	ND	0.0050	0.00041	06/10/22 14:58	
1,3-Dichloropropane	mg/kg	ND	0.0050	0.00018	06/10/22 14:58	
1,4-Dichlorobenzene	mg/kg	ND	0.0050	0.00038	06/10/22 14:58	
2,2-Dichloropropane	mg/kg	ND	0.0050	0.00039	06/10/22 14:58	
2-Butanone (MEK)	mg/kg	ND	0.025	0.00069	06/10/22 14:58	
2-Chlorotoluene	mg/kg	ND	0.0050	0.00039	06/10/22 14:58	
2-Hexanone	mg/kg	ND	0.10	0.0010	06/10/22 14:58	
4-Chlorotoluene	mg/kg	ND	0.0050	0.00039	06/10/22 14:58	
4-Methyl-2-pentanone (MIBK)	mg/kg	ND	0.025	0.00094	06/10/22 14:58	
Acetone	mg/kg	ND	0.10	0.0039	06/10/22 14:58	
Acrolein	mg/kg	ND	0.10	0.0027	06/10/22 14:58	
Acrylonitrile	mg/kg	ND	0.10	0.0010	06/10/22 14:58	
Benzene	mg/kg	ND	0.0050	0.00034	06/10/22 14:58	
Bromobenzene	mg/kg	ND	0.0050	0.00033	06/10/22 14:58	
Bromochloromethane	mg/kg	ND	0.0050	0.00018	06/10/22 14:58	
Bromodichloromethane	mg/kg	ND	0.0050	0.00021	06/10/22 14:58	
Bromoform	mg/kg	ND	0.0050	0.00014	06/10/22 14:58	
Bromomethane	mg/kg	ND	0.0050	0.00027	06/10/22 14:58	
Carbon disulfide	mg/kg	ND	0.010	0.00035	06/10/22 14:58	
Carbon tetrachloride	mg/kg	ND	0.0050	0.00030	06/10/22 14:58	
Chlorobenzene	mg/kg	ND	0.0050	0.00034	06/10/22 14:58	
Chloroethane	mg/kg	ND	0.0050	0.00016	06/10/22 14:58	
Chloroform	mg/kg	ND	0.0050	0.00061	06/10/22 14:58	
Chloromethane	mg/kg	ND	0.0050	0.00017	06/10/22 14:58	

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### QUALITY CONTROL DATA

Project: MI City - Borrow Source  
Pace Project No.: 50318336

METHOD BLANK: 3135344 Matrix: Solid  
Associated Lab Samples: 50318336001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
cis-1,2-Dichloroethene	mg/kg	ND	0.0050	0.00031	06/10/22 14:58	
cis-1,3-Dichloropropene	mg/kg	ND	0.0050	0.00021	06/10/22 14:58	
Dibromochloromethane	mg/kg	ND	0.0050	0.00020	06/10/22 14:58	
Dibromomethane	mg/kg	ND	0.0050	0.00018	06/10/22 14:58	
Dichlorodifluoromethane	mg/kg	ND	0.0050	0.00026	06/10/22 14:58	
Ethyl methacrylate	mg/kg	ND	0.10	0.00018	06/10/22 14:58	
Ethylbenzene	mg/kg	ND	0.0050	0.00041	06/10/22 14:58	
Hexachloro-1,3-butadiene	mg/kg	ND	0.0050	0.00044	06/10/22 14:58	
Iodomethane	mg/kg	ND	0.10	0.00028	06/10/22 14:58	
Isopropylbenzene (Cumene)	mg/kg	ND	0.0050	0.00042	06/10/22 14:58	
Methyl-tert-butyl ether	mg/kg	ND	0.0050	0.00019	06/10/22 14:58	
Methylene Chloride	mg/kg	0.0036J	0.020	0.00048	06/10/22 14:58	
n-Butylbenzene	mg/kg	ND	0.0050	0.00042	06/10/22 14:58	
n-Hexane	mg/kg	ND	0.0050	0.00022	06/10/22 14:58	
n-Propylbenzene	mg/kg	ND	0.0050	0.00042	06/10/22 14:58	
Naphthalene	mg/kg	ND	0.0050	0.00076	06/10/22 14:58	
p-Isopropyltoluene	mg/kg	ND	0.0050	0.00046	06/10/22 14:58	
sec-Butylbenzene	mg/kg	ND	0.0050	0.00044	06/10/22 14:58	
Styrene	mg/kg	ND	0.0050	0.00036	06/10/22 14:58	
tert-Butylbenzene	mg/kg	ND	0.0050	0.00045	06/10/22 14:58	
Tetrachloroethene	mg/kg	ND	0.0050	0.00040	06/10/22 14:58	
Toluene	mg/kg	ND	0.0050	0.00066	06/10/22 14:58	
trans-1,2-Dichloroethene	mg/kg	ND	0.0050	0.00044	06/10/22 14:58	
trans-1,3-Dichloropropene	mg/kg	ND	0.0050	0.00022	06/10/22 14:58	
trans-1,4-Dichloro-2-butene	mg/kg	ND	0.10	0.00034	06/10/22 14:58	
Trichloroethene	mg/kg	ND	0.0050	0.00037	06/10/22 14:58	
Trichlorofluoromethane	mg/kg	ND	0.0050	0.00017	06/10/22 14:58	
Vinyl acetate	mg/kg	ND	0.10	0.00048	06/10/22 14:58	
Vinyl chloride	mg/kg	ND	0.0050	0.00017	06/10/22 14:58	
Xylene (Total)	mg/kg	ND	0.010	0.00042	06/10/22 14:58	
4-Bromofluorobenzene (S)	%	103	63-129		06/10/22 14:58	
Dibromofluoromethane (S)	%	105	62-146		06/10/22 14:58	1d
Toluene-d8 (S)	%	97	68-143		06/10/22 14:58	

LABORATORY CONTROL SAMPLE: 3135345

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	mg/kg	0.05	0.043	87	73-121	
1,1,1-Trichloroethane	mg/kg	0.05	0.044	88	60-122	
1,1,2,2-Tetrachloroethane	mg/kg	0.05	0.041	81	60-129	
1,1,2-Trichloroethane	mg/kg	0.05	0.039	78	69-126	
1,1-Dichloroethane	mg/kg	0.05	0.043	85	62-124	
1,1-Dichloroethene	mg/kg	0.05	0.044	87	57-133	
1,1-Dichloropropene	mg/kg	0.05	0.044	87	69-135	

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### QUALITY CONTROL DATA

Project: MI City - Borrow Source

Pace Project No.: 50318336

LABORATORY CONTROL SAMPLE: 3135345

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,3-Trichlorobenzene	mg/kg	0.05	0.036	71	51-128	
1,2,3-Trichloropropane	mg/kg	0.05	0.043	85	68-120	
1,2,4-Trichlorobenzene	mg/kg	0.05	0.036	71	46-131	
1,2,4-Trimethylbenzene	mg/kg	0.05	0.039	77	57-119	
1,2-Dibromoethane (EDB)	mg/kg	0.05	0.042	84	62-134	
1,2-Dichlorobenzene	mg/kg	0.05	0.037	74	65-116	
1,2-Dichloroethane	mg/kg	0.05	0.046	92	63-127	
1,2-Dichloropropane	mg/kg	0.05	0.039	79	64-124	
1,3,5-Trimethylbenzene	mg/kg	0.05	0.039	78	58-118	
1,3-Dichlorobenzene	mg/kg	0.05	0.037	73	60-118	
1,3-Dichloropropane	mg/kg	0.05	0.041	82	74-123	
1,4-Dichlorobenzene	mg/kg	0.05	0.037	73	59-117	
2,2-Dichloropropane	mg/kg	0.05	0.044	88	49-130	
2-Butanone (MEK)	mg/kg	0.25	0.25	99	53-123	
2-Chlorotoluene	mg/kg	0.05	0.037	75	61-114	
2-Hexanone	mg/kg	0.25	0.24	95	50-126	
4-Chlorotoluene	mg/kg	0.05	0.037	75	60-119	
4-Methyl-2-pentanone (MIBK)	mg/kg	0.25	0.24	94	54-130	
Acetone	mg/kg	0.25	0.26	106	21-145	
Acrolein	mg/kg	1	1.3	132	22-129	L1
Acrylonitrile	mg/kg	0.25	0.23	94	61-125	
Benzene	mg/kg	0.05	0.039	77	65-124	
Bromobenzene	mg/kg	0.05	0.038	76	64-118	
Bromochloromethane	mg/kg	0.05	0.048	96	63-127	
Bromodichloromethane	mg/kg	0.05	0.044	88	71-121	
Bromoform	mg/kg	0.05	0.044	88	65-120	
Bromomethane	mg/kg	0.05	0.058	116	35-155	
Carbon disulfide	mg/kg	0.05	0.041	82	50-125	
Carbon tetrachloride	mg/kg	0.05	0.047	93	63-129	
Chlorobenzene	mg/kg	0.05	0.037	75	64-118	
Chloroethane	mg/kg	0.05	0.053	105	41-144	
Chloroform	mg/kg	0.05	0.039	78	60-118	
Chloromethane	mg/kg	0.05	0.052	103	34-127	
cis-1,2-Dichloroethene	mg/kg	0.05	0.040	80	65-121	
cis-1,3-Dichloropropene	mg/kg	0.05	0.041	82	69-124	
Dibromochloromethane	mg/kg	0.05	0.044	89	69-126	
Dibromomethane	mg/kg	0.05	0.043	86	71-120	
Dichlorodifluoromethane	mg/kg	0.05	0.035	71	10-134	
Ethyl methacrylate	mg/kg	0.05	0.039J	77	63-123	
Ethylbenzene	mg/kg	0.05	0.038	76	63-119	
Hexachloro-1,3-butadiene	mg/kg	0.05	0.038	75	52-127	
Iodomethane	mg/kg	0.05	0.049J	97	37-149	
Isopropylbenzene (Cumene)	mg/kg	0.05	0.039	79	61-122	
Methyl-tert-butyl ether	mg/kg	0.05	0.043	87	63-128	
Methylene Chloride	mg/kg	0.05	0.046	92	54-141	
n-Butylbenzene	mg/kg	0.05	0.037	75	51-121	
n-Hexane	mg/kg	0.05	0.040	80	49-119	

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### QUALITY CONTROL DATA

Project: MI City - Borrow Source

Pace Project No.: 50318336

LABORATORY CONTROL SAMPLE: 3135345

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
n-Propylbenzene	mg/kg	0.05	0.039	78	61-120	
Naphthalene	mg/kg	0.05	0.037	74	56-124	
p-Isopropyltoluene	mg/kg	0.05	0.039	77	58-121	
sec-Butylbenzene	mg/kg	0.05	0.039	79	61-122	
Styrene	mg/kg	0.05	0.038	75	65-119	
tert-Butylbenzene	mg/kg	0.05	0.039	77	64-119	
Tetrachloroethene	mg/kg	0.05	0.038	77	60-122	
Toluene	mg/kg	0.05	0.037	75	61-117	
trans-1,2-Dichloroethene	mg/kg	0.05	0.041	82	61-121	
trans-1,3-Dichloropropene	mg/kg	0.05	0.042	85	68-122	
trans-1,4-Dichloro-2-butene	mg/kg	0.05	0.050J	101	52-140	
Trichloroethene	mg/kg	0.05	0.039	79	63-123	
Trichlorofluoromethane	mg/kg	0.05	0.057	114	44-137	
Vinyl acetate	mg/kg	0.2	0.22	110	36-96	L1
Vinyl chloride	mg/kg	0.05	0.049	97	37-136	
Xylene (Total)	mg/kg	0.15	0.11	75	61-120	
4-Bromofluorobenzene (S)	%			100	63-129	
Dibromofluoromethane (S)	%			106	62-146	
Toluene-d8 (S)	%			99	68-143	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: MI City - Borrow Source  
Pace Project No.: 50318336

QC Batch: 681192      Analysis Method: EPA 8260  
QC Batch Method: EPA 8260      Analysis Description: 8260 MSV 5035A Volatile Organics  
Laboratory: Pace Analytical Services - Indianapolis

Associated Lab Samples: 50318336002, 50318336003

METHOD BLANK: 3135361      Matrix: Solid

Associated Lab Samples: 50318336002, 50318336003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	mg/kg	ND	0.0050	0.00024	06/11/22 03:28	
1,1,1-Trichloroethane	mg/kg	ND	0.0050	0.00036	06/11/22 03:28	
1,1,2,2-Tetrachloroethane	mg/kg	ND	0.0050	0.00025	06/11/22 03:28	
1,1,2-Trichloroethane	mg/kg	ND	0.0050	0.00021	06/11/22 03:28	
1,1-Dichloroethane	mg/kg	ND	0.0050	0.00031	06/11/22 03:28	
1,1-Dichloroethene	mg/kg	ND	0.0050	0.00027	06/11/22 03:28	
1,1-Dichloropropene	mg/kg	ND	0.0050	0.00041	06/11/22 03:28	
1,2,3-Trichlorobenzene	mg/kg	ND	0.0050	0.00035	06/11/22 03:28	
1,2,3-Trichloropropane	mg/kg	ND	0.0050	0.00026	06/11/22 03:28	
1,2,4-Trichlorobenzene	mg/kg	ND	0.0050	0.00042	06/11/22 03:28	
1,2,4-Trimethylbenzene	mg/kg	ND	0.0050	0.00043	06/11/22 03:28	
1,2-Dibromoethane (EDB)	mg/kg	ND	0.0050	0.00023	06/11/22 03:28	
1,2-Dichlorobenzene	mg/kg	ND	0.0050	0.00033	06/11/22 03:28	
1,2-Dichloroethane	mg/kg	ND	0.0050	0.00026	06/11/22 03:28	
1,2-Dichloropropane	mg/kg	ND	0.0050	0.00029	06/11/22 03:28	
1,3,5-Trimethylbenzene	mg/kg	ND	0.0050	0.00039	06/11/22 03:28	
1,3-Dichlorobenzene	mg/kg	ND	0.0050	0.00041	06/11/22 03:28	
1,3-Dichloropropane	mg/kg	ND	0.0050	0.00018	06/11/22 03:28	
1,4-Dichlorobenzene	mg/kg	ND	0.0050	0.00038	06/11/22 03:28	
2,2-Dichloropropane	mg/kg	ND	0.0050	0.00039	06/11/22 03:28	
2-Butanone (MEK)	mg/kg	ND	0.025	0.00069	06/11/22 03:28	
2-Chlorotoluene	mg/kg	ND	0.0050	0.00039	06/11/22 03:28	
2-Hexanone	mg/kg	ND	0.10	0.0010	06/11/22 03:28	
4-Chlorotoluene	mg/kg	ND	0.0050	0.00039	06/11/22 03:28	
4-Methyl-2-pentanone (MIBK)	mg/kg	ND	0.025	0.00094	06/11/22 03:28	
Acetone	mg/kg	ND	0.10	0.0039	06/11/22 03:28	
Acrolein	mg/kg	ND	0.10	0.0027	06/11/22 03:28	
Acrylonitrile	mg/kg	ND	0.10	0.0010	06/11/22 03:28	
Benzene	mg/kg	ND	0.0050	0.00034	06/11/22 03:28	
Bromobenzene	mg/kg	ND	0.0050	0.00033	06/11/22 03:28	
Bromochloromethane	mg/kg	ND	0.0050	0.00018	06/11/22 03:28	
Bromodichloromethane	mg/kg	ND	0.0050	0.00021	06/11/22 03:28	
Bromoform	mg/kg	ND	0.0050	0.00014	06/11/22 03:28	
Bromomethane	mg/kg	ND	0.0050	0.00027	06/11/22 03:28	
Carbon disulfide	mg/kg	ND	0.010	0.00035	06/11/22 03:28	
Carbon tetrachloride	mg/kg	ND	0.0050	0.00030	06/11/22 03:28	
Chlorobenzene	mg/kg	ND	0.0050	0.00034	06/11/22 03:28	
Chloroethane	mg/kg	ND	0.0050	0.00016	06/11/22 03:28	
Chloroform	mg/kg	ND	0.0050	0.00061	06/11/22 03:28	
Chloromethane	mg/kg	ND	0.0050	0.00017	06/11/22 03:28	

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### QUALITY CONTROL DATA

Project: MI City - Borrow Source

Pace Project No.: 50318336

METHOD BLANK: 3135361

Matrix: Solid

Associated Lab Samples: 50318336002, 50318336003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
cis-1,2-Dichloroethene	mg/kg	ND	0.0050	0.00031	06/11/22 03:28	
cis-1,3-Dichloropropene	mg/kg	ND	0.0050	0.00021	06/11/22 03:28	
Dibromochloromethane	mg/kg	ND	0.0050	0.00020	06/11/22 03:28	
Dibromomethane	mg/kg	ND	0.0050	0.00018	06/11/22 03:28	
Dichlorodifluoromethane	mg/kg	ND	0.0050	0.00026	06/11/22 03:28	
Ethyl methacrylate	mg/kg	ND	0.10	0.00018	06/11/22 03:28	
Ethylbenzene	mg/kg	ND	0.0050	0.00041	06/11/22 03:28	
Hexachloro-1,3-butadiene	mg/kg	ND	0.0050	0.00044	06/11/22 03:28	
Iodomethane	mg/kg	ND	0.10	0.00028	06/11/22 03:28	
Isopropylbenzene (Cumene)	mg/kg	ND	0.0050	0.00042	06/11/22 03:28	
Methyl-tert-butyl ether	mg/kg	ND	0.0050	0.00019	06/11/22 03:28	
Methylene Chloride	mg/kg	0.0043J	0.020	0.00048	06/11/22 03:28	
n-Butylbenzene	mg/kg	ND	0.0050	0.00042	06/11/22 03:28	
n-Hexane	mg/kg	ND	0.0050	0.00022	06/11/22 03:28	
n-Propylbenzene	mg/kg	ND	0.0050	0.00042	06/11/22 03:28	
Naphthalene	mg/kg	ND	0.0050	0.00076	06/11/22 03:28	
p-Isopropyltoluene	mg/kg	ND	0.0050	0.00046	06/11/22 03:28	
sec-Butylbenzene	mg/kg	ND	0.0050	0.00044	06/11/22 03:28	
Styrene	mg/kg	ND	0.0050	0.00036	06/11/22 03:28	
tert-Butylbenzene	mg/kg	ND	0.0050	0.00045	06/11/22 03:28	
Tetrachloroethene	mg/kg	ND	0.0050	0.00040	06/11/22 03:28	
Toluene	mg/kg	ND	0.0050	0.00066	06/11/22 03:28	
trans-1,2-Dichloroethene	mg/kg	ND	0.0050	0.00044	06/11/22 03:28	
trans-1,3-Dichloropropene	mg/kg	ND	0.0050	0.00022	06/11/22 03:28	
trans-1,4-Dichloro-2-butene	mg/kg	ND	0.10	0.00034	06/11/22 03:28	
Trichloroethene	mg/kg	ND	0.0050	0.00037	06/11/22 03:28	
Trichlorofluoromethane	mg/kg	ND	0.0050	0.00017	06/11/22 03:28	
Vinyl acetate	mg/kg	ND	0.10	0.00048	06/11/22 03:28	
Vinyl chloride	mg/kg	ND	0.0050	0.00017	06/11/22 03:28	
Xylene (Total)	mg/kg	ND	0.010	0.00042	06/11/22 03:28	
4-Bromofluorobenzene (S)	%	101	63-129		06/11/22 03:28	
Dibromofluoromethane (S)	%	104	62-146		06/11/22 03:28	1d
Toluene-d8 (S)	%	98	68-143		06/11/22 03:28	

LABORATORY CONTROL SAMPLE: 3135362

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	mg/kg	0.05	0.044	88	73-121	
1,1,1-Trichloroethane	mg/kg	0.05	0.045	89	60-122	
1,1,2,2-Tetrachloroethane	mg/kg	0.05	0.040	80	60-129	
1,1,2-Trichloroethane	mg/kg	0.05	0.041	81	69-126	
1,1-Dichloroethane	mg/kg	0.05	0.043	86	62-124	
1,1-Dichloroethene	mg/kg	0.05	0.044	88	57-133	
1,1-Dichloropropene	mg/kg	0.05	0.043	86	69-135	

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### QUALITY CONTROL DATA

Project: MI City - Borrow Source

Pace Project No.: 50318336

LABORATORY CONTROL SAMPLE: 3135362

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,3-Trichlorobenzene	mg/kg	0.05	0.032	64	51-128	
1,2,3-Trichloropropane	mg/kg	0.05	0.043	86	68-120	
1,2,4-Trichlorobenzene	mg/kg	0.05	0.032	64	46-131	
1,2,4-Trimethylbenzene	mg/kg	0.05	0.037	74	57-119	
1,2-Dibromoethane (EDB)	mg/kg	0.05	0.042	84	62-134	
1,2-Dichlorobenzene	mg/kg	0.05	0.035	71	65-116	
1,2-Dichloroethane	mg/kg	0.05	0.046	92	63-127	
1,2-Dichloropropane	mg/kg	0.05	0.040	80	64-124	
1,3,5-Trimethylbenzene	mg/kg	0.05	0.038	76	58-118	
1,3-Dichlorobenzene	mg/kg	0.05	0.035	70	60-118	
1,3-Dichloropropane	mg/kg	0.05	0.042	83	74-123	
1,4-Dichlorobenzene	mg/kg	0.05	0.034	68	59-117	
2,2-Dichloropropane	mg/kg	0.05	0.041	83	49-130	
2-Butanone (MEK)	mg/kg	0.25	0.24	98	53-123	
2-Chlorotoluene	mg/kg	0.05	0.037	74	61-114	
2-Hexanone	mg/kg	0.25	0.24	94	50-126	
4-Chlorotoluene	mg/kg	0.05	0.035	71	60-119	
4-Methyl-2-pentanone (MIBK)	mg/kg	0.25	0.24	94	54-130	
Acetone	mg/kg	0.25	0.29	115	21-145	
Acrolein	mg/kg	1	1.2	119	22-129	
Acrylonitrile	mg/kg	0.25	0.23	92	61-125	
Benzene	mg/kg	0.05	0.039	78	65-124	
Bromobenzene	mg/kg	0.05	0.037	74	64-118	
Bromochloromethane	mg/kg	0.05	0.048	96	63-127	
Bromodichloromethane	mg/kg	0.05	0.044	88	71-121	
Bromoform	mg/kg	0.05	0.044	88	65-120	
Bromomethane	mg/kg	0.05	0.059	119	35-155	
Carbon disulfide	mg/kg	0.05	0.041	82	50-125	
Carbon tetrachloride	mg/kg	0.05	0.046	93	63-129	
Chlorobenzene	mg/kg	0.05	0.037	74	64-118	
Chloroethane	mg/kg	0.05	0.054	108	41-144	
Chloroform	mg/kg	0.05	0.040	79	60-118	
Chloromethane	mg/kg	0.05	0.053	106	34-127	
cis-1,2-Dichloroethene	mg/kg	0.05	0.040	79	65-121	
cis-1,3-Dichloropropene	mg/kg	0.05	0.040	80	69-124	
Dibromochloromethane	mg/kg	0.05	0.044	89	69-126	
Dibromomethane	mg/kg	0.05	0.042	84	71-120	
Dichlorodifluoromethane	mg/kg	0.05	0.036	71	10-134	
Ethyl methacrylate	mg/kg	0.05	0.039J	78	63-123	
Ethylbenzene	mg/kg	0.05	0.038	76	63-119	
Hexachloro-1,3-butadiene	mg/kg	0.05	0.036	72	52-127	
Iodomethane	mg/kg	0.05	0.047J	94	37-149	
Isopropylbenzene (Cumene)	mg/kg	0.05	0.039	78	61-122	
Methyl-tert-butyl ether	mg/kg	0.05	0.043	87	63-128	
Methylene Chloride	mg/kg	0.05	0.047	94	54-141	
n-Butylbenzene	mg/kg	0.05	0.035	70	51-121	
n-Hexane	mg/kg	0.05	0.040	79	49-119	

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### QUALITY CONTROL DATA

Project: MI City - Borrow Source

Pace Project No.: 50318336

LABORATORY CONTROL SAMPLE: 3135362

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
n-Propylbenzene	mg/kg	0.05	0.037	75	61-120	
Naphthalene	mg/kg	0.05	0.036	72	56-124	
p-Isopropyltoluene	mg/kg	0.05	0.037	74	58-121	
sec-Butylbenzene	mg/kg	0.05	0.039	78	61-122	
Styrene	mg/kg	0.05	0.037	74	65-119	
tert-Butylbenzene	mg/kg	0.05	0.039	78	64-119	
Tetrachloroethene	mg/kg	0.05	0.037	73	60-122	
Toluene	mg/kg	0.05	0.037	75	61-117	
trans-1,2-Dichloroethene	mg/kg	0.05	0.040	81	61-121	
trans-1,3-Dichloropropene	mg/kg	0.05	0.041	82	68-122	
trans-1,4-Dichloro-2-butene	mg/kg	0.05	0.047J	93	52-140	
Trichloroethene	mg/kg	0.05	0.040	79	63-123	
Trichlorofluoromethane	mg/kg	0.05	0.057	114	44-137	
Vinyl acetate	mg/kg	0.2	0.20	98	36-96	L1
Vinyl chloride	mg/kg	0.05	0.049	98	37-136	
Xylene (Total)	mg/kg	0.15	0.11	74	61-120	
4-Bromofluorobenzene (S)	%			100	63-129	
Dibromofluoromethane (S)	%			104	62-146	
Toluene-d8 (S)	%			99	68-143	

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### QUALITY CONTROL DATA

Project: MI City - Borrow Source

Pace Project No.: 50318336

QC Batch: 681329

Analysis Method: EPA 8081

QC Batch Method: EPA 3546

Analysis Description: 8081 GCS Pesticides

Laboratory: Pace Analytical Services - Indianapolis

Associated Lab Samples: 50318336001, 50318336002

METHOD BLANK: 3136001

Matrix: Solid

Associated Lab Samples: 50318336001, 50318336002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
4,4'-DDD	mg/kg	ND	0.0049	0.00095	06/13/22 17:55	
4,4'-DDE	mg/kg	ND	0.0049	0.00081	06/13/22 17:55	
4,4'-DDT	mg/kg	ND	0.0049	0.0016	06/13/22 17:55	
Aldrin	mg/kg	ND	0.0025	0.00047	06/13/22 17:55	
alpha-BHC	mg/kg	ND	0.0025	0.00051	06/13/22 17:55	
alpha-Chlordane	mg/kg	ND	0.0025	0.00043	06/13/22 17:55	
beta-BHC	mg/kg	ND	0.0025	0.00046	06/13/22 17:55	
Chlordane (Technical)	mg/kg	ND	0.049	0.010	06/13/22 17:55	
delta-BHC	mg/kg	ND	0.0025	0.00064	06/13/22 17:55	
Dieldrin	mg/kg	ND	0.0049	0.00086	06/13/22 17:55	
Endosulfan I	mg/kg	ND	0.0025	0.00041	06/13/22 17:55	
Endosulfan II	mg/kg	ND	0.0049	0.00080	06/13/22 17:55	
Endosulfan sulfate	mg/kg	ND	0.0049	0.00095	06/13/22 17:55	
Endrin	mg/kg	ND	0.0049	0.00086	06/13/22 17:55	
Endrin aldehyde	mg/kg	ND	0.0049	0.0011	06/13/22 17:55	
Endrin ketone	mg/kg	ND	0.0049	0.0012	06/13/22 17:55	
gamma-BHC (Lindane)	mg/kg	ND	0.0025	0.00044	06/13/22 17:55	
gamma-Chlordane	mg/kg	ND	0.0025	0.00051	06/13/22 17:55	
Heptachlor	mg/kg	ND	0.0025	0.00044	06/13/22 17:55	
Heptachlor epoxide	mg/kg	ND	0.0025	0.00041	06/13/22 17:55	
Methoxychlor	mg/kg	ND	0.025	0.0056	06/13/22 17:55	
Toxaphene	mg/kg	ND	0.049	0.017	06/13/22 17:55	
Decachlorobiphenyl (S)	%	68	10-147		06/13/22 17:55	

LABORATORY CONTROL SAMPLE: 3136002

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4,4'-DDD	mg/kg	0.019	0.026	133	40-148	
4,4'-DDE	mg/kg	0.019	0.025	131	42-145	
4,4'-DDT	mg/kg	0.019	0.024	127	28-169	
Aldrin	mg/kg	0.0096	0.011	117	42-137	
alpha-BHC	mg/kg	0.0096	0.011	112	40-141	
alpha-Chlordane	mg/kg	0.0096	0.011	119	38-141	
beta-BHC	mg/kg	0.0096	0.012	126	42-137	
delta-BHC	mg/kg	0.0096	0.011	114	33-132	
Dieldrin	mg/kg	0.019	0.025	131	42-143	
Endosulfan I	mg/kg	0.0096	0.012	125	38-142	
Endosulfan II	mg/kg	0.019	0.024	124	42-153	
Endosulfan sulfate	mg/kg	0.019	0.023	118	36-133	

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### QUALITY CONTROL DATA

Project: MI City - Borrow Source

Pace Project No.: 50318336

LABORATORY CONTROL SAMPLE: 3136002

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Endrin	mg/kg	0.019	0.025	128	43-145	
Endrin aldehyde	mg/kg	0.019	0.023	119	40-138	
Endrin ketone	mg/kg	0.019	0.023	119	35-154	
gamma-BHC (Lindane)	mg/kg	0.0096	0.012	120	42-142	
gamma-Chlordane	mg/kg	0.0096	0.013	133	44-148	
Heptachlor	mg/kg	0.0096	0.012	121	42-143	
Heptachlor epoxide	mg/kg	0.0096	0.011	116	41-136	
Methoxychlor	mg/kg	0.096	0.12	122	37-157	
Decachlorobiphenyl (S)	%			75	10-147	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3136003 3136004

Parameter	Units	3136002		3136003		3136004		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
4,4'-DDD	mg/kg	ND	0.022	0.022	0.029	0.030	130	136	10-171	4	20			
4,4'-DDE	mg/kg	ND	0.022	0.022	0.029	0.030	129	136	10-146	4	20			
4,4'-DDT	mg/kg	ND	0.022	0.022	0.030	0.032	132	142	10-165	7	20			
Aldrin	mg/kg	ND	0.011	0.011	0.013	0.014	119	124	12-141	3	20			
alpha-BHC	mg/kg	ND	0.011	0.011	0.013	0.014	119	130	14-157	8	20			
alpha-Chlordane	mg/kg	ND	0.011	0.011	0.013	0.014	117	123	10-153	4	20			
beta-BHC	mg/kg	ND	0.011	0.011	0.014	0.014	125	128	10-163	1	20			
delta-BHC	mg/kg	ND	0.011	0.011	0.013	0.013	116	117	10-155	1	20			
Dieldrin	mg/kg	ND	0.022	0.022	0.029	0.031	132	138	14-141	4	20			
Endosulfan I	mg/kg	ND	0.011	0.011	0.014	0.014	123	128	10-141	3	20			
Endosulfan II	mg/kg	ND	0.022	0.022	0.027	0.028	123	128	10-149	4	20			
Endosulfan sulfate	mg/kg	ND	0.022	0.022	0.026	0.027	115	121	10-126	4	20			
Endrin	mg/kg	ND	0.022	0.022	0.029	0.030	129	135	13-136	4	20			
Endrin aldehyde	mg/kg	ND	0.022	0.022	0.026	0.027	115	121	10-150	5	20			
Endrin ketone	mg/kg	ND	0.022	0.022	0.027	0.028	120	127	10-171	5	20			
gamma-BHC (Lindane)	mg/kg	ND	0.011	0.011	0.014	0.015	127	135	18-152	5	20			
gamma-Chlordane	mg/kg	ND	0.011	0.011	0.015	0.015	132	138	10-159	4	20			
Heptachlor	mg/kg	ND	0.011	0.011	0.014	0.015	127	132	10-162	3	20			
Heptachlor epoxide	mg/kg	ND	0.011	0.011	0.013	0.014	118	123	15-142	4	20			
Methoxychlor	mg/kg	ND	0.11	0.11	0.14	0.15	126	132	10-178	4	20			
Decachlorobiphenyl (S)	%						60	77	10-147					

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### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA**

Project: MI City - Borrow Source  
Pace Project No.: 50318336

QC Batch: 680762	Analysis Method: EPA 8082
QC Batch Method: EPA 3546	Analysis Description: 8082 PCB Solids
	Laboratory: Pace Analytical Services - Indianapolis

Associated Lab Samples: 50318336001, 50318336002

METHOD BLANK: 3132904 Matrix: Solid

Associated Lab Samples: 50318336001, 50318336002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	mg/kg	ND	0.098	0.0036	06/10/22 01:43	
PCB-1221 (Aroclor 1221)	mg/kg	ND	0.098	0.0046	06/10/22 01:43	
PCB-1232 (Aroclor 1232)	mg/kg	ND	0.098	0.0051	06/10/22 01:43	
PCB-1242 (Aroclor 1242)	mg/kg	ND	0.098	0.0043	06/10/22 01:43	
PCB-1248 (Aroclor 1248)	mg/kg	ND	0.098	0.0030	06/10/22 01:43	
PCB-1254 (Aroclor 1254)	mg/kg	0.020J	0.098	0.0044	06/10/22 01:43	
PCB-1260 (Aroclor 1260)	mg/kg	ND	0.098	0.0046	06/10/22 01:43	
Tetrachloro-m-xylene (S)	%	81	36-112		06/10/22 01:43	

LABORATORY CONTROL SAMPLE: 3132905

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	mg/kg	0.32	0.29	90	52-128	
PCB-1260 (Aroclor 1260)	mg/kg	0.32	0.24	74	30-128	
Tetrachloro-m-xylene (S)	%			80	36-112	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3132906 3132907

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		50318336002 Result	Spike Conc.	Spike Conc.	Result						
PCB-1016 (Aroclor 1016)	mg/kg	ND	0.37	0.37	0.24	0.25	63	69	10-150	6	20
PCB-1260 (Aroclor 1260)	mg/kg	ND	0.37	0.37	0.18	0.19	49	53	10-140	5	20
Tetrachloro-m-xylene (S)	%						60	62	36-112		

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### QUALITY CONTROL DATA

Project: MI City - Borrow Source

Pace Project No.: 50318336

QC Batch: 680862

Analysis Method: EPA 8270

QC Batch Method: EPA 3546

Analysis Description: 8270 Solid MSSV Microwave

Laboratory: Pace Analytical Services - Indianapolis

Associated Lab Samples: 50318336001, 50318336002

METHOD BLANK: 3133298

Matrix: Solid

Associated Lab Samples: 50318336001, 50318336002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	mg/kg	ND	0.33	0.12	06/11/22 07:12	
2,4,5-Trichlorophenol	mg/kg	ND	0.33	0.11	06/11/22 07:12	
2,4,6-Trichlorophenol	mg/kg	ND	0.33	0.10	06/11/22 07:12	
2,4-Dichlorophenol	mg/kg	ND	0.33	0.11	06/11/22 07:12	
2,4-Dimethylphenol	mg/kg	ND	0.33	0.11	06/11/22 07:12	
2,4-Dinitrophenol	mg/kg	ND	1.7	0.18	06/11/22 07:12	
2,4-Dinitrotoluene	mg/kg	ND	0.33	0.11	06/11/22 07:12	
2,6-Dinitrotoluene	mg/kg	ND	0.33	0.093	06/11/22 07:12	
2-Chloronaphthalene	mg/kg	ND	0.33	0.092	06/11/22 07:12	
2-Chlorophenol	mg/kg	ND	0.33	0.12	06/11/22 07:12	
2-Methylnaphthalene	mg/kg	ND	0.33	0.098	06/11/22 07:12	
2-Methylphenol(o-Cresol)	mg/kg	ND	0.33	0.14	06/11/22 07:12	
2-Nitroaniline	mg/kg	ND	0.33	0.13	06/11/22 07:12	
2-Nitrophenol	mg/kg	ND	0.33	0.13	06/11/22 07:12	
3&4-Methylphenol(m&p Cresol)	mg/kg	ND	0.33	0.14	06/11/22 07:12	
3,3'-Dichlorobenzidine	mg/kg	ND	0.66	0.11	06/11/22 07:12	
3-Nitroaniline	mg/kg	ND	0.33	0.12	06/11/22 07:12	
4,6-Dinitro-2-methylphenol	mg/kg	ND	0.66	0.20	06/11/22 07:12	
4-Bromophenylphenyl ether	mg/kg	ND	0.33	0.12	06/11/22 07:12	
4-Chloro-3-methylphenol	mg/kg	ND	0.33	0.13	06/11/22 07:12	
4-Chloroaniline	mg/kg	ND	0.33	0.086	06/11/22 07:12	
4-Chlorophenylphenyl ether	mg/kg	ND	0.33	0.10	06/11/22 07:12	
4-Nitroaniline	mg/kg	ND	0.33	0.13	06/11/22 07:12	
4-Nitrophenol	mg/kg	ND	1.7	0.25	06/11/22 07:12	
Acenaphthene	mg/kg	ND	0.33	0.087	06/11/22 07:12	
Acenaphthylene	mg/kg	ND	0.33	0.098	06/11/22 07:12	
Anthracene	mg/kg	ND	0.33	0.13	06/11/22 07:12	
Benzo(a)anthracene	mg/kg	ND	0.33	0.097	06/11/22 07:12	
Benzo(a)pyrene	mg/kg	ND	0.33	0.11	06/11/22 07:12	
Benzo(b)fluoranthene	mg/kg	ND	0.33	0.11	06/11/22 07:12	
Benzo(g,h,i)perylene	mg/kg	ND	0.33	0.12	06/11/22 07:12	
Benzo(k)fluoranthene	mg/kg	ND	0.33	0.12	06/11/22 07:12	
Benzyl alcohol	mg/kg	ND	0.33	0.11	06/11/22 07:12	
bis(2-Chloroethoxy)methane	mg/kg	ND	0.33	0.10	06/11/22 07:12	
bis(2-Chloroethyl) ether	mg/kg	ND	0.33	0.13	06/11/22 07:12	
bis(2-Ethylhexyl)phthalate	mg/kg	ND	0.33	0.10	06/11/22 07:12	
bis(2chloro1 methylethyl) ether	mg/kg	ND	0.33	0.11	06/11/22 07:12	
Butylbenzylphthalate	mg/kg	ND	0.33	0.18	06/11/22 07:12	
Chrysene	mg/kg	ND	0.33	0.11	06/11/22 07:12	
Di-n-butylphthalate	mg/kg	ND	0.33	0.12	06/11/22 07:12	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: MI City - Borrow Source

Pace Project No.: 50318336

METHOD BLANK: 3133298

Matrix: Solid

Associated Lab Samples: 50318336001, 50318336002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Di-n-octylphthalate	mg/kg	ND	0.33	0.12	06/11/22 07:12	
Dibenz(a,h)anthracene	mg/kg	ND	0.33	0.12	06/11/22 07:12	
Dibenzofuran	mg/kg	ND	0.33	0.10	06/11/22 07:12	
Diethylphthalate	mg/kg	ND	0.33	0.11	06/11/22 07:12	
Dimethylphthalate	mg/kg	ND	0.33	0.11	06/11/22 07:12	
Fluoranthene	mg/kg	ND	0.33	0.12	06/11/22 07:12	
Fluorene	mg/kg	ND	0.33	0.11	06/11/22 07:12	
Hexachloro-1,3-butadiene	mg/kg	ND	0.33	0.089	06/11/22 07:12	
Hexachlorobenzene	mg/kg	ND	0.33	0.083	06/11/22 07:12	
Hexachlorocyclopentadiene	mg/kg	ND	0.33	0.16	06/11/22 07:12	
Hexachloroethane	mg/kg	ND	0.33	0.099	06/11/22 07:12	
Indeno(1,2,3-cd)pyrene	mg/kg	ND	0.33	0.12	06/11/22 07:12	
Isophorone	mg/kg	ND	0.33	0.11	06/11/22 07:12	
N-Nitroso-di-n-propylamine	mg/kg	ND	0.33	0.13	06/11/22 07:12	
N-Nitrosodiphenylamine	mg/kg	ND	0.33	0.11	06/11/22 07:12	
Naphthalene	mg/kg	ND	0.33	0.094	06/11/22 07:12	
Nitrobenzene	mg/kg	ND	0.33	0.11	06/11/22 07:12	
Pentachlorophenol	mg/kg	ND	1.7	0.25	06/11/22 07:12	
Phenanthrene	mg/kg	ND	0.33	0.13	06/11/22 07:12	
Phenol	mg/kg	ND	0.33	0.12	06/11/22 07:12	
Pyrene	mg/kg	ND	0.33	0.10	06/11/22 07:12	
2,4,6-Tribromophenol (S)	%	77	10-123		06/11/22 07:12	
2-Fluorobiphenyl (S)	%	73	36-100		06/11/22 07:12	
2-Fluorophenol (S)	%	76	22-114		06/11/22 07:12	
Nitrobenzene-d5 (S)	%	76	35-110		06/11/22 07:12	
p-Terphenyl-d14 (S)	%	98	29-117		06/11/22 07:12	
Phenol-d5 (S)	%	83	35-115		06/11/22 07:12	

LABORATORY CONTROL SAMPLE: 3133299

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	mg/kg	1.6	1.4	85	61-102	
2,4,5-Trichlorophenol	mg/kg	1.6	1.4	85	64-110	
2,4,6-Trichlorophenol	mg/kg	1.6	1.3	81	62-109	
2,4-Dichlorophenol	mg/kg	1.6	1.4	85	65-108	
2,4-Dimethylphenol	mg/kg	1.6	1.4	85	54-117	
2,4-Dinitrophenol	mg/kg	1.6	1.6J	99	10-149	
2,4-Dinitrotoluene	mg/kg	1.6	1.6	96	57-115	
2,6-Dinitrotoluene	mg/kg	1.6	1.5	92	65-108	
2-Chloronaphthalene	mg/kg	1.6	1.3	77	57-101	
2-Chlorophenol	mg/kg	1.6	1.3	78	55-103	
2-Methylnaphthalene	mg/kg	1.6	1.3	80	53-108	
2-Methylphenol(o-Cresol)	mg/kg	1.6	1.4	89	59-110	
2-Nitroaniline	mg/kg	1.6	1.5	94	58-124	

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### QUALITY CONTROL DATA

Project: MI City - Borrow Source

Pace Project No.: 50318336

LABORATORY CONTROL SAMPLE: 3133299

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Nitrophenol	mg/kg	1.6	1.2	74	59-101	
3&4-Methylphenol(m&p Cresol)	mg/kg	1.6	1.4	88	60-113	
3,3'-Dichlorobenzidine	mg/kg	1.6	1.3	81	52-109	
3-Nitroaniline	mg/kg	1.6	1.5	92	58-113	
4,6-Dinitro-2-methylphenol	mg/kg	1.6	1.5	92	10-151	
4-Bromophenylphenyl ether	mg/kg	1.6	1.2	76	57-113	
4-Chloro-3-methylphenol	mg/kg	1.6	1.6	99	60-121	
4-Chloroaniline	mg/kg	1.6	1.2	77	45-101	
4-Chlorophenylphenyl ether	mg/kg	1.6	1.4	86	62-107	
4-Nitroaniline	mg/kg	1.6	1.7	102	56-132	
4-Nitrophenol	mg/kg	1.6	1.6	100	48-129	
Acenaphthene	mg/kg	1.6	1.4	84	57-102	
Acenaphthylene	mg/kg	1.6	1.3	81	56-103	
Anthracene	mg/kg	1.6	1.3	81	62-106	
Benzo(a)anthracene	mg/kg	1.6	1.4	87	63-110	
Benzo(a)pyrene	mg/kg	1.6	1.3	79	60-114	
Benzo(b)fluoranthene	mg/kg	1.6	1.4	85	61-119	
Benzo(g,h,i)perylene	mg/kg	1.6	1.4	84	62-109	
Benzo(k)fluoranthene	mg/kg	1.6	1.4	86	59-115	
Benzyl alcohol	mg/kg	1.6	1.4	87	58-107	
bis(2-Chloroethoxy)methane	mg/kg	1.6	1.2	77	56-104	
bis(2-Chloroethyl) ether	mg/kg	1.6	1.1	69	43-104	
bis(2-Ethylhexyl)phthalate	mg/kg	1.6	1.3	81	63-122	
bis(2chloro1 methylethyl) ether	mg/kg	1.6	1.1	65	21-142	
Butylbenzylphthalate	mg/kg	1.6	1.3	83	68-117	
Chrysene	mg/kg	1.6	1.4	86	61-109	
Di-n-butylphthalate	mg/kg	1.6	1.4	85	67-115	
Di-n-octylphthalate	mg/kg	1.6	1.3	80	59-130	
Dibenz(a,h)anthracene	mg/kg	1.6	1.4	85	62-111	
Dibenzofuran	mg/kg	1.6	1.4	85	60-105	
Diethylphthalate	mg/kg	1.6	1.5	93	59-116	
Dimethylphthalate	mg/kg	1.6	1.4	87	62-110	
Fluoranthene	mg/kg	1.6	1.5	90	65-113	
Fluorene	mg/kg	1.6	1.4	89	60-109	
Hexachloro-1,3-butadiene	mg/kg	1.6	1.1	69	49-98	
Hexachlorobenzene	mg/kg	1.6	1.3	81	58-110	
Hexachlorocyclopentadiene	mg/kg	1.6	0.92	57	10-115	
Hexachloroethane	mg/kg	1.6	1.1	67	52-90	
Indeno(1,2,3-cd)pyrene	mg/kg	1.6	1.4	85	62-111	
Isophorone	mg/kg	1.6	1.3	80	60-101	
N-Nitroso-di-n-propylamine	mg/kg	1.6	1.3	81	51-105	
N-Nitrosodiphenylamine	mg/kg	1.6	1.3	77	56-112	
Naphthalene	mg/kg	1.6	1.2	75	53-103	
Nitrobenzene	mg/kg	1.6	1.2	77	56-99	
Pentachlorophenol	mg/kg	1.6	1.6J	97	33-128	
Phenanthrene	mg/kg	1.6	1.3	83	62-108	
Phenol	mg/kg	1.6	1.3	83	45-112	

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### QUALITY CONTROL DATA

Project: MI City - Borrow Source

Pace Project No.: 50318336

LABORATORY CONTROL SAMPLE: 3133299

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Pyrene	mg/kg	1.6	1.3	82	61-113	
2,4,6-Tribromophenol (S)	%			80	10-123	
2-Fluorobiphenyl (S)	%			73	36-100	
2-Fluorophenol (S)	%			79	22-114	
Nitrobenzene-d5 (S)	%			72	35-110	
p-Terphenyl-d14 (S)	%			92	29-117	
Phenol-d5 (S)	%			86	35-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3133300 3133301

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		50318336002 Result	Spike Conc.	Spike Conc.	Result							Result
1-Methylnaphthalene	mg/kg	ND	2	2	1.4	1.6	72	83	22-124	15	20	
2,4,5-Trichlorophenol	mg/kg	ND	2	2	1.5	1.7	80	91	10-132	13	20	
2,4,6-Trichlorophenol	mg/kg	ND	2	2	1.4	1.6	74	86	10-127	15	20	
2,4-Dichlorophenol	mg/kg	ND	2	2	1.5	1.7	80	91	10-130	13	20	
2,4-Dimethylphenol	mg/kg	ND	2	2	1.3	1.6	69	83	17-125	18	20	
2,4-Dinitrophenol	mg/kg	ND	2	2	0.61J	0.67J	32	35	10-90		20	
2,4-Dinitrotoluene	mg/kg	ND	2	2	1.4	1.7	75	89	10-126	18	20	
2,6-Dinitrotoluene	mg/kg	ND	2	2	1.4	1.6	75	83	27-120	11	20	
2-Chloronaphthalene	mg/kg	ND	2	2	1.2	1.5	65	77	21-115	18	20	
2-Chlorophenol	mg/kg	ND	2	2	1.4	1.6	72	85	15-119	17	20	
2-Methylnaphthalene	mg/kg	ND	2	2	1.3	1.5	70	80	24-122	14	20	
2-Methylphenol(o-Cresol)	mg/kg	ND	2	2	1.5	1.7	78	92	21-122	17	20	
2-Nitroaniline	mg/kg	ND	2	2	1.5	1.8	79	92	13-145	16	20	
2-Nitrophenol	mg/kg	ND	2	2	1.3	1.4	67	76	10-125	13	20	
3&4-Methylphenol(m&p Cresol)	mg/kg	ND	2	2	1.5	1.8	79	94	13-137	18	20	
3,3'-Dichlorobenzidine	mg/kg	ND	2	2	1.1	1.4	60	72	10-123	18	20	
3-Nitroaniline	mg/kg	ND	2	2	1.4	1.6	76	85	10-138	13	20	
4,6-Dinitro-2-methylphenol	mg/kg	ND	2	2	0.64J	0.85	33	45	10-108		20	
4-Bromophenylphenyl ether	mg/kg	ND	2	2	1.2	1.5	65	79	30-117	20	20	
4-Chloro-3-methylphenol	mg/kg	ND	2	2	1.8	2.0	93	107	20-139	14	20	
4-Chloroaniline	mg/kg	ND	2	2	1.2	1.4	64	72	10-114	13	20	
4-Chlorophenylphenyl ether	mg/kg	ND	2	2	1.4	1.6	73	82	29-119	13	20	
4-Nitroaniline	mg/kg	ND	2	2	1.5	1.7	80	89	10-160	11	20	
4-Nitrophenol	mg/kg	ND	2	2	1.7J	1.9J	89	100	10-143		20	
Acenaphthene	mg/kg	ND	2	2	1.3	1.6	70	83	18-123	16	20	
Acenaphthylene	mg/kg	ND	2	2	1.3	1.5	66	79	17-120	18	20	
Anthracene	mg/kg	ND	2	2	1.3	1.5	68	80	16-126	17	20	
Benzo(a)anthracene	mg/kg	ND	2	2	1.4	1.7	74	88	10-145	17	20	
Benzo(a)pyrene	mg/kg	ND	2	2	1.2	1.4	64	75	10-136	16	20	
Benzo(b)fluoranthene	mg/kg	ND	2	2	1.3	1.6	71	84	10-147	17	20	
Benzo(g,h,i)perylene	mg/kg	ND	2	2	1.3	1.5	68	80	10-128	17	20	
Benzo(k)fluoranthene	mg/kg	ND	2	2	1.3	1.6	69	82	10-137	17	20	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: MI City - Borrow Source

Pace Project No.: 50318336

Parameter	Units	50318336002		3133300		3133301		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
Benzyl alcohol	mg/kg	ND	2	2	1.5	1.7	76	91	10-133	18	20			
bis(2-Chloroethoxy)methane	mg/kg	ND	2	2	1.2	1.4	66	76	19-119	15	20			
bis(2-Chloroethyl) ether	mg/kg	ND	2	2	0.94	1.1	49	57	14-115	15	20			
bis(2-Ethylhexyl)phthalate	mg/kg	ND	2	2	1.4	1.6	72	84	10-149	17	20			
bis(2chloro1methylethyl) ether	mg/kg	ND	2	2	1.1	1.3	57	67	10-144	17	20			
Butylbenzylphthalate	mg/kg	ND	2	2	1.4	1.7	74	88	21-138	17	20			
Chrysene	mg/kg	ND	2	2	1.3	1.6	71	85	10-141	19	20			
Di-n-butylphthalate	mg/kg	ND	2	2	1.3	1.5	67	80	20-134	18	20			
Di-n-octylphthalate	mg/kg	ND	2	2	1.3	1.5	67	80	20-144	18	20			
Dibenz(a,h)anthracene	mg/kg	ND	2	2	1.3	1.6	69	82	10-130	18	20			
Dibenzofuran	mg/kg	ND	2	2	1.3	1.6	71	84	24-123	17	20			
Diethylphthalate	mg/kg	ND	2	2	1.4	1.6	74	84	24-124	12	20			
Dimethylphthalate	mg/kg	ND	2	2	1.3	1.5	70	81	18-129	14	20			
Fluoranthene	mg/kg	ND	2	2	1.3	1.5	69	81	10-151	16	20			
Fluorene	mg/kg	ND	2	2	1.4	1.7	75	87	17-131	15	20			
Hexachloro-1,3-butadiene	mg/kg	ND	2	2	1.1	1.3	58	67	27-104	15	20			
Hexachlorobenzene	mg/kg	ND	2	2	1.2	1.5	66	78	18-120	17	20			
Hexachlorocyclopentadiene	mg/kg	ND	2	2	0.47	0.54	25	28	10-103	13	20			
Hexachloroethane	mg/kg	ND	2	2	1.1	1.3	59	69	18-103	15	20			
Indeno(1,2,3-cd)pyrene	mg/kg	ND	2	2	1.3	1.5	68	81	10-132	18	20			
Isophorone	mg/kg	ND	2	2	1.2	1.4	63	74	28-115	15	20			
N-Nitroso-di-n-propylamine	mg/kg	ND	2	2	1.3	1.5	67	79	21-118	17	20			
N-Nitrosodiphenylamine	mg/kg	ND	2	2	1.3	1.5	67	80	11-133	19	20			
Naphthalene	mg/kg	ND	2	2	1.2	1.4	65	75	21-122	16	20			
Nitrobenzene	mg/kg	ND	2	2	1.2	1.4	66	76	26-108	15	20			
Pentachlorophenol	mg/kg	ND	2	2	1.6J	1.9	86	101	10-125		20			
Phenanthrene	mg/kg	ND	2	2	1.3	1.5	68	81	10-141	18	20			
Phenol	mg/kg	ND	2	2	1.4	1.6	73	86	17-120	17	20			
Pyrene	mg/kg	ND	2	2	1.4	1.8	76	92	10-150	20	20			
2,4,6-Tribromophenol (S)	%						71	83	10-123					
2-Fluorobiphenyl (S)	%						61	72	36-100					
2-Fluorophenol (S)	%						68	78	22-114					
Nitrobenzene-d5 (S)	%						63	73	35-110					
p-Terphenyl-d14 (S)	%						68	81	29-117					
Phenol-d5 (S)	%						79	91	35-115					

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**QUALITY CONTROL DATA**

Project: MI City - Borrow Source

Pace Project No.: 50318336

QC Batch: 680790

Analysis Method: SM 2540G

QC Batch Method: SM 2540G

Analysis Description: Dry Weight/Percent Moisture

Laboratory: Pace Analytical Services - Indianapolis

Associated Lab Samples: 50318336001, 50318336002

SAMPLE DUPLICATE: 3133033

Parameter	Units	50318275001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	16.3	15.7	4	5	N2

SAMPLE DUPLICATE: 3133034

Parameter	Units	50318275002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	15.7	15.5	1	5	N2

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### QUALITY CONTROL DATA

Project: MI City - Borrow Source

Pace Project No.: 50318336

QC Batch: 680679

Analysis Method: EPA 9045

QC Batch Method: EPA 9045

Analysis Description: 9045 pH

Laboratory: Pace Analytical Services - Indianapolis

Associated Lab Samples: 50318336001, 50318336002

SAMPLE DUPLICATE: 3132572

Parameter	Units	50318347001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.9	6.0	0	2	H3

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## QUALIFIERS

Project: MI City - Borrow Source

Pace Project No.: 50318336

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### 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 adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

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.

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

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

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

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

- |    |   |
|----|---|
| 1d | A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.   |
| B  | Analyte was detected in the associated method blank.  |
| H3 | Sample was received or analysis requested beyond the recognized method holding time.  |
| L1 | Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.   |
| M3 | Matrix spike recovery was outside laboratory control limits due to matrix interferences.  |
| N2 | The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request. |

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MI City - Borrow Source

Pace Project No.: 50318336

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50318336001	Borrow-Topsoil-1	EPA 3546	681329	EPA 8081	681407
50318336002	Borrow-Topsoil-2	EPA 3546	681329	EPA 8081	681407
50318336001	Borrow-Topsoil-1	EPA 3546	680762	EPA 8082	680814
50318336002	Borrow-Topsoil-2	EPA 3546	680762	EPA 8082	680814
50318336001	Borrow-Topsoil-1	EPA 3050	681420	EPA 6010	681685
50318336002	Borrow-Topsoil-2	EPA 3050	681420	EPA 6010	681685
50318336001	Borrow-Topsoil-1	EPA 7471	680993	EPA 7471	681401
50318336002	Borrow-Topsoil-2	EPA 7471	681059	EPA 7471	681281
50318336001	Borrow-Topsoil-1	EPA 3546	680862	EPA 8270	681220
50318336002	Borrow-Topsoil-2	EPA 3546	680862	EPA 8270	681220
50318336001	Borrow-Topsoil-1	EPA 8260	681185		
50318336002	Borrow-Topsoil-2	EPA 8260	681192		
50318336003	Trip Blank	EPA 8260	681192		
50318336001	Borrow-Topsoil-1	SM 2540G	680790		
50318336002	Borrow-Topsoil-2	SM 2540G	680790		
50318336001	Borrow-Topsoil-1	EPA 9045	680679		
50318336002	Borrow-Topsoil-2	EPA 9045	680679		

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**SAMPLE CONDITION UPON RECEIPT FORM**

Date/Time and Initials of person examining contents: BS 6-8-22 1123

1. Courier:  FED EX  UPS  CLIENT  PACE  USPS  OTHER \_\_\_\_\_
2. Custody Seal on Cooler/Box Present:  Yes  No  
 (If yes)Seals Intact:  Yes  No (leave blank if no seals were present)
3. Thermometer: 1 2 3 4 5 6 (A) B C D E F
4. Cooler Temperature(s): 0.9 / 0.9     
 (Initial/Corrected) RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)

5. Packing Material:  Bubble Wrap  Bubble Bags  
 None  Other \_\_\_\_\_
6. Ice Type:  Wet  Blue  None
7. If temp. is over 6°C or under 0°C, was the PM notified?:  Yes  No  
 Cooler temp should be above freezing to 6°C

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR, CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base preservation have been pH CHECKED?: Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.			✓
Short Hold Time Analysis (48 hours or less)? Analysis: TC	✓		Circle: HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9) Any non-conformance to pH recommendations will be noted on the container count form			✓
Time 5035A TC placed in Freezer or Short Holds To Lab Time: 11:33			Residual Chlorine Check (SVOC 625 Pest/PCB 608)	Present	Absent	N/A ✓
Rush TAT Requested (4 days or less):		✓	Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Custody Signatures Present?		✓	Headspace Wisconsin Sulfide?			✓
Containers Intact?: ✓	✓		Headspace in VOA Vials (>6mm): See Container Count form for details	Present	Absent	No VOA Vials Sent ✓
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID		✓	Trip Blank Present?	✓		
Extra labels on Terracore Vials? (soils only)		✓	Trip Blank Custody Seals?:	✓		

COMMENTS:

NO Sample ID or date on Borrow - Topsoil - 1 TC vials - BS 6-8-22



Sample Container Count

\*\* Place a RED dot on containers that are out of conformance \*\*

COC Line Item	WGFU	MeOH (only)	VIALS					AMBER GLASS					PLASTIC							OTHER		Matrix	Nitric	Sulfuric	Sodium Hydroxide	Sodium Hydroxide/ZnAc												
		SBS	DG9H	VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	VG9T	AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F		BP3S	BP3B	BP3Z	CG3H	Syringe Kit	Red	Yellow	Green	Black							
		R																																				
1	22	4																																SL	HNO3 <2	H2SO4 <2	NaOH >10	NaOH/Zn Ac >9
2	22	4																																				
3		3																																				
4																																						
5																																						
6																																						
7																																						
8																																						
9																																						
10																																						
11																																						
12																																						

Container Codes

Glass				Plastic			
DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass	BP1B	1L NaOH plastic	BP4U	125mL unpreserved plastic
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass	BP1N	1L HNO3 plastic	BP4N	125mL HNO3 plastic
DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass	BP1S	1L H2SO4 plastic	BP4S	125mL H2SO4 plastic
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass	BP1U	1L unpreserved plastic	<b>Miscellaneous</b>	
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass	BP1Z	1L NaOH, Zn, Ac		
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass	BP2N	500mL HNO3 plastic	Syringe Kit	LL Cr+6 sampling kit
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass	BP2C	500mL NaOH plastic	ZPLC	Ziploc Bag
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass	BP2S	500mL H2SO4 plastic	R	Terracore Kit
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic	SP5T	120mL Coliform Sodium Thiosulfate
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Ac	T	Tedlar Bag (air sample)
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass	BP3B	250mL NaOH plastic	U	Summa Can (air sample)
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic	WT	Water
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic-field filtered	SL	Solid Solid
BG1H	1L HCl clear glass	AG3SF	250mL H2SO4 amb glass -field filtered	BP3U	250mL unpreserved plastic	OL:	Oil
BG1S	1L H2SO4 clear glass	AG3U	250mL unpres amber glass	BP3S	250mL H2SO4 plastic	NAL	Non-aqueous liquid
GN	General	AG3C	250mL NaOH amber glass	BP3Z	250mL NaOH, ZnAc plastic	WP	Wipe

## **Attachment 5**

<b>TOPSOIL ANALYTICAL RESULTS</b>					
<b>COMPOUND</b>	<b>Soil Screening Levels</b>			<b>Topsoil Result Max (mg/kg)</b>	<b>NOTES</b>
	<b>Commercial/Industrial Direct Contact (mg/kg)</b>	<b>Residential Direct Contact (mg/kg)</b>	<b>Residential Soil Migration to Groundwater (mg/kg)</b>		
<b>RCRA METALS</b>					
Arsenic	30	9.5	5.9	12.6	
Barium	100,000	21,000	1,700	80.3	
Cadmium	100	9.9	NS	0.23J	
Chromium	100,000	100,000	1,000,000	12.3	
Lead	800	400	270	16.8	
Mercury	3.1	3.1	2.1	0.23J	
Selenium	5,800	550	5.3	1.3	
Silver	5,800	550	16	ND (<0.56)	
<b>VOCs</b>					
Acetone	100,000	98,000	74	0.047J	
<b>SVOCs</b>					
ALL NON-DETECT					
<b>PCBs</b>					
ALL NON-DETECT					
<b>PESTICIDES</b>					
ALL NON-DETECT					

Notes:

1) Indiana Department of Environmental Management 2022 Table A-6 screening level for industrial/commercial soil available:

<https://www.in.gov/idem/cleanups/resources/technical-guidance-for-cleanups/idem-screening-and-closure-level-tables/>

mg/kg= milligram per kilogram

NS = no standard

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

PCBs= polychlorinated biphenyls

VOCs= volatile organic compounds

SVOCs= semi-volatile organic compounds