Lauridsen, Keld B - DNR

From: Lauridsen, Keld B - DNR
Sent: Tuesday, November 29, 2022 9:09 PM
To: Mrotek, Melissa A
Subject: FW: Asphalt parking lot question

Melissa,

Attached below is the DNR response regarding the asphalt generated during the crane pad construction. It is acceptable to recycle this material.

Let me know if you need anything else.

Thanks,

-Keld

We are committed to service excellence.
Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Keld B. Lauridsen
Phone: (920) 510 8294
Keld.Lauridsen@wisconsin.gov

From: DuFresne, Kristin I - DNR <Kristin.DuFresne@wisconsin.gov>
Sent: Tuesday, November 29, 2022 3:11 PM
To: Theresa.Lehman@Miron-Construction.com
Cc: Lauridsen, Keld B - DNR <Keld.Lauridsen@wisconsin.gov>; Strom Hiorns, Kathryn M - DNR <KathrynM.StromHiorns@wisconsin.gov>; DuFresne, Kristin I - DNR <Kristin.DuFresne@wisconsin.gov>
Subject: FW: Asphalt parking lot question

Theresa – Thank you for your November 7, 2022 email to Kate Strom Hiorns regarding the asphalt parking lot question.

The Department of Natural Resources Waste and Materials Management (WA) and Remediation and Redevelopment (RR) programs have discussed your email and supplemental information provided to the RR program by Georgia-Pacific. The department has determined it is acceptable to recycle the asphalt in the crane pad area provided the attached soil is removed prior to the asphalt being transported off-site.

Please feel free to contact the department if you have any additional questions.

Thank you.

We are committed to service excellence.
Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Kristin DuFresne
Phone: 920-662-5128
Cell Phone: 920-492-8362
Kristin.dufresne@wisconsin.gov

From: Strom Hiorns, Kathryn M - DNR <KathrynM.StromHiorns@wisconsin.gov>
Sent: Friday, November 18, 2022 10:51 AM
To: DuFresne, Kristin I - DNR <Kristin.DuFresne@wisconsin.gov>
Subject: FW: Asphalt parking lot question

From: Theresa Lehman <Theresa.Lehman@Miron-Construction.com>
Sent: Monday, November 7, 2022 2:02 PM
To: Strom Hiorns, Kathryn M - DNR <KathrynM.StromHiorns@wisconsin.gov>
Subject: Asphalt parking lot question

Hi Kate,

I left you a voicemail earlier but wanted to follow up with an email to get your advice on how we should dispose of an asphalt parking lot that is over the top of soil that is contaminated with PFAS.

The client is Georgia Pacific. They are directly working w/ the DNR on the permitting issues relative to the removal of the soil.

We are wondering if the asphalt, which is under our contract to remove, needs to dispose of as contaminated along with the soil, or if it can be recycled normally?

If you can advise, that would be greatly appreciated. Or, if there is a different person I should contact, could you please forward me that individual's contact information?

Thank you so much for your time.

Theresa Lehman, LEED Fellow, LEED AP BD+C, ID+C, WELL AP, Fitwel Ambassador
Director, Sustainable Services
theresa.lehman@miron-construction.com

Miron Construction Co., Inc.
PH 920.969.7314 | FX 920.969.7393
1471 McMahon Drive | Neenah, WI 54956
MIRON-CONSTRUCTION.COM

Lauridsen, Keld B - DNR

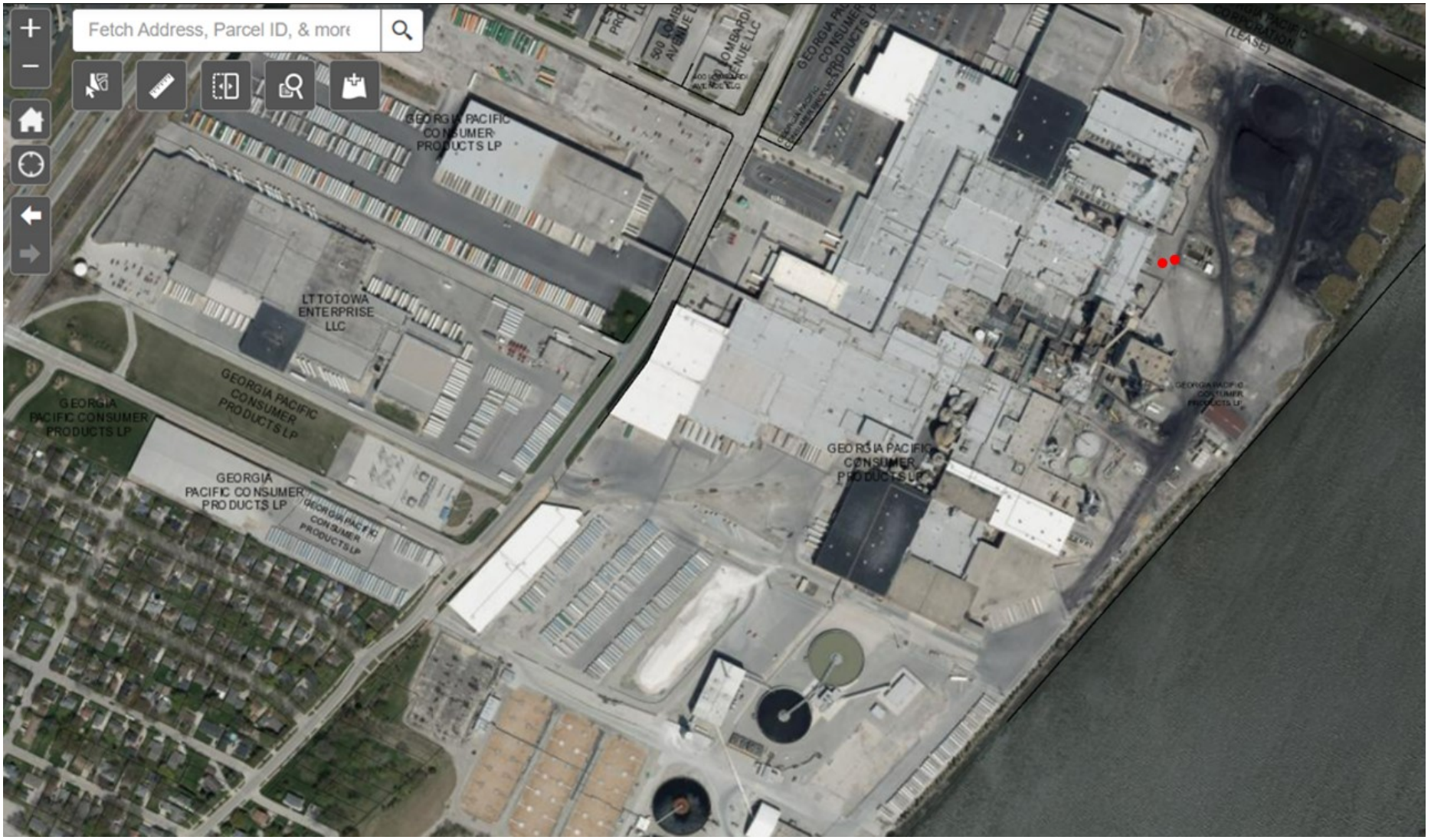
From: Mrotek, Melissa A <MELISSA.MROTEK@GAPAC.com>
Sent: Friday, November 11, 2022 10:31 AM
To: Lauridsen, Keld B - DNR
Cc: Beaulieu, Jacquelyn Marie
Subject: Georgia-Pacific Crane Pad Soil Boring Additional Information
Attachments: DRAFT_Technical Memo_GP PM8 Crane Pad - scenarios - 08242022.pdf; 40246079 _frc.pdf

Keld – per our conversation earlier this week, attached is the requested information needed to determine the path forward with the asphalt for the crane pad area. Below is the aerial overview of where the soil borings/samples were taken. A number of borings were completed, but only borings B-3 and B-5 are in the excavation area and shown on the aerial below. The soil borings were 20' in depth and the soil from the two borings was placed in a barrel and the sample was collected as a composite of the soil. So there was no specific depth at which the samples were collected. The soil was simply mixed and the sample was collected.

Page 5 of the first attached document displays the boring logs. Please see borings B-3 and B-5 (tables 5 and 7 respectively) as those were the borings used for the sampling. See page 45 of the second attached document for the PFAS results of soil sample from borings B-3 and B-5, both of which were J-flagged.

Please let me know if you need any additional information or have any further questions. Also please let me know what your thoughts are on the disposal of the asphalt.

Thanks,
Melissa


Fetch Address, Parcel ID, & more
GEORGIA PACIFIC CONSUMER PRODUCTS LP
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GEORGIA PACIFIC CONSUMER PRODUCTS LP
GEORGIA PACIFIC CONSUMER PRODUCTS LP
GEORGIA PACIFIC CONSUMER PRODUCTS LP
GEORGIA PACIFIC CONSUMER PRODUCTS LP
GEORGIA PACIFIC CONSUMER PRODUCTS LP

AECOM
2985 South Ridge Road, Suite B
Green Bay, WI 54304
aecom.com

Project name:
GP PM8 Crane Pad

Project ref:
60685247

From:
Suhaib Ibrahim

Date:
August 24, 2022

DRAFT

To:
Ryan Baumeister
Project Engineer
Georgia-Pacific
Green Bay Broadway Mil
1919 S. Broadway
Green Bay, WI 54304

Memo

Subject: Geotechnical Evaluation of Crane Pad for the #8 Paper Machine Rebuild Project at the Georgia-Pacific Broadway Mill in Green Bay, Wisconsin

This technical memorandum (memo) summarizes the results of the subsurface investigation and preliminary geotechnical engineering evaluation completed by AECOM Technical Services, Inc. (AECOM) for a temporary crane foundation system to be used as part of the #8 Paper Machine Rebuild Project. The following technical memo contains the logs of five (5) soil borings that were performed within the proposed crane pad footprint. Also included are the preliminary results from the geotechnical engineering analysis of subsurface conditions and recommendations for the temporary crane pad foundation system.

1. Project Description

AECOM understands that Georgia-Pacific (G-P) will be rebuilding the #8 Paper Machine at the Broadway Mill. To facilitate the construction activities, a large crawler mounted crane will be utilized to move equipment into the working area. We understand the Miron Construction (Miron) is planning to use a Manitowoc MLC650 VPC-Max crane to perform picks requiring a reach of as much as 320 feet. Contact pressures below the crane tracks have not been provided at this time but the total weight of the crane is estimated to be approximately 2,000,000 pounds during pick activities.

Several private underground utilities are present beneath the proposed crane pad location. Underground utilities below and adjacent to the crane pad include electrical conduit, natural gas lines, effluent sewer and storm sewer. In addition, the crane pad will be adjacent to Building 79 and will be in the vicinity of Building 90. We understand that Building 79 is slab on grade construction with no basement.

2. Procedures

2.1 Soil Boring Coordination and Layout Procedures

Five (5) soil borings, identified as B-1 through B-5, were completed in a paved area located east of existing Building 79. The borings were completed by Subsurface Exploration Services, LLC (SES) under subcontract to AECOM on June 6 through 7, 2022. A summary of the subsurface investigation performed at the site is presented in Table

1. Boring locations were field located by an AECOM field technician and reviewed by G-P. Additionally, AECOM's retained a private utility locater to scan the proposed boring locations for underground utilities and obstructions. Borings were adjusted in the field prior to drilling to avoid underground structures. Prior to start of drilling, an excavation permit to document the locations of known underground obstructions and acceptance of the proposed boring locations by G-P was completed. Approximate locations of the drilled boring locations are presented on Figure 1 of the Attachments. Boring coordinates and existing ground surface elevation are shown on the representative boring logs included in the Attachments and in Table 1.

Table 1. Summary of Geotechnical Investigation - #8 Paper Machine Rebuild

Boring	Latitude[1] [degree]	Longitude[1] [degree]	Northing[2] [feet]	Easting[2] [feet]	Approximate Surface Elevation[3] [feet NAVD88]	Boring Termination Depth [feet bgs]	Boring Termination Elevation [feet NAVD88]
B-1	44.49316	-88.03134	1873.404	4599.063	588.5	20.0	568.5
B-2[4]	44.49335	-88.03122	1873.423	4674.490	588.5	9.7[5]	578.8
B-3	44.49320	-88.03109	1819.979	4642.763	587.9	20.0	567.9
B-4	44.49309	-88.03114	1806.026	4599.125	588.0	20.0	568.0
B-5	44.49328	-88.03101	1812.819	4674.544	588.2	20.0	568.2

Notes: "bgs" = below ground surface

1. Latitude and longitude estimated using Google Earth.
2. Northing and easting values references to plant datum.
3. Elevation based on topographic survey of existing conditions dated 2021.
4. Obstruction was encountered at 3 feet bgs, boring was offset 5 feet northeast of location and blind drilled to 2.5 feet.
5. Boring refusal was encountered at termination depth due to unknown obstruction.

2.2 Drilling and Sampling Procedures

The borings were completed by a two-person SES drill crew using a Deidrich D-50 truck mounted drill rig. In general, the soil borings were advanced using continuous flight solid-stem augers until the boring termination depth or practical refusal, whichever occurred first.

Soil sampling was performed at 2.5-foot intervals to a depth of 15 feet and a final sample taken from 18.5 to 20 feet below ground surface (bgs). Soil samples were obtained using a 2-inch diameter split-spoon accordance with ASTM D1586. Details pertaining to drilling method and sampling interval are presented on the individual boring logs included in the Attachments.

A log of the soil samples obtained from the borings was maintained by the drill crew during drilling operations. Soil samples were placed in sealed jars and delivered to our AECOM Oshkosh location for additional index testing. Upon boring completion, the boreholes were backfilled with chipped bentonite and capped with asphalt to match existing surface conditions.

2.3 Geotechnical Field Testing Procedures

Soil samples were classified in accordance with the AECOM Soil Classification System, which is included in the Attachments. Estimated soil group symbols presented in parentheses following the soil descriptions on the boring logs are in general conformance with the Unified Soil Classification System (USCS), which serves as the basis of the AECOM Soil Classification System. A brief explanation of the classification of soil samples is presented in the AECOM Field and Laboratory Procedures included in the Attachments.

The relative density of encountered granular soils was estimated in-situ through the Standard Penetration Test (SPT) using a calibrated 140-lb automatic hammer. For purposes of this report, the energy efficiency of the automatic hammer was evaluated at 80 percent. As outlined in ASTM Standard D1586, the SPT resistance (N-

value) of split spoon samples is based on the blows required to advance the sampler over two (2) successive 6-inch intervals after a 6-inch initial set. Where cohesive soils were encountered, the unconfined compressive strength was estimated using a calibrated hand penetrometer on recovered disturbed SPT samples. Results from the field tests are plotted on the boring logs included in the Attachments.

2.4 Geotechnical Laboratory Testing

Geotechnical laboratory analysis of recovered soil samples consisted of moisture content testing. Results from the laboratory testing are plotted on the boring logs included in the Attachments.

2.5 Boring Log Procedures and Qualifications

General material descriptions are noted on the individual boring logs. Additionally, select results from the field and laboratory tests are plotted on the representative boring logs. It should be noted that the strata contact lines represent approximate boundaries between encountered soil types; the actual transition between soil types in the field may be gradual in both the horizontal and vertical directions. Subsurface conditions and groundwater levels at other locations may differ from the conditions encountered at the boring locations. Furthermore, the subsurface conditions may change over time. These variables need proper assessment when utilizing the information presented on the boring logs.

3. Exploration Results

3.1 Existing Site Conditions

At the time of the subsurface investigation, the location of the proposed crane pad consisted of an asphalt surface. Based on available site topographic data, the surface elevation at the boring locations ranged between +588.5 and +587.9 feet. Asphalt thickness at the boring locations ranged between 3 and 4 inches.

3.2 Subsurface Conditions

The general soil profile encountered in the borings consisted of surficial asphalt underlain by fill materials and native cohesive soils. A general summary of the encountered soil profile is presented in Table 2. Soil profile summaries for each boring location are presented in Tables 3 through 7.

Below the asphalt, fill materials encountered in the borings consisted of roadway base course underlain by clay or sand fill soils. At boring location B-2, a layer of fill consisting of rubble (brick, rubber, and rock fill) was encountered below base course. At location B-1, a seam of coal was encountered below base course. Coal was also encountered at boring location B-2 below rubble. In general, fill soils consisted of clay except at boring location B-4 where loose to very loose sand was encountered. Native clays were encountered below the fill materials at all boring locations except B-2 where practical auger refusal was encountered at 9.7 feet bgs.

Table 2. General Soil Profile - #8 Paper Machine Rebuild

Unit Description	Top of Unit Depth Range [feet bgs]	Top of Unit Elevation Range [feet NAVD88]	Unit Thickness Range [feet]
Asphalt	0.0	588.5 to 587.9	0.3 to 0.4
Base Course[1]	0.3	588.2 to 587.9	1.2 to 4.2
Fill Materials	0.3 to 4.5	587.7 to 584.0	0.5 to 10.7
Clay	2.0 to 11.0	586.5 to 577.0	-[2]

Notes:

1. Base course not encountered in borings B-3 and B-4
2. Thickness of layer unknown. All borings except B-2 were terminated in the native clay layer.

Table 3. Summary of Boring B-1 Soil Profile

Layer	Top of Unit Depth [feet bgs]	Top of Unit Elevation [feet NAVD88]	Unit Thickness [feet]	Moisture Content Range [%]	SPT N-Range [blows/ft]	Relative Density / Consistency
Asphalt	0.0	588.5	0.3	-	-	-
Base Course	0.3	588.2	1.2	20	18	Medium Dense
Coal Ash	1.5	587.0	0.5	-	10	Medium Dense
Clay	2.0	586.5	12.5	23 - 31	7 - 19	Hard to Very Stiff
Clay	12.5	576.0	2.0	42	5	Stiff
Clay	14.5	574.0	$\geq$ 5.5	33 - 34	WOH - 2	Very Soft
End of Boring	20.0	568.5	-	-	-	-

Table 4. Summary of Boring B-2 Soil Profile

Layer	Top of Unit Depth [feet bgs]	Top of Unit Elevation [feet NAVD88]	Unit Thickness [feet]	Moisture Content Range [%]	SPT N-Range [blows/ft]	Relative Density / Consistency
Asphalt	0.0	588.5	0.3	-	-	-
Base Course	0.3	588.2	4.2	7 - 8	22 - 76	Med. to V. Dense
Fill Material	4.5	584.0	2.5	22	24	Medium Dense
Coal	7.0	581.5	2.7	-	WOH	Very Loose
End of Boring	9.7	578.8	-	-	-	-

Table 5. Summary of Boring B-3 Soil Profile

Layer	Top of Unit Depth [feet bgs]	Top of Unit Elevation [feet NAVD88]	Unit Thickness [feet]	Moisture Content Range [%]	SPT N-Range [blows/ft]	Relative Density / Consistency
Asphalt	0.0	587.9	0.3	-	-	-
Fill: Clay	0.3	587.6	2.2	10	17	Stiff
Fill: Clay	2.5	585.4	2.0	24	-	Stiff
Fill: Clay	4.5	583.4	5.0	25 - 27	2 - 5	Soft to V. Stiff
Clay	9.5	578.4	≥ 10.5	23 - 26	8 - 14	Stiff to V. Stiff
End of Boring	20.0	567.9	-	-	-	-

Table 6. Summary of Boring B-4 Soil Profile

Layer	Top of Unit Depth [feet bgs]	Top of Unit Elevation [feet NAVD88]	Unit Thickness [feet]	Moisture Content Range [%]	SPT N-Range [blows/ft]	Relative Density / Consistency
Asphalt	0.0	588	0.3	-	-	-
Fill: Sand	0.3	587.7	2.2	8	7	Loose
Fill: Sand	2.5	585.5	8.5	8 - 26	3 - 7	V. Loose to Loose
Clay	11.0	577.0	≥ 9.0	22 - 23	6 - 38	Very Stiff
End of Boring	20.0	568.0	-	-	-	-

Table 7. Summary of Boring B-5 Soil Profile

Layer	Top of Unit Depth [feet bgs]	Top of Unit Elevation [feet NAVD88]	Unit Thickness [feet]	Moisture Content Range [%]	SPT N-Range [blows/ft]	Relative Density / Consistency
Asphalt	0.0	588.2	0.3	-	-	-
Base Course	0.3	587.9	2.2	7	59	Very Dense
Fill: Clay	2.5	585.7	7.0	19 - 32	4 - 12	Very Stiff
Clay	9.5	578.7	≥ 10.5	22 - 23	7 - 9	Very Stiff
End of Boring	20.0	568.2	-	-	-	-

3.3 Groundwater Conditions

Groundwater was encountered at boring locations B-1 and B-2 at depths of 18.9 and 6.8 feet bgs (+569.6 and +581.7 feet NAVD88), respectively. Groundwater was not observed at locations B-3 through B-5 during drilling operations. The variance in observed groundwater measurements is likely due to the presence of low permeability cohesive soil present at the site. Historical borings completed near the proposed crane pad area, groundwater, where encountered, has ranged between +584 and +582 feet elevation. Based on historical observations, we anticipate the groundwater elevation encountered in boring B-2 is more representative of actual site conditions.

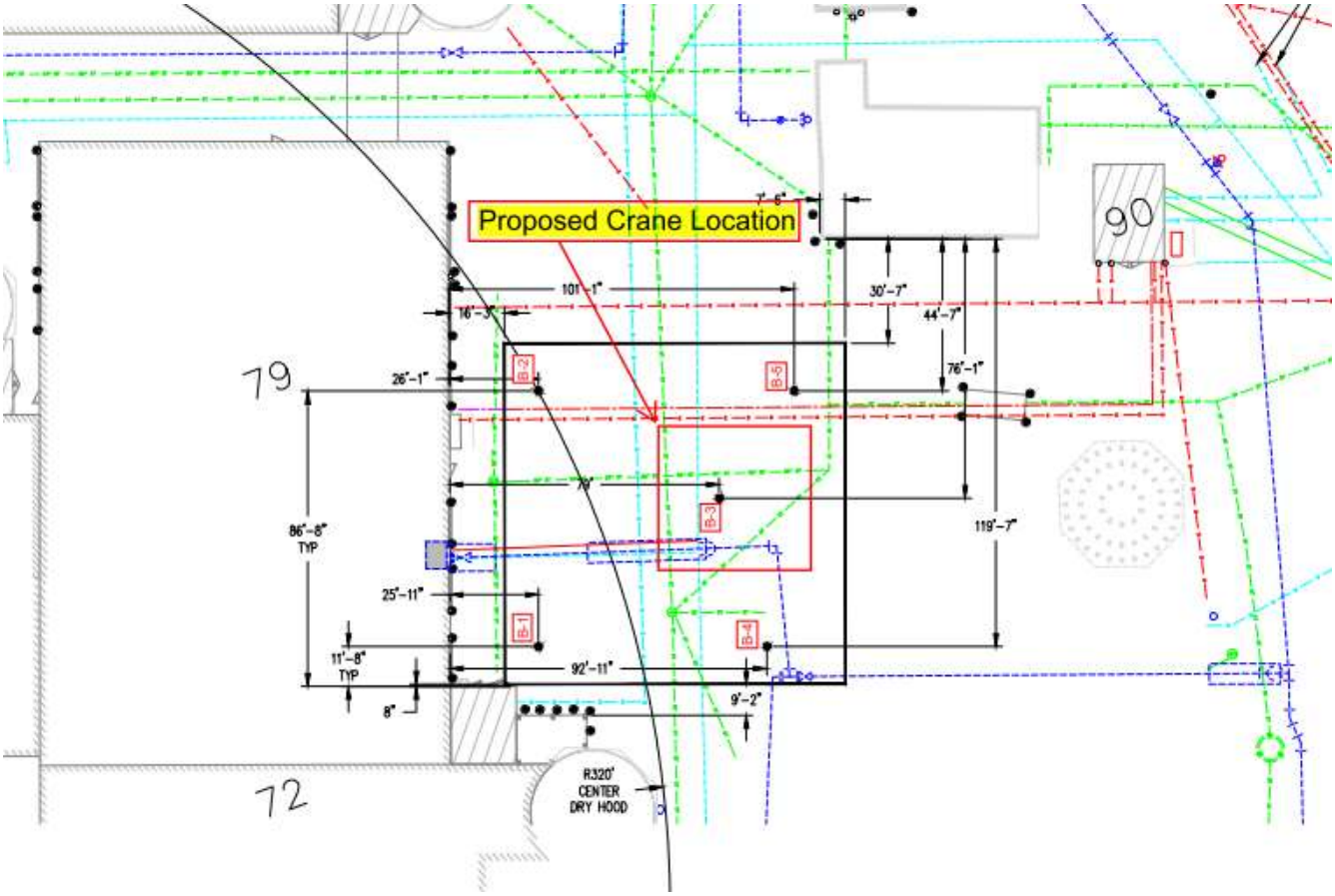
It should be noted that groundwater level fluctuations may occur with time and seasonal changes due to precipitation, evaporation, surface water runoff, and local dewatering. Perched water pockets and a higher water

table level, as encountered at the boring locations, may also occur during wet weather periods. If the long-term groundwater elevation is required for design, we recommend a temporary monitoring well be installed.

4. Analysis and Recommendations

4.1 Crane Pad Location

It is not recommended to place the crane pad in the area of borings B-1 and B-2 due to the very soft clay soils encountered in boring B-1 at a depth below 14.5 bgs, and B-2 hitting refusal at a depth of 9.7 feet bgs (potentially due to an existing basement). It is recommended that the crane pad to be placed in the area of B-3, B-4, and B-5.



If placing the crane pad in the area of borings B-3, B-4, and B-5 is not possible, additional recommendations for other alternatives (i.e. pile supported footing at the location of B-1) can be provided.

4.2 Foundation Recommendations

Based on the encountered soil profile from borings B-3, B-4, and B-5,it is not recommended that the crane pad is supported at the surface without additional preparation and improvement.

Boring B-3 noted very soft clay soil at a depth about 5 feet, boring B-4 noted sand fill with low blow counts below the pavement that doesn't provide sufficient bearing capacity for the crane pad. The best soil conditions of the five borings performed were observed at boring B-5. Due to the variability in the ground conditions observed between the borings, it is not recommended that the crane pad is installed in this locations without additional site preparation to evaluate and address unsuitable soils which may be present.

We recommend that unsuitable soils be removed when encountered during construction and backfilled with granular fill with a gradation similar to1-1/4" dense graded basecourse. Based on the boring logs, around 6 feet of undercuts is anticipated at B-3 and B-4. At B-5, the surface pavement could be rubblized and leveled to prepare the surface for the placement of the crane matting. Excavations should extend laterally one foot beyond the edge of the crane pad for each foot of depth of over excavation. The surface at the base of the excavations, or at the ground surface at B-5, should be proofrolled and compacted with vibratory compaction equipment to evaluate for the presence of additional soft or loose material. It should be noted that inconsistencies in the soils were noticed across the borings and more undercuts may be required during construction if additional unsuitable soils are encountered. It is also recommended to build the granular platform up to two feet above surface. The 8-foot granular platform will help to more evenly distribute the load from the crane pad to the soils below.

For the crane pad bearing on compacted granular fill, net ultimate and net allowable bearing pressures of 16,500 psf and 5,500 psf can be utilized for design, respectively.

We recommend that the excavations be observed by a qualified representative to document that the bearing soils are similar to those encountered during our exploration. Unsuitable soils within the crane pad footprint may be completely removed and replaced with structural fill. Granular fill should be placed and compacted to 95 percent the maximum dry density as determined by the modified Proctor test (ASTM D1557). Unsuitable soils should be removed in a zone extending 1 foot horizontally beyond all edges of the crane pad for each vertical foot of structural fill placed beneath the foundation (1H:1V).

5. General Qualifications

This memo has been prepared in general accordance with normally accepted geotechnical engineering practices to aid in the evaluation of this site and to assist our Client in the design of this project. We have prepared this memo for the purpose intended by our Client, and reliance on its contents by anyone other than our Client is done at the sole risk of the user. No other warranty, either expressed or implied, is made. The scope is limited to the specific project and location described herein, and our description of the project represents our understanding of the significant aspects relevant to the geotechnical characteristics. In the event that any changes in the design or location of the facilities as outlined in this report are planned, we should be informed so that the changes can be reviewed and the conclusions of this report modified as necessary in writing by the geotechnical engineer. As a check, we recommend that we be authorized to review the project plans and specifications to confirm that the recommendations contained in this report have been interpreted in accordance with our intent. Without this review, we will not be responsible for the misinterpretation of our data, our analysis, and/or our recommendations, nor how these are incorporated into the final design.

The analysis and recommendations submitted in this report are based on the data obtained from the soil borings performed at the locations indicated on the location diagram and from the information discussed in this report. This report does not reflect any variations which may occur between the borings. In the performance of subsurface explorations, specific information is obtained at specific locations at specific times. However, it is a well-known fact that variations in soil and rock conditions exist on most sites between boring locations and that seasonal and annual fluctuations in groundwater levels will likely occur. The nature and extent of variations may not become

evident until the course of construction. If variations then appear evident, it will be necessary for a re-evaluation of the recommendations contained in this report after performing on-site observations during the construction period and noting the characteristics of the variations.

The geotechnical engineer of record is the professional engineer who authored the geotechnical memo. It is recommended that all construction operations dealing with earthwork and foundations be observed by the geotechnical engineer of record or the geotechnical engineer's appointed representative to confirm that the design requirements are fulfilled in the actual construction. For some projects, this may be required by the governing building code.

6. Closing

We appreciate this opportunity to be of service to you. If there are any questions regarding the information contained in this report, or if we may be of further assistance, please feel free to contact us.

Respectfully,

AECOM Technical Services, Inc.

Suhaib Ibrahim
Project Engineer
suhaib.ibrahim@aecom.com

Jeremy Thomas, P.E.
Associate
jeremy.thomas@aecom.com

Attachments:
Boring Location Plan
Soil Boring Logs
Soil Parameters Tables

121

110

79

72

90

Proposed Crane Location

B-1

B-2

B-3

B-4

B-5

101'-1"

16'-3"

26'-1"

79'

86'-8" TYP

25'-11"

11'-8" TYP

8"

92'-11"

7'-6"

9'-2"

30'-7"

44'-7"

76'-1"

119'-7"

R320' CENTER DRY HOOD

WATER AND ELECTRIC TO OLD COAL DUST SPRAY TOWERS REMOVED FROM HERE NORTH

48" MILL SEWER ~3'-6" DEEP

NORTH

UTILITY LOCATION COLOR CODES

RED: ELECTRIC POWER LINES, CABLES, CONDUIT AND LIGHTING

PINK: GAS, OIL, STEAM, PETROLEUM OR GASEOUS MATERIALS

ORANGE: COMMUNICATION, CABLE TV, ALARM OR SIGNAL, CABLES OR CONDUIT

BLUE: WATER, IRRIGATION, SLURRY LINES, PROCESS LINES

GREEN: SEWERS & DRAIN LINES

YELLOW: TEMPORARY AND MARKINGS

CYAN: ABANDONED

AECOM	CLIENT: **Georgia-Pacific**	LOG OF BORING NUMBER: **B-1**
	PROJECT NAME: **GP PM8 Crane Pad**	ARCHITECT-ENGINEER: **AECOM**

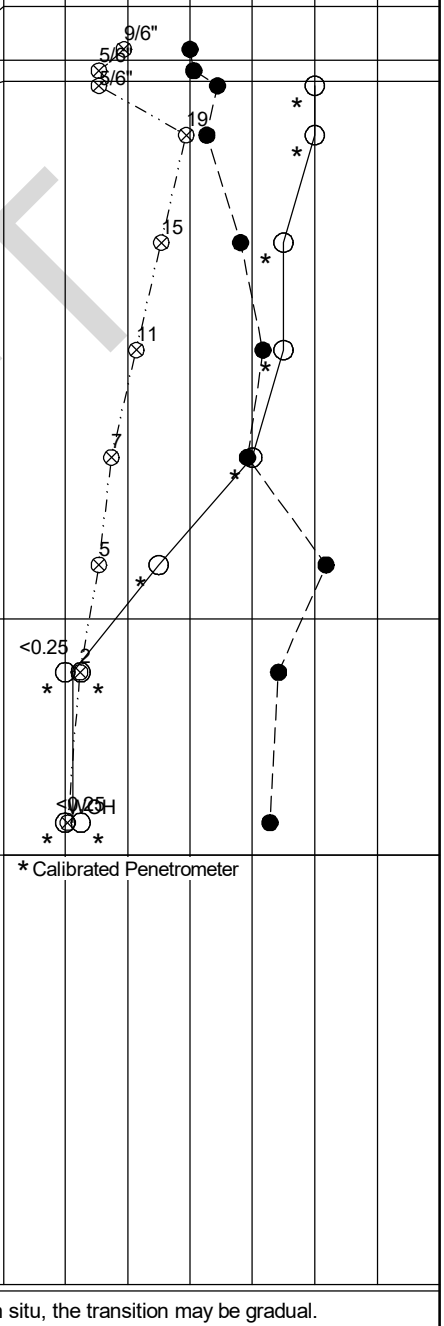
SITE LOCATION: **GP Broadway Mill, Green Bay, WI**

DEPTH(FT)	ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
						SURFACE ELEVATION +588.5	
			PA			0.3 Asphalt - 3 inches	
						Base course	
		1A	SS			1.5	
		1B	SS			2.0 Coal ash - black	
		1C	SS			Clay - brown - hard to stiff (CL)	
		2	SS				
			PA				
5.0							
		3	SS				
			PA				
		4	SS				
			PA				
10.0							
		5	SS				
			PA				
		6	SS				
			PA			14.5	
15.0						Clay - brown - very soft (CL)	
		7	SS				
			PA				
		8	SS				
20.0						20.0	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/(FT) (10 20 30 40 50)



* Calibrated Penetrometer

End of Boring
Boring advanced to 20.0 feet with power auger.
Standard Penetration Test performed with automatic hammer.
Boring backfilled with chipped bentonite and asphalt patch.

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

LATITUDE **44.49316**	BORING STARTED **6/6/22**	AECOM OFFICE **Green Bay, WI**	
LONGITUDE **-88.03134**	BORING COMPLETED **6/6/22**	ENTERED BY **MLB**	SHEET NO. **1** OF **1**
WL **18.9 WS**	RIG/FOREMAN **D-50/DM (SES)**	APP'D BY	AECOM JOB NO. **60685247**

AECOM LOG 6068247_GP PM8 CRANE PAD.GPJ FS_DATATEMPLATE.GDT 7/15/22

AECOM	CLIENT: **Georgia-Pacific**	LOG OF BORING NUMBER: **B-2**
	PROJECT NAME: **GP PM8 Crane Pad**	ARCHITECT-ENGINEER: **AECOM**

SITE LOCATION: **GP Broadway Mill, Green Bay, WI**

SURFACE ELEVATION +588.5

DEPTH(FT)	ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}	UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} / PLASTIC LIMIT % / WATER CONTENT % / LIQUID LIMIT % / STANDARD PENETRATION BLOWS/(FT)
			PA			0.3 Asphalt - 4 inches Base course		
		1	SS			*Obstruction at 3 feet, boring offset 5 feet northeast. Blind drill to 2.5 feet and resume sampling.*		76
		2	SS					22
			PA			4.5		
5.0		3	SS			Fill: brick, rubber, and rock fill		24
			PA			7.0		
		4	SS			Coal *Driller note: no cutting return while drilling from 6.5 to 9.7 feet* *Auger refusal at 9.7 feet*		WOH
9.7		5	PA SS			9.7		50/0.0"
						End of Boring Boring advanced to 9.7 feet with power auger. Standard Penetration Test performed with automatic hammer. Boring backfilled with chipped bentonite and asphalt patch.		

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

LATITUDE **44.49335**	BORING STARTED **6/6/22**	AECOM OFFICE **Green Bay, WI**	
LONGITUDE **-88.03122**	BORING COMPLETED **6/6/22**	ENTERED BY **MLB**	SHEET NO. **1** OF **1**
WL **6.8 AB**	RIG/FOREMAN **D-50/DM (SES)**	APP'D BY	AECOM JOB NO. **60685247**

AECOM	CLIENT: **Georgia-Pacific**	LOG OF BORING NUMBER: **B-3**
	PROJECT NAME: **GP PM8 Crane Pad**	ARCHITECT-ENGINEER: **AECOM**

SITE LOCATION: **GP Broadway Mill, Green Bay, WI**

SURFACE ELEVATION +587.9

DEPTH(FT)	ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
			PA			0.3 Asphalt - 4 inches
		1	SS			Fill: Clay with sand and gravel - brown - stiff
						2.5
		2	SS			Fill: Clay - trace gravel - stiff
			PA			4.5
5.0		3	SS			Fill: Clay with ash - brown - soft to very stiff
			PA			
		4	SS			
			PA			9.5
10.0		5	SS			Clay - brown - stiff to very stiff (CL)
			PA			
		6	SS			
15.0			PA			
		7	SS			
			PA			
		8	SS			
20.0						20.0

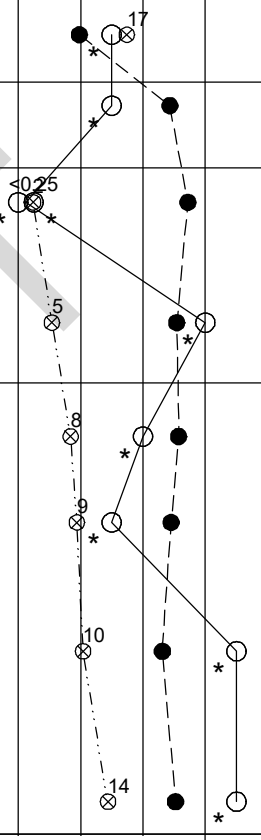
End of Boring
Boring advanced to 20.0 feet with power auger.
Standard Penetration Test performed with automatic hammer.
Boring backfilled with chipped bentonite and asphalt patch.

UNIT DRY WT. LBS./FT.^{3}

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/(FT) (10 20 30 40 50)



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

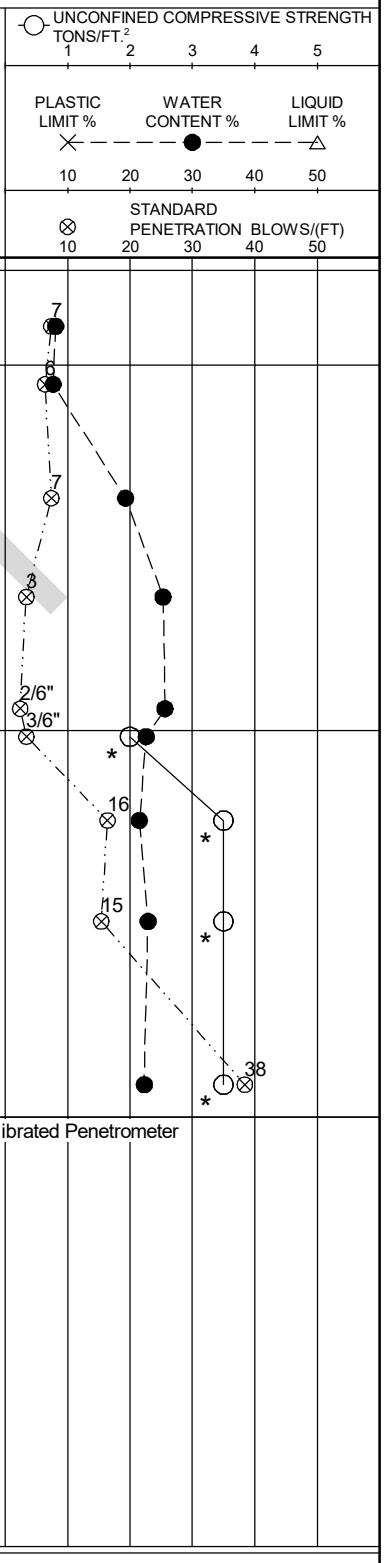
LATITUDE **44.4932**	BORING STARTED **6/7/22**	AECOM OFFICE **Green Bay, WI**	
LONGITUDE **-88.03109**	BORING COMPLETED **6/7/22**	ENTERED BY **MLB**	SHEET NO. **1** OF **1**
WL	RIG/FOREMAN **D-50/DM (SES)**	APP'D BY	AECOM JOB NO. **60685247**

AECOM LOG 6068247_GP PM8 CRANE PAD.GPJ FS_DATATEMPLATE.GDT 7/15/22

AECOM	CLIENT: **Georgia-Pacific**	LOG OF BORING NUMBER: **B-4**
	PROJECT NAME: **GP PM8 Crane Pad**	ARCHITECT-ENGINEER: **AECOM**

SITE LOCATION: **GP Broadway Mill, Green Bay, WI**

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
					SURFACE ELEVATION +588.0	
		PA			0.3 Asphalt - 4 inches	
	1	SS			Fill: Sand and gravel - brown - loose	
					2.5	
	2	SS			Fill: Sand - trace gravel - brown - loose to very loose	
		PA				
5.0	3	SS				
		PA				
	4	SS				
		PA				
10.0	5A	SS			11.0	
	5B	SS			Clay - brown - very stiff (CL)	
		PA				
	6	SS				
		PA				
15.0	7	SS				
		PA				
	8	SS				
20.0					20.0	
					End of Boring Boring advanced to 20.0 feet with power auger. Standard Penetration Test performed with automatic hammer. Boring backfilled with chipped bentonite and asphalt patch.	



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

LATITUDE **44.49309**	BORING STARTED **6/7/22**	AECOM OFFICE **Green Bay, WI**	
LONGITUDE **-88.03114**	BORING COMPLETED **6/7/22**	ENTERED BY **MLB**	SHEET NO. **1** OF **1**
WL	RIG/FOREMAN **D-50/DM (SES)**	APP'D BY	AECOM JOB NO. **60685247**

AECOM LOG 6068247_GP PM8 CRANE PAD.GPJ FS_DATATEMPLATE.GDT 7/15/22

AECOM	CLIENT: **Georgia-Pacific**	LOG OF BORING NUMBER: **B-5**
	PROJECT NAME: **GP PM8 Crane Pad**	ARCHITECT-ENGINEER: **AECOM**

SITE LOCATION: **GP Broadway Mill, Green Bay, WI**

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT.² (1 2 3 4 5); PLASTIC LIMIT % / WATER CONTENT % / LIQUID LIMIT % (10 20 30 40 50); STANDARD PENETRATION BLOWS/(FT) (10 20 30 40 50)
				SURFACE ELEVATION +588.2		
		PA		0.3 Asphalt - 4 inches Base course		
	1	SS		2.5		59
	2	SS		Fill: Clay - trace coal and gravel - brownish gray to gray - very stiff		12, 7, 4
5.0		PA				
	3	SS				
		PA				
	4	SS				
		PA		9.5		
10.0				Clay - brown - very stiff (CL)		9, 8, 7, 8
	5	SS				
		PA				
	6	SS				
15.0		PA				
	7	SS				
		PA				
	8	SS				
20.0				20.0		
				End of Boring Boring advanced to 20.0 feet with power auger. Standard Penetration Test performed with automatic hammer. Boring backfilled with chipped bentonite and asphalt patch.		* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

LATITUDE: **44.49328**	BORING STARTED: **6/7/22**	AECOM OFFICE: **Green Bay, WI**	
LONGITUDE: **-88.03101**	BORING COMPLETED: **6/7/22**	ENTERED BY: **MLB**	SHEET NO.: **1** OF: **1**
WL	RIG/FOREMAN: **D-50/DM (SES)**	APP'D BY	AECOM JOB NO.: **60685247**

Project #
60685247
Soil Material Properties
GP PM8 Crane Pad

Formal Boring Log ID	B-1
Field Log Boring ID	B-1
Date Drilled	6/6/2022
Boring Ground Elevation [ft]	588.5
Depth to water [ft]	6.5
Hammer Efficency (ER)	80

		Elevation [ft LWD]		Depth [ft]				1	2	3		4	5	6	7	8	9	10	11	12	13	14	15	16	17 Naval DM7	18 Naval DM7	19 Empirical	20 Empirical	21	22 Naval DM7	23 Empirical su(N60) [psf]	24 Empirical	25	26	27 Empirical	28 Empirical	29 Empirical	30 Empirical
Soil Type	USCS	Top	Bottom	Top	Bottom	Thickness [ft]	Sample Number	N	ω [%]	Qp_{low}	Qp_{high}	C_N	nH	nB	nS	nR	N1	N_{60}	$(N1)_{60}$	c [psf]	γ_{DRY} [pcf]	γ [pcf]	γ' [pcf]	σ_{avg}' [psf]	Dr [%]	ϕ' [degree]	Dr	ϕ' [degree]	C'	cu [psf]	su(N60) [psf]	σ_c' [psf]	OCR	SG	eo	Cc	Cr	Po
BASE COURSE		588.5	587.5	0.0	1.0	1.0														0		144.0	144.0	72.0		35								2.7		0.00	0.00	0
		587.5	587.0	1.0	1.5	0.5	1A	18	20			1.81	80.0	1	1	0.75	32.53	18	33	0	120	144.0	144.0	180.0	50	35	0.74	36	79.7					2.7	0.40			
COAL	-	587.0	586.5	1.5	2.0	0.5	1B	10	20.6			1.71	80.0	1	1	0.75	17.11	10	17	0	80	90	96.5	240.1									2.7				
CLAY - hard to very stiff	CL	586.5	586.0	2.0	2.5	0.5	1C	10	24.4	4.00		1.64	80.0	1	1	0.75	16.41	10	16	3480		123	126.3	295.8						1480	1058	4600	15.5	2.7	0.659	0.24	0.05	18,182
		586.0	584.5	2.5	4.0	1.5	2	19	22.7	4.00		1.52	80.0	1	1	0.75	28.90	19	29	4000		128.2	128.2	423.5						2524	2010	8740	20.6	2.7	0.613	0.23	0.05	18,182
		584.5	583.5	4.0	5.0	1.0														0		128.2	128.2	583.8										2.7				
		583.5	582.0	5.0	6.5	1.5	3	15	28.1	3.50		1.33	80.0	1	1	0.75	20.01	15	20	3500		122.7	122.7	739.9						1989	1587	6900	9.3	2.7	0.759	0.28	0.06	15,909
		582.0	581.0	6.5	7.5	1.0														0		122.7	60.3	862.1										2.7				
		581.0	579.5	7.5	9.0	1.5	4	11	31.7	3.50		1.26	80.0	1	1	0.75	13.82	11	14	3500		119.6	57.2	935.1						1454	1164	5060	5.4	2.7	0.856	0.32	0.06	15,909
		579.5	578.5	9.0	10.0	1.0														0		119.6	57.2	1006.5										2.7				
		578.5	577.0	10.0	11.5	1.5	5	7	29.2	3.00		1.21	80.0	1	1	0.75	8.46	7	8	3000		121.7	59.3	1079.6						918	741	3220	3.0	2.7	0.788	0.29	0.06	13,636
		577.0	576.0	11.5	12.5	1.0														0		121.7	59.3	1153.8										2.7				
CLAY - stiff	CL	576.0	574.5	12.5	14.0	1.5	6	5	41.8	1.50		1.17	80.0	1	1	0.85	5.83	6	7	1500		112.2	49.8	1220.8						650	600	2606.6667	2.1	2.7	1.129	0.42	0.08	6,818
		574.5	573.5	14.0	15.0	1.0														0		112.2	49.8	1283.1										2.7				
CLAY - very soft	CL	573.5	572.0	15.0	16.5	1.5	7	2	34.2	0.25		1.13	80.0	1	1	0.85	2.27	2	3	250		118.2	55.2	1349.4						190	240	1042.6667	0.8	2.7	0.923	0.34	0.07	1,136
		572.0	570.0	16.5	18.5	2.0														0		117.6	55.2	1445.9										2.7				
		570.0	568.5	18.5	20.0	1.5	8	1	32.8	0.25		1.09	80.0	1	1	0.85	1.09	1	1	250		118.7	56.3	1543.2						116	120	521.33333	0.3	2.7	0.886	0.33	0.07	1,136
END OF BORING		568.5	588.5	20.0																0			-62.4	2209.4													

weighted average

Project #
60685247
Soil Material Properties
GP PM8 Crane Pad

Formal Boring Log ID	B-2
Field Log Boring ID	B-2
Date Drilled	6/6/2022
Boring Ground Elevation [ft]	588.5
Depth to water [ft]	6.5
Hammer Efficency (ER)	80

		Elevation [ft LWD]		Depth [ft]				1	2	3		4	5	6	7	8	9	10	11	12	13	14	15	16	17 Naval DM7	18 Naval DM7	19 Empirical	20 Empirical	21	22 Naval DM7	23 Empirical	24 Empirical	25	26	27 Empirical	28 Empirical	29 Empirical	30 Empirical
Soil Type	USCS	Top	Bottom	Top	Bottom	Thickness [ft]	Sample Number	N	ω [%]	Qp_{low}	Qp_{high}	C_N	nH	nB	nS	nR	N1	N_{60}	$(N1)_{60}$	c [psf]	γ_{DRY} [pcf]	γ [pcf]	γ' [pcf]	σ_{avg}' [psf]	Dr [%]	ϕ' [degree]	Dr	ϕ' [degree]	C'	cu [psf]	su(N60) [psf]	σ_c' [psf]	OCR	SG	eo	Cc	Cr	Po
BASE COURSE		588.5	587.5	0.0	1.0	1.0														0		134	136.6	68.3		36								2.7				
		587.5	586.0	1.0	2.5	1.5	1	76	6.7			1.71	80.0	1	1	0.75	130.13	76	130	0	128	136.6	136.6	239.0	80	38	1.47	57	201.6						2.7	0.32			
		586.0	584.5	2.5	4.0	1.5	2	22	7.9			1.51	80.0	1	1	0.75	33.18	22	33	0	122	131.6	131.6	440.2	55	35	0.74	36	81.6						2.7	0.38			
		584.5	583.5	4.0	5.0	1.0														0		131.6	131.6	604.7										2.7				
FILL: BRICK, RUBBER, AND ROCK	FILL	583.5	582.0	5.0	6.5	1.5	3	24	21.7			1.32	80.0	1	1	0.75	31.79	24	32	0	100	121.7	121.7	761.8	60	30	0.73	36	77.8						2.7	0.68			
		582.0	581.0	6.5	7.5	1.0														0		121.7	59.3	882.7										2.7				
COAL	COAL	581.0	579.5	7.5	9.0	1.5	4	1	3.4			1.26	80.0	1	1	0.75	1.26	1	1	0	80	82	20.3	927.6										2.7	1.11			
- Auger refusal @ 9.7 FT		579.5	578.8	9.0	9.7	0.7														0		82.7	20.3	950.0										2.7				
END OF BORING		578.8	588.5	9.7		-9.7														0			-62.4	1259.7														

weighted average

Project #
60685247
Soil Material Properties
GP PM8 Crane Pad

Formal Boring Log ID	B-3
Field Log Boring ID	B-3
Date Drilled	6/7/2022
Boring Ground Elevation [ft]	587.9
Depth to water [ft]	6.5
Hammer Efficency (ER)	80

		Elevation [ft LWD]		Depth [ft]				1	2	3		4	5	6	7	8	9	10	11	12	13	14	15	16	17 Naval DM7	18 Naval DM7	19 Empirical	20 Empirical	21	22 Naval DM7	23 Empirical	24 Empirical	25	26	27 Empirical	28 Empirical	29 Empirical	30 Empirical
Soil Type	USCS	Top	Bottom	Top	Bottom	Thickness [ft]	Sample Number	N	ω [%]	Qp_{low}	Qp_{high}	C_N	nH	nB	nS	nR	N1	N_{60}	$(N1)_{60}$	c [psf]	γ_{DRY} [pcf]	γ [pcf]	γ' [pcf]	σ_{avg}' [psf]	Dr [%]	ϕ' [degree]	Dr	ϕ' [degree]	C'	cu [psf]	su(N60) [psf]	σ_c' [psf]	OCR	SG	eo	Cc	Cr	Po
FILL: CLAY w/ sand and gravel	FILL	587.9	586.9	0.0	1.0	1.0														1500		120.8	120.8	60.4						2250				2.7				
		586.9	585.4	1.0	2.5	1.5	1	17	9.8	1.50		1.75	80.0	1	1	0.75	29.81	17	30	1500	110	120.8	120.8	211.4						2256	1799	7820	37.0	2.7	0.265	0.10	0.02	6,818
FILL: Clay - trace gravel	FILL	585.4	583.9	2.5	4.0	1.5	2	9	24.3	1.50		1.54	80.0	1	1	0.75	13.88	9	14	1500		126.5	126.5	396.8						1190	952	4140	10.4	2.7	0.656	0.24	0.05	6,818
		583.9	582.9	4.0	5.0	1.0														0		126.5	126.5	554.9										2.7				
FILL: Clay with ash	FILL	582.9	581.9	5.0	6.0	1.0	3	2	27.2	0.25		1.36	80.0	1	1	0.75	2.73	2	3	460		124	123.6	679.9						360	212	920	1.4	2.7	0.734	0.27	0.05	1,136
		581.9	581.4	6.0	6.5	0.5														0		123.6	123.6	772.5										2.7				
		581.4	580.4	6.5	7.5	1.0														0		123.6	61.2	834.0										2.7				
		580.4	578.9	7.5	9.0	1.5	4	5	25.4	3.00		1.26	80.0	1	1	0.75	6.32	5	6	3000		125.3	62.9	911.8						651	529	2300	2.5	2.7	0.686	0.25	0.05	13,636
		578.9	577.9	9.0	10.0	1.0														0		125.3	62.9	990.4										2.7				
CLAY - stiff to very stiff	CL	577.9	576.4	10.0	11.5	1.5	5	8	25.7	2.00		1.21	80.0	1	1	0.75	9.69	8	10	2300		126	62.6	1068.9						1260	846	3680	3.4	2.7	0.694	0.26	0.05	9,091
		576.4	575.4	11.5	12.5	1.0														0		125.0	62.6	1147.2										2.7				
		575.4	573.9	12.5	14.0	1.5	6	9	24.5	1.50		1.17	80.0	1	1	0.85	10.49	10	12	1500		126.2	63.8	1226.4						1186	1079	4692	3.8	2.7	0.662	0.25	0.05	6,818
		573.9	572.9	14.0	15.0	1.0														0		126.2	63.8	1306.2										2.7				
		572.9	571.4	15.0	16.5	1.5	7	10	23.1	3.50		1.12	80.0	1	1	0.85	11.24	11	13	3500		127.7	65.3	1387.1						1320	1199	5213.3333	3.8	2.7	0.624	0.23	0.05	15,909
		571.4	569.4	16.5	18.5	2.0														0		127.7	65.3	1501.4										2.7				
		569.4	567.9	18.5	20.0	1.5	8	14	25.2	3.50		1.07	80.0	1	1	0.85	15.03	16	17	3500		125.5	63.1	1614.1						1855	1679	7298.6667	4.5	2.7	0.680	0.25	0.05	15,909
END OF BORING		567.9	587.9	20.0		-20.0														0			-62.4	2285.4													

weighted average

Project #
60685247
Soil Material Properties
GP PM8 Crane Pad

Formal Boring Log ID	B-4
Field Log Boring ID	B-4
Date Drilled	7/6/2022
Boring Ground Elevation [ft]	588
Depth to water [ft]	6.5
Hammer Efficency (ER)	80

		Elevation [ft LWD]		Depth [ft]				1	2	3		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
																									Naval DM7	Naval DM7	Empirical	Empirical		Naval DM7	Empirical	Empirical			Empirical			
Soil Type	USCS	Top	Bottom	Top	Bottom	Thickness [ft]	Sample Number	N	ω [%]	Qp_{low}	Qp_{high}	C_N	nH	nB	nS	nR	N1	N_{60}	$(N1)_{60}$	c [psf]	γ_{DRY} [pcf]	γ [pcf]	γ' [pcf]	σ_{avg}' [psf]	Dr [%]	ϕ' [degree]	Dr	ϕ' [degree]	C'	cu [psf]	su(N60) [psf]	σ_c' [psf]	OCR	SG	eo	Cc	Cr	Po
FILL: Sand and gravel	FILL	588.0	587.0	0.0	1.0	1.0														0		106	105.9	53.0		28								2.7				
		587.0	585.5	1.0	2.5	1.5	1	7	8.1			1.80	80.0	1	1	0.75	12.58	7	13	0	98	105.9	105.9	185.4	25	28	0.46	31	44.3					2.7	0.72			
FILL: Sand - loose to very loose	FILL	585.5	584.0	2.5	4.0	1.5	2	6	7.7			1.59	80.0	1	1	0.75	9.55	6	10	0	96	104	103.4	342.4	20	28	0.40	30	39.5					2.7	0.76			
		584.0	583.0	4.0	5.0	1.0														0		103.4	103.4	471.6										2.7				
		583.0	581.5	5.0	6.5	1.5	3	7	19.3			1.40	80.0	1	1	0.75	9.79	7	10	0	98	116.9	116.9	611.0	25	29	0.40	30	39.5					2.7	0.72			
		581.5	580.5	6.5	7.5	1.0														0		116.9	54.5	726.0										2.7				
		580.5	579.0	7.5	9.0	1.5	4	3	25.3			1.31	80.0	1	1	0.75	3.93	3	4	0	96	120.3	57.9	796.6	10	27	0.26	28	30.3					2.7	0.76			
		579.0	578.0	9.0	10.0	1.0														0		120.3	57.9	869.0										2.7				
		578.0	577.0	10.0	11.0	1.0	5A	4	25.6			1.26	80.0	1	1	0.75	5.03	4	5	0	98	123.1	60.7	928.3	15	28	0.29	29	33.3					2.7	0.72			
CLAY - very stiff	CL	577.0	576.5	11.0	11.5	0.5	5B	6	22.6	2.00		1.24	80.0	1	1	0.75	7.45	6	7	3110		128	65.9	975.1						1750	635	2760	2.8	2.7	0.610	0.23	0.05	9,091
		576.5	575.5	11.5	12.5	1.0														0		128.3	65.9	1024.5										2.7				
		575.5	574.0	12.5	14.0	1.5	6	16	21.5	3.50		1.20	80.0	1	1	0.85	19.19	18	22	3500		129.5	67.1	1107.8						2123	1919	8341.3333	7.5	2.7	0.581	0.22	0.04	15,909
		574.0	573.0	14.0	15.0	1.0														0		129.5	67.1	1191.7										2.7				
		573.0	571.5	15.0	16.5	1.5	7	15	22.9	3.50		1.15	80.0	1	1	0.85	17.29	17	20	3500		128.0	65.6	1274.4						1989	1799	7820	6.1	2.7	0.618	0.23	0.05	15,909
		571.5	569.5	16.5	18.5	2.0														0		128.0	65.6	1389.1										2.7				
		569.5	568.0	18.5	20.0	1.5	8	38	22.3	3.50		1.10	80.0	1	1	0.85	41.69	43	47	3500		128.6	66.2	1504.3						5066	4556	19810.667	13.2	2.7	0.602	0.22	0.04	15,909
END OF BORING		568.0	588.0	20.0		-20.0														0			-62.4	2178.0														

weighted average

Project #
60685247
Soil Material Properties
GP PM8 Crane Pad

Formal Boring Log ID	B-5
Field Log Boring ID	B-5
Date Drilled	6/7/2022
Boring Ground Elevation [ft]	588.2
Depth to water [ft]	6.5
Hammer Efficency (ER)	80

		Elevation [ft LWD]		Depth [ft]				1	2	3		4	5	6	7	8	9	10	11	12	13	14	15	16	17 Naval DM7	18 Naval DM7	19 Empirical	20 Empirical	21	22 Naval DM7	23 Empirical su(N60) [psf]	24 Empirical	25	26	27 Empirical	28 Empirical	29 Empirical	30 Empirical
Soil Type	USCS	Top	Bottom	Top	Bottom	Thickness [ft]	Sample Number	N	ω [%]	Qp_{low}	Qp_{high}	C_N	nH	nB	nS	nR	N1	N_{60}	$(N1)_{60}$	c [psf]	γ_{DRY} [pcf]	γ [pcf]	γ' [pcf]	σ_{avg}' [psf]	Dr [%]	ϕ' [degree]	Dr	ϕ' [degree]	C'	cu [psf]		σ_c' [psf]	OCR	SG	eo	Cc	Cr	Po
BASE COURSE		588.2	587.2	0.0	1.0	1.0														0		136	136.6	68.3		38								2.7				
		587.2	585.7	1.0	2.5	1.5	1	59	6.7			1.71	80.0	1	1	0.75	101.02	59	101	0	128	136.6	136.6	239.0	80	38	1.30	52	201.6					2.7	0.32			
FILL: Clay - very stiff	FILL	585.7	584.2	2.5	4.0	1.5	2	12	19	2.50		1.51	80.0	1	1	0.75	18.14	12	18	2300	105	123	125.0	435.2						820	1270	5520	12.7	2.7	0.513	0.19	0.04	11,364
		584.2	583.2	4.0	5.0	1.0														0		125.0	125.0	591.3										2.7				
		583.2	581.7	5.0	6.5	1.5	3	7	18	2.50		1.33	80.0	1	1	0.75	9.32	7	9	2500	105	123.9	123.9	746.7						918	741	3220	4.3	2.7	0.486	0.18	0.04	11,364
		581.7	580.7	6.5	7.5	1.0														0		123.9	61.5	870.4										2.7				
		580.7	579.2	7.5	9.0	1.5	4	4	31.7	2.00		1.25	80.0	1	1	0.75	5.01	4	5	2000		119.6	57.2	944.0						517	423	1840	1.9	2.7	0.856	0.32	0.06	9,091
		579.2	578.2	9.0	10.0	1.0														0		119.6	57.2	1015.5										2.7				
CLAY - very stiff	CL	578.2	576.7	10.0	11.5	1.5	5	9	22.3	3.00		1.20	80.0	1	1	0.75	10.83	9	11	2300		128	66.2	1093.7						1030	952	4140	3.8	2.7	0.602	0.22	0.04	13,636
		576.7	575.7	11.5	12.5	1.0														0		128.6	66.2	1176.5										2.7				
		575.7	574.2	12.5	14.0	1.5	6	8	22.5	2.50		1.16	80.0	1	1	0.85	9.25	9	10	2500		128.4	66.0	1259.1						1052	959	4170.6667	3.3	2.7	0.608	0.23	0.05	11,364
		574.2	573.2	14.0	15.0	1.0														0		128.4	66.0	1341.6										2.7				
		573.2	571.7	15.0	16.5	1.5	7	7	22.8	2.00		1.12	80.0	1	1	0.85	7.81	8	9	2000		128.1	65.7	1423.8						918	839	3649.3333	2.6	2.7	0.616	0.23	0.05	9,091
		571.7	569.7	16.5	18.5	2.0														0		128.1	65.7	1538.7										2.7				
		569.7	568.2	18.5	20.0	1.5	8	8	22.7	2.00		1.07	80.0	1	1	0.85	8.52	9	10	2000		128.2	65.8	1653.7						1052	959	4170.6667	2.5	2.7	0.613	0.23	0.05	9,091
END OF BORING		568.2	588.2	20.0		-20.0														0			-62.4	2327.0														

weighted average

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

July 14, 2022

Jeremy Thomas
AECOM
558 N. Main St
Oshkosh, WI 54901

RE: Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

Dear Jeremy Thomas:

Enclosed are the analytical results for sample(s) received by the laboratory on June 07, 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 - Green Bay

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

Sincerely,

Christopher Hyska

Christopher Hyska
christopher.hyska@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Katie Crotteau, AECOM

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

Pace Analytical Services Green Bay
1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40246079001	**B-5/B-3 COMP**	Solid	06/06/22 14:15	06/07/22 15:42
40246079002	**B-11/B-2/B-4 COMP**	Solid	06/06/22 15:00	06/07/22 15:42

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40246079001	**B-5/B-3 COMP**	EPA 8082A	BLM	10	PASI-G
		EPA 6010D	TXW	7	PASI-G
		EPA 7471	AJT	1	PASI-G
		EPA 8270E	TPO	70	PASI-G
		EPA 8260	ALD	64	PASI-G
		ASTM D2974-87	K1S	1	PASI-G
40246079002	**B-11/B-2/B-4 COMP**	EPA 8082A	BLM	10	PASI-G
		EPA 6010D	TXW	7	PASI-G
		EPA 7471	AJT	1	PASI-G
		EPA 8270E	TPO	70	PASI-G
		EPA 8260	ALD	64	PASI-G
		ASTM D2974-87	K1S	1	PASI-G

PASI-G = Pace Analytical Services - Green Bay

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SUMMARY OF DETECTION

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40246079001	**B-5/B-3 COMP**					
EPA 6010D	Arsenic	4.6	mg/kg	3.0	06/08/22 14:18	
EPA 6010D	Barium	94.1	mg/kg	0.60	06/08/22 14:18	
EPA 6010D	Chromium	29.1	mg/kg	1.2	06/08/22 14:18	
EPA 6010D	Lead	17.1	mg/kg	2.4	06/08/22 14:18	
EPA 7471	Mercury	0.052	mg/kg	0.041	06/14/22 10:46	
EPA 8270E	2-Methylnaphthalene	107J	ug/kg	181	06/10/22 16:51	
EPA 8270E	Naphthalene	78.6J	ug/kg	243	06/10/22 16:51	
EPA 8270E	Phenanthrene	42.8J	ug/kg	89.3	06/10/22 16:51	
EPA 8260	Toluene	20.1J	ug/kg	75.0	06/10/22 02:12	
EPA 8260	1,1,1-Trichloroethane	66.4J	ug/kg	75.0	06/10/22 02:12	
ASTM D2974-87	Percent Moisture	20.0	%	0.10	06/15/22 15:00	
40246079002	**B-11/B-2/B-4 COMP**					
EPA 6010D	Arsenic	1.9J	mg/kg	2.9	06/08/22 14:20	
EPA 6010D	Barium	29.6	mg/kg	0.59	06/08/22 14:20	
EPA 6010D	Chromium	11.4	mg/kg	1.2	06/08/22 14:20	
EPA 6010D	Lead	2.9	mg/kg	2.4	06/08/22 14:20	
EPA 8270E	bis(2-Ethylhexyl)phthalate	869	ug/kg	284	06/10/22 19:40	
ASTM D2974-87	Percent Moisture	18.6	%	0.10	06/15/22 15:00	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

Sample: B-5/B-3 COMP **Lab ID: 40246079001** Collected: 06/06/22 14:15 Received: 06/07/22 15:42 Matrix: Solid

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

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082A GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3541 Pace Analytical Services - Green Bay								
PCB-1016 (Aroclor 1016)	**<19.0**	ug/kg	62.3	19.0	1	06/08/22 17:56	06/09/22 14:26	12674-11-2	
PCB-1221 (Aroclor 1221)	**<19.0**	ug/kg	62.3	19.0	1	06/08/22 17:56	06/09/22 14:26	11104-28-2	
PCB-1232 (Aroclor 1232)	**<19.0**	ug/kg	62.3	19.0	1	06/08/22 17:56	06/09/22 14:26	11141-16-5	
PCB-1242 (Aroclor 1242)	**<19.0**	ug/kg	62.3	19.0	1	06/08/22 17:56	06/09/22 14:26	53469-21-9	
PCB-1248 (Aroclor 1248)	**<19.0**	ug/kg	62.3	19.0	1	06/08/22 17:56	06/09/22 14:26	12672-29-6	
PCB-1254 (Aroclor 1254)	**<19.0**	ug/kg	62.3	19.0	1	06/08/22 17:56	06/09/22 14:26	11097-69-1	
PCB-1260 (Aroclor 1260)	**<19.0**	ug/kg	62.3	19.0	1	06/08/22 17:56	06/09/22 14:26	11096-82-5	
PCB, Total	**<19.0**	ug/kg	62.3	19.0	1	06/08/22 17:56	06/09/22 14:26	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	73	%	50-99		1	06/08/22 17:56	06/09/22 14:26	877-09-8	
Decachlorobiphenyl (S)	66	%	38-95		1	06/08/22 17:56	06/09/22 14:26	2051-24-3	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Green Bay								
Arsenic	**4.6**	mg/kg	3.0	1.8	1	06/08/22 06:04	06/08/22 14:18	7440-38-2	
Barium	**94.1**	mg/kg	0.60	0.18	1	06/08/22 06:04	06/08/22 14:18	7440-39-3	
Cadmium	**<0.16**	mg/kg	0.60	0.16	1	06/08/22 06:04	06/08/22 14:18	7440-43-9	
Chromium	**29.1**	mg/kg	1.2	0.33	1	06/08/22 06:04	06/08/22 14:18	7440-47-3	
Lead	**17.1**	mg/kg	2.4	0.72	1	06/08/22 06:04	06/08/22 14:18	7439-92-1	
Selenium	**<1.6**	mg/kg	4.8	1.6	1	06/08/22 06:04	06/08/22 14:18	7782-49-2	
Silver	**<0.37**	mg/kg	1.2	0.37	1	06/08/22 06:04	06/08/22 14:18	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471 Pace Analytical Services - Green Bay								
Mercury	**0.052**	mg/kg	0.041	0.012	1	06/13/22 09:44	06/14/22 10:46	7439-97-6	
8270E MSSV FULL LIST MICROWAVE	Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
1,2,4-Trichlorobenzene	**<23.6**	ug/kg	78.6	23.6	1	06/09/22 12:34	06/10/22 16:51	120-82-1	
1,2-Dichlorobenzene	**<65.6**	ug/kg	219	65.6	1	06/09/22 12:34	06/10/22 16:51	95-50-1	
1,3-Dichlorobenzene	**<28.9**	ug/kg	96.3	28.9	1	06/09/22 12:34	06/10/22 16:51	541-73-1	
1,4-Dichlorobenzene	**<29.1**	ug/kg	96.9	29.1	1	06/09/22 12:34	06/10/22 16:51	106-46-7	
2,2'-Oxybis(1-chloropropane)	**<53.8**	ug/kg	179	53.8	1	06/09/22 12:34	06/10/22 16:51	108-60-1	
2,4,5-Trichlorophenol	**<36.9**	ug/kg	123	36.9	1	06/09/22 12:34	06/10/22 16:51	95-95-4	
2,4,6-Trichlorophenol	**<31.8**	ug/kg	106	31.8	1	06/09/22 12:34	06/10/22 16:51	88-06-2	
2,4-Dichlorophenol	**<55.8**	ug/kg	186	55.8	1	06/09/22 12:34	06/10/22 16:51	120-83-2	
2,4-Dimethylphenol	**<41.3**	ug/kg	138	41.3	1	06/09/22 12:34	06/10/22 16:51	105-67-9	
2,4-Dinitrophenol	**<63.6**	ug/kg	212	63.6	1	06/09/22 12:34	06/10/22 16:51	51-28-5	
2,4-Dinitrotoluene	**<29.8**	ug/kg	99.5	29.8	1	06/09/22 12:34	06/10/22 16:51	121-14-2	
2,6-Dinitrotoluene	**<39.6**	ug/kg	132	39.6	1	06/09/22 12:34	06/10/22 16:51	606-20-2	
2-Chloronaphthalene	**<26.8**	ug/kg	89.3	26.8	1	06/09/22 12:34	06/10/22 16:51	91-58-7	
2-Chlorophenol	**<52.1**	ug/kg	174	52.1	1	06/09/22 12:34	06/10/22 16:51	95-57-8	
2-Methylnaphthalene	**107J**	ug/kg	181	54.2	1	06/09/22 12:34	06/10/22 16:51	91-57-6	
2-Methylphenol(o-Cresol)	**<37.9**	ug/kg	126	37.9	1	06/09/22 12:34	06/10/22 16:51	95-48-7	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

Sample: B-5/B-3 COMP **Lab ID: 40246079001** Collected: 06/06/22 14:15 Received: 06/07/22 15:42 Matrix: Solid

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

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV FULL LIST MICROWAVE	Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
2-Nitroaniline	**<59.5**	ug/kg	198	59.5	1	06/09/22 12:34	06/10/22 16:51	88-74-4	
2-Nitrophenol	**<65.9**	ug/kg	220	65.9	1	06/09/22 12:34	06/10/22 16:51	88-75-5	
3&4-Methylphenol(m&p Cresol)	**<38.2**	ug/kg	127	38.2	1	06/09/22 12:34	06/10/22 16:51		
3,3'-Dichlorobenzidine	**<56.6**	ug/kg	189	56.6	1	06/09/22 12:34	06/10/22 16:51	91-94-1	
3-Nitroaniline	**<35.5**	ug/kg	118	35.5	1	06/09/22 12:34	06/10/22 16:51	99-09-2	
4,6-Dinitro-2-methylphenol	**<64.3**	ug/kg	214	64.3	1	06/09/22 12:34	06/10/22 16:51	534-52-1	
4-Bromophenylphenyl ether	**<43.7**	ug/kg	146	43.7	1	06/09/22 12:34	06/10/22 16:51	101-55-3	
4-Chloro-3-methylphenol	**<64.9**	ug/kg	216	64.9	1	06/09/22 12:34	06/10/22 16:51	59-50-7	
4-Chloroaniline	**<34.3**	ug/kg	114	34.3	1	06/09/22 12:34	06/10/22 16:51	106-47-8	2q
4-Chlorophenylphenyl ether	**<38.9**	ug/kg	130	38.9	1	06/09/22 12:34	06/10/22 16:51	7005-72-3	
4-Nitroaniline	**<86.6**	ug/kg	289	86.6	1	06/09/22 12:34	06/10/22 16:51	100-01-6	
4-Nitrophenol	**<52.6**	ug/kg	175	52.6	1	06/09/22 12:34	06/10/22 16:51	100-02-7	
Acenaphthene	**<74.0**	ug/kg	247	74.0	1	06/09/22 12:34	06/10/22 16:51	83-32-9	
Acenaphthylene	**<74.5**	ug/kg	248	74.5	1	06/09/22 12:34	06/10/22 16:51	208-96-8	
Anthracene	**<33.4**	ug/kg	111	33.4	1	06/09/22 12:34	06/10/22 16:51	120-12-7	
Benzo(a)anthracene	**<32.3**	ug/kg	108	32.3	1	06/09/22 12:34	06/10/22 16:51	56-55-3	
Benzo(a)pyrene	**<31.4**	ug/kg	105	31.4	1	06/09/22 12:34	06/10/22 16:51	50-32-8	
Benzo(b)fluoranthene	**<35.9**	ug/kg	120	35.9	1	06/09/22 12:34	06/10/22 16:51	205-99-2	
Benzo(g,h,i)perylene	**<54.6**	ug/kg	182	54.6	1	06/09/22 12:34	06/10/22 16:51	191-24-2	
Benzo(k)fluoranthene	**<50.0**	ug/kg	167	50.0	1	06/09/22 12:34	06/10/22 16:51	207-08-9	
Butylbenzylphthalate	**<33.5**	ug/kg	112	33.5	1	06/09/22 12:34	06/10/22 16:51	85-68-7	
Carbazole	**<32.7**	ug/kg	109	32.7	1	06/09/22 12:34	06/10/22 16:51	86-74-8	
Chrysene	**<31.2**	ug/kg	104	31.2	1	06/09/22 12:34	06/10/22 16:51	218-01-9	
Di-n-butylphthalate	**<31.2**	ug/kg	104	31.2	1	06/09/22 12:34	06/10/22 16:51	84-74-2	
Di-n-octylphthalate	**<46.9**	ug/kg	156	46.9	1	06/09/22 12:34	06/10/22 16:51	117-84-0	
Dibenz(a,h)anthracene	**<56.7**	ug/kg	189	56.7	1	06/09/22 12:34	06/10/22 16:51	53-70-3	
Dibenzofuran	**<25.3**	ug/kg	84.2	25.3	1	06/09/22 12:34	06/10/22 16:51	132-64-9	
Diethylphthalate	**<34.6**	ug/kg	115	34.6	1	06/09/22 12:34	06/10/22 16:51	84-66-2	
Dimethylphthalate	**<27.2**	ug/kg	90.5	27.2	1	06/09/22 12:34	06/10/22 16:51	131-11-3	
Fluoranthene	**<29.5**	ug/kg	98.4	29.5	1	06/09/22 12:34	06/10/22 16:51	206-44-0	
Fluorene	**<24.4**	ug/kg	81.3	24.4	1	06/09/22 12:34	06/10/22 16:51	86-73-7	
Hexachloro-1,3-butadiene	**<53.2**	ug/kg	177	53.2	1	06/09/22 12:34	06/10/22 16:51	87-68-3	
Hexachlorobenzene	**<35.1**	ug/kg	117	35.1	1	06/09/22 12:34	06/10/22 16:51	118-74-1	
Hexachlorocyclopentadiene	**<49.4**	ug/kg	165	49.4	1	06/09/22 12:34	06/10/22 16:51	77-47-4	
Hexachloroethane	**<33.4**	ug/kg	111	33.4	1	06/09/22 12:34	06/10/22 16:51	67-72-1	
Indeno(1,2,3-cd)pyrene	**<45.2**	ug/kg	151	45.2	1	06/09/22 12:34	06/10/22 16:51	193-39-5	
Isophorone	**<32.1**	ug/kg	107	32.1	1	06/09/22 12:34	06/10/22 16:51	78-59-1	
N-Nitroso-di-n-propylamine	**<33.1**	ug/kg	110	33.1	1	06/09/22 12:34	06/10/22 16:51	621-64-7	
N-Nitrosodiphenylamine	**<283**	ug/kg	944	283	1	06/09/22 12:34	06/10/22 16:51	86-30-6	
Naphthalene	**78.6J**	ug/kg	243	73.0	1	06/09/22 12:34	06/10/22 16:51	91-20-3	
Nitrobenzene	**<42.3**	ug/kg	141	42.3	1	06/09/22 12:34	06/10/22 16:51	98-95-3	
Pentachlorophenol	**<46.0**	ug/kg	153	46.0	1	06/09/22 12:34	06/10/22 16:51	87-86-5	
Phenanthrene	**42.8J**	ug/kg	89.3	26.8	1	06/09/22 12:34	06/10/22 16:51	85-01-8	
Phenol	**<49.5**	ug/kg	165	49.5	1	06/09/22 12:34	06/10/22 16:51	108-95-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

Sample: B-5/B-3 COMP **Lab ID: 40246079001** Collected: 06/06/22 14:15 Received: 06/07/22 15:42 Matrix: Solid

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

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV FULL LIST MICROWAVE	Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
Pyrene	**<46.3**	ug/kg	154	46.3	1	06/09/22 12:34	06/10/22 16:51	129-00-0	
bis(2-Chloroethoxy)methane	**<56.2**	ug/kg	187	56.2	1	06/09/22 12:34	06/10/22 16:51	111-91-1	
bis(2-Chloroethyl) ether	**<65.2**	ug/kg	217	65.2	1	06/09/22 12:34	06/10/22 16:51	111-44-4	
bis(2-Ethylhexyl)phthalate	**<34.7**	ug/kg	116	34.7	1	06/09/22 12:34	06/10/22 16:51	117-81-7	
Surrogates									
Nitrobenzene-d5 (S)	74	%	10-125		1	06/09/22 12:34	06/10/22 16:51	4165-60-0	
2-Fluorobiphenyl (S)	65	%	12-118		1	06/09/22 12:34	06/10/22 16:51	321-60-8	
Terphenyl-d14 (S)	71	%	10-124		1	06/09/22 12:34	06/10/22 16:51	1718-51-0	
Phenol-d6 (S)	66	%	10-125		1	06/09/22 12:34	06/10/22 16:51	13127-88-3	
2-Fluorophenol (S)	72	%	10-130		1	06/09/22 12:34	06/10/22 16:51	367-12-4	
2,4,6-Tribromophenol (S)	79	%	10-144		1	06/09/22 12:34	06/10/22 16:51	118-79-6	
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
Benzene	**<17.9**	ug/kg	30.0	17.9	1	06/09/22 08:30	06/10/22 02:12	71-43-2	
Bromobenzene	**<29.3**	ug/kg	75.0	29.3	1	06/09/22 08:30	06/10/22 02:12	108-86-1	
Bromochloromethane	**<20.6**	ug/kg	75.0	20.6	1	06/09/22 08:30	06/10/22 02:12	74-97-5	
Bromodichloromethane	**<17.9**	ug/kg	75.0	17.9	1	06/09/22 08:30	06/10/22 02:12	75-27-4	
Bromoform	**<330**	ug/kg	375	330	1	06/09/22 08:30	06/10/22 02:12	75-25-2	
Bromomethane	**<105**	ug/kg	375	105	1	06/09/22 08:30	06/10/22 02:12	74-83-9	1q,L1, M0
n-Butylbenzene	**<34.4**	ug/kg	75.0	34.4	1	06/09/22 08:30	06/10/22 02:12	104-51-8	
sec-Butylbenzene	**<18.3**	ug/kg	75.0	18.3	1	06/09/22 08:30	06/10/22 02:12	135-98-8	
tert-Butylbenzene	**<23.6**	ug/kg	75.0	23.6	1	06/09/22 08:30	06/10/22 02:12	98-06-6	
Carbon tetrachloride	**<16.5**	ug/kg	75.0	16.5	1	06/09/22 08:30	06/10/22 02:12	56-23-5	
Chlorobenzene	**<9.0**	ug/kg	75.0	9.0	1	06/09/22 08:30	06/10/22 02:12	108-90-7	
Chloroethane	**<31.7**	ug/kg	375	31.7	1	06/09/22 08:30	06/10/22 02:12	75-00-3	1q,L1, M0
Chloroform	**<53.7**	ug/kg	375	53.7	1	06/09/22 08:30	06/10/22 02:12	67-66-3	M1
Chloromethane	**<28.5**	ug/kg	75.0	28.5	1	06/09/22 08:30	06/10/22 02:12	74-87-3	
2-Chlorotoluene	**<24.3**	ug/kg	75.0	24.3	1	06/09/22 08:30	06/10/22 02:12	95-49-8	
4-Chlorotoluene	**<28.5**	ug/kg	75.0	28.5	1	06/09/22 08:30	06/10/22 02:12	106-43-4	
1,2-Dibromo-3-chloropropane	**<58.2**	ug/kg	375	58.2	1	06/09/22 08:30	06/10/22 02:12	96-12-8	
Dibromochloromethane	**<256**	ug/kg	375	256	1	06/09/22 08:30	06/10/22 02:12	124-48-1	
1,2-Dibromoethane (EDB)	**<20.6**	ug/kg	75.0	20.6	1	06/09/22 08:30	06/10/22 02:12	106-93-4	
Dibromomethane	**<22.2**	ug/kg	75.0	22.2	1	06/09/22 08:30	06/10/22 02:12	74-95-3	
1,2-Dichlorobenzene	**<23.3**	ug/kg	75.0	23.3	1	06/09/22 08:30	06/10/22 02:12	95-50-1	
1,3-Dichlorobenzene	**<20.6**	ug/kg	75.0	20.6	1	06/09/22 08:30	06/10/22 02:12	541-73-1	
1,4-Dichlorobenzene	**<20.6**	ug/kg	75.0	20.6	1	06/09/22 08:30	06/10/22 02:12	106-46-7	
Dichlorodifluoromethane	**<32.3**	ug/kg	75.0	32.3	1	06/09/22 08:30	06/10/22 02:12	75-71-8	M1
1,1-Dichloroethane	**<19.2**	ug/kg	75.0	19.2	1	06/09/22 08:30	06/10/22 02:12	75-34-3	
1,2-Dichloroethane	**<17.3**	ug/kg	75.0	17.3	1	06/09/22 08:30	06/10/22 02:12	107-06-2	M1
1,1-Dichloroethene	**<24.9**	ug/kg	75.0	24.9	1	06/09/22 08:30	06/10/22 02:12	75-35-4	
cis-1,2-Dichloroethene	**<16.1**	ug/kg	75.0	16.1	1	06/09/22 08:30	06/10/22 02:12	156-59-2	
trans-1,2-Dichloroethene	**<16.2**	ug/kg	75.0	16.2	1	06/09/22 08:30	06/10/22 02:12	156-60-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

Sample: B-5/B-3 COMP **Lab ID: 40246079001** Collected: 06/06/22 14:15 Received: 06/07/22 15:42 Matrix: Solid

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

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
1,2-Dichloropropane	**<17.9**	ug/kg	75.0	17.9	1	06/09/22 08:30	06/10/22 02:12	78-87-5	
1,3-Dichloropropane	**<16.4**	ug/kg	75.0	16.4	1	06/09/22 08:30	06/10/22 02:12	142-28-9	
2,2-Dichloropropane	**<20.3**	ug/kg	75.0	20.3	1	06/09/22 08:30	06/10/22 02:12	594-20-7	
1,1-Dichloropropene	**<24.3**	ug/kg	75.0	24.3	1	06/09/22 08:30	06/10/22 02:12	563-58-6	
cis-1,3-Dichloropropene	**<49.5**	ug/kg	375	49.5	1	06/09/22 08:30	06/10/22 02:12	10061-01-5	
trans-1,3-Dichloropropene	**<215**	ug/kg	375	215	1	06/09/22 08:30	06/10/22 02:12	10061-02-6	
Diisopropyl ether	**<18.6**	ug/kg	75.0	18.6	1	06/09/22 08:30	06/10/22 02:12	108-20-3	
Ethylbenzene	**<17.9**	ug/kg	75.0	17.9	1	06/09/22 08:30	06/10/22 02:12	100-41-4	
Hexachloro-1,3-butadiene	**<149**	ug/kg	375	149	1	06/09/22 08:30	06/10/22 02:12	87-68-3	
Isopropylbenzene (Cumene)	**<20.3**	ug/kg	75.0	20.3	1	06/09/22 08:30	06/10/22 02:12	98-82-8	
p-Isopropyltoluene	**<22.8**	ug/kg	75.0	22.8	1	06/09/22 08:30	06/10/22 02:12	99-87-6	
Methylene Chloride	**<20.9**	ug/kg	75.0	20.9	1	06/09/22 08:30	06/10/22 02:12	75-09-2	
Methyl-tert-butyl ether	**<22.1**	ug/kg	75.0	22.1	1	06/09/22 08:30	06/10/22 02:12	1634-04-4	
Naphthalene	**<23.4**	ug/kg	375	23.4	1	06/09/22 08:30	06/10/22 02:12	91-20-3	
n-Propylbenzene	**<18.0**	ug/kg	75.0	18.0	1	06/09/22 08:30	06/10/22 02:12	103-65-1	
Styrene	**<19.2**	ug/kg	75.0	19.2	1	06/09/22 08:30	06/10/22 02:12	100-42-5	
1,1,1,2-Tetrachloroethane	**<18.0**	ug/kg	75.0	18.0	1	06/09/22 08:30	06/10/22 02:12	630-20-6	
1,1,2,2-Tetrachloroethane	**<27.2**	ug/kg	75.0	27.2	1	06/09/22 08:30	06/10/22 02:12	79-34-5	
Tetrachloroethene	**<29.1**	ug/kg	75.0	29.1	1	06/09/22 08:30	06/10/22 02:12	127-18-4	
Toluene	**20.1J**	ug/kg	75.0	18.9	1	06/09/22 08:30	06/10/22 02:12	108-88-3	
1,2,3-Trichlorobenzene	**<83.6**	ug/kg	375	83.6	1	06/09/22 08:30	06/10/22 02:12	87-61-6	
1,2,4-Trichlorobenzene	**<61.8**	ug/kg	375	61.8	1	06/09/22 08:30	06/10/22 02:12	120-82-1	M1
1,1,1-Trichloroethane	**66.4J**	ug/kg	75.0	19.2	1	06/09/22 08:30	06/10/22 02:12	71-55-6	
1,1,2-Trichloroethane	**<27.3**	ug/kg	75.0	27.3	1	06/09/22 08:30	06/10/22 02:12	79-00-5	
Trichloroethene	**<28.1**	ug/kg	75.0	28.1	1	06/09/22 08:30	06/10/22 02:12	79-01-6	
Trichlorofluoromethane	**<21.8**	ug/kg	75.0	21.8	1	06/09/22 08:30	06/10/22 02:12	75-69-4	M1
1,2,3-Trichloropropane	**<36.5**	ug/kg	75.0	36.5	1	06/09/22 08:30	06/10/22 02:12	96-18-4	
1,2,4-Trimethylbenzene	**<22.4**	ug/kg	75.0	22.4	1	06/09/22 08:30	06/10/22 02:12	95-63-6	
1,3,5-Trimethylbenzene	**<24.2**	ug/kg	75.0	24.2	1	06/09/22 08:30	06/10/22 02:12	108-67-8	
Vinyl chloride	**<15.2**	ug/kg	75.0	15.2	1	06/09/22 08:30	06/10/22 02:12	75-01-4	
m&p-Xylene	**<31.7**	ug/kg	150	31.7	1	06/09/22 08:30	06/10/22 02:12	179601-23-1	
o-Xylene	**<22.5**	ug/kg	75.0	22.5	1	06/09/22 08:30	06/10/22 02:12	95-47-6	
Surrogates									
Toluene-d8 (S)	124	%	69-153		1	06/09/22 08:30	06/10/22 02:12	2037-26-5	
4-Bromofluorobenzene (S)	121	%	68-156		1	06/09/22 08:30	06/10/22 02:12	460-00-4	
1,2-Dichlorobenzene-d4 (S)	122	%	71-161		1	06/09/22 08:30	06/10/22 02:12	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**20.0**	%	0.10	0.10	1		06/15/22 15:00		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

Sample: B-11/B-2/B-4 COMP **Lab ID: 40246079002** Collected: 06/06/22 15:00 Received: 06/07/22 15:42 Matrix: Solid

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

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082A GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3541 Pace Analytical Services - Green Bay								
PCB-1016 (Aroclor 1016)	**<18.8**	ug/kg	61.6	18.8	1	06/08/22 17:56	06/09/22 14:51	12674-11-2	
PCB-1221 (Aroclor 1221)	**<18.8**	ug/kg	61.6	18.8	1	06/08/22 17:56	06/09/22 14:51	11104-28-2	
PCB-1232 (Aroclor 1232)	**<18.8**	ug/kg	61.6	18.8	1	06/08/22 17:56	06/09/22 14:51	11141-16-5	
PCB-1242 (Aroclor 1242)	**<18.8**	ug/kg	61.6	18.8	1	06/08/22 17:56	06/09/22 14:51	53469-21-9	
PCB-1248 (Aroclor 1248)	**<18.8**	ug/kg	61.6	18.8	1	06/08/22 17:56	06/09/22 14:51	12672-29-6	
PCB-1254 (Aroclor 1254)	**<18.8**	ug/kg	61.6	18.8	1	06/08/22 17:56	06/09/22 14:51	11097-69-1	
PCB-1260 (Aroclor 1260)	**<18.8**	ug/kg	61.6	18.8	1	06/08/22 17:56	06/09/22 14:51	11096-82-5	
PCB, Total	**<18.8**	ug/kg	61.6	18.8	1	06/08/22 17:56	06/09/22 14:51	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	80	%	50-99		1	06/08/22 17:56	06/09/22 14:51	877-09-8	
Decachlorobiphenyl (S)	74	%	38-95		1	06/08/22 17:56	06/09/22 14:51	2051-24-3	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Green Bay								
Arsenic	**1.9J**	mg/kg	2.9	1.7	1	06/08/22 06:04	06/08/22 14:20	7440-38-2	
Barium	**29.6**	mg/kg	0.59	0.18	1	06/08/22 06:04	06/08/22 14:20	7440-39-3	
Cadmium	**<0.16**	mg/kg	0.59	0.16	1	06/08/22 06:04	06/08/22 14:20	7440-43-9	
Chromium	**11.4**	mg/kg	1.2	0.33	1	06/08/22 06:04	06/08/22 14:20	7440-47-3	
Lead	**2.9**	mg/kg	2.4	0.71	1	06/08/22 06:04	06/08/22 14:20	7439-92-1	
Selenium	**<1.5**	mg/kg	4.7	1.5	1	06/08/22 06:04	06/08/22 14:20	7782-49-2	
Silver	**<0.36**	mg/kg	1.2	0.36	1	06/08/22 06:04	06/08/22 14:20	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471 Pace Analytical Services - Green Bay								
Mercury	**<0.012**	mg/kg	0.042	0.012	1	06/13/22 09:44	06/14/22 10:48	7439-97-6	
8270E MSSV FULL LIST MICROWAVE	Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
1,2,4-Trichlorobenzene	**<58.0**	ug/kg	193	58.0	2.5	06/09/22 12:34	06/10/22 19:40	120-82-1	
1,2-Dichlorobenzene	**<161**	ug/kg	538	161	2.5	06/09/22 12:34	06/10/22 19:40	95-50-1	
1,3-Dichlorobenzene	**<71.0**	ug/kg	237	71.0	2.5	06/09/22 12:34	06/10/22 19:40	541-73-1	
1,4-Dichlorobenzene	**<71.5**	ug/kg	238	71.5	2.5	06/09/22 12:34	06/10/22 19:40	106-46-7	
2,2'-Oxybis(1-chloropropane)	**<132**	ug/kg	441	132	2.5	06/09/22 12:34	06/10/22 19:40	108-60-1	
2,4,5-Trichlorophenol	**<90.6**	ug/kg	302	90.6	2.5	06/09/22 12:34	06/10/22 19:40	95-95-4	
2,4,6-Trichlorophenol	**<78.2**	ug/kg	261	78.2	2.5	06/09/22 12:34	06/10/22 19:40	88-06-2	
2,4-Dichlorophenol	**<137**	ug/kg	457	137	2.5	06/09/22 12:34	06/10/22 19:40	120-83-2	
2,4-Dimethylphenol	**<101**	ug/kg	338	101	2.5	06/09/22 12:34	06/10/22 19:40	105-67-9	
2,4-Dinitrophenol	**<156**	ug/kg	521	156	2.5	06/09/22 12:34	06/10/22 19:40	51-28-5	
2,4-Dinitrotoluene	**<73.4**	ug/kg	245	73.4	2.5	06/09/22 12:34	06/10/22 19:40	121-14-2	
2,6-Dinitrotoluene	**<97.4**	ug/kg	325	97.4	2.5	06/09/22 12:34	06/10/22 19:40	606-20-2	
2-Chloronaphthalene	**<65.9**	ug/kg	220	65.9	2.5	06/09/22 12:34	06/10/22 19:40	91-58-7	
2-Chlorophenol	**<128**	ug/kg	427	128	2.5	06/09/22 12:34	06/10/22 19:40	95-57-8	
2-Methylnaphthalene	**<133**	ug/kg	444	133	2.5	06/09/22 12:34	06/10/22 19:40	91-57-6	
2-Methylphenol(o-Cresol)	**<93.2**	ug/kg	311	93.2	2.5	06/09/22 12:34	06/10/22 19:40	95-48-7	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
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ANALYTICAL RESULTS

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

Sample: B-11/B-2/B-4 COMP **Lab ID: 40246079002** Collected: 06/06/22 15:00 Received: 06/07/22 15:42 Matrix: Solid

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

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV FULL LIST MICROWAVE	Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
2-Nitroaniline	**<146**	ug/kg	487	146	2.5	06/09/22 12:34	06/10/22 19:40	88-74-4	
2-Nitrophenol	**<162**	ug/kg	540	162	2.5	06/09/22 12:34	06/10/22 19:40	88-75-5	
3&4-Methylphenol(m&p Cresol)	**<94.0**	ug/kg	313	94.0	2.5	06/09/22 12:34	06/10/22 19:40		
3,3'-Dichlorobenzidine	**<139**	ug/kg	464	139	2.5	06/09/22 12:34	06/10/22 19:40	91-94-1	
3-Nitroaniline	**<87.2**	ug/kg	291	87.2	2.5	06/09/22 12:34	06/10/22 19:40	99-09-2	
4,6-Dinitro-2-methylphenol	**<158**	ug/kg	527	158	2.5	06/09/22 12:34	06/10/22 19:40	534-52-1	
4-Bromophenylphenyl ether	**<107**	ug/kg	358	107	2.5	06/09/22 12:34	06/10/22 19:40	101-55-3	
4-Chloro-3-methylphenol	**<160**	ug/kg	532	160	2.5	06/09/22 12:34	06/10/22 19:40	59-50-7	
4-Chloroaniline	**<84.3**	ug/kg	281	84.3	2.5	06/09/22 12:34	06/10/22 19:40	106-47-8	2q
4-Chlorophenylphenyl ether	**<95.5**	ug/kg	318	95.5	2.5	06/09/22 12:34	06/10/22 19:40	7005-72-3	
4-Nitroaniline	**<213**	ug/kg	710	213	2.5	06/09/22 12:34	06/10/22 19:40	100-01-6	
4-Nitrophenol	**<129**	ug/kg	430	129	2.5	06/09/22 12:34	06/10/22 19:40	100-02-7	
Acenaphthene	**<182**	ug/kg	606	182	2.5	06/09/22 12:34	06/10/22 19:40	83-32-9	
Acenaphthylene	**<183**	ug/kg	610	183	2.5	06/09/22 12:34	06/10/22 19:40	208-96-8	
Anthracene	**<82.0**	ug/kg	273	82.0	2.5	06/09/22 12:34	06/10/22 19:40	120-12-7	
Benzo(a)anthracene	**<79.4**	ug/kg	265	79.4	2.5	06/09/22 12:34	06/10/22 19:40	56-55-3	
Benzo(a)pyrene	**<77.2**	ug/kg	257	77.2	2.5	06/09/22 12:34	06/10/22 19:40	50-32-8	
Benzo(b)fluoranthene	**<88.1**	ug/kg	294	88.1	2.5	06/09/22 12:34	06/10/22 19:40	205-99-2	
Benzo(g,h,i)perylene	**<134**	ug/kg	447	134	2.5	06/09/22 12:34	06/10/22 19:40	191-24-2	
Benzo(k)fluoranthene	**<123**	ug/kg	409	123	2.5	06/09/22 12:34	06/10/22 19:40	207-08-9	
Butylbenzylphthalate	**<82.2**	ug/kg	274	82.2	2.5	06/09/22 12:34	06/10/22 19:40	85-68-7	
Carbazole	**<80.3**	ug/kg	268	80.3	2.5	06/09/22 12:34	06/10/22 19:40	86-74-8	
Chrysene	**<76.7**	ug/kg	256	76.7	2.5	06/09/22 12:34	06/10/22 19:40	218-01-9	
Di-n-butylphthalate	**<76.7**	ug/kg	256	76.7	2.5	06/09/22 12:34	06/10/22 19:40	84-74-2	
Di-n-octylphthalate	**<115**	ug/kg	384	115	2.5	06/09/22 12:34	06/10/22 19:40	117-84-0	
Dibenz(a,h)anthracene	**<139**	ug/kg	464	139	2.5	06/09/22 12:34	06/10/22 19:40	53-70-3	
Dibenzofuran	**<62.1**	ug/kg	207	62.1	2.5	06/09/22 12:34	06/10/22 19:40	132-64-9	
Diethylphthalate	**<85.0**	ug/kg	283	85.0	2.5	06/09/22 12:34	06/10/22 19:40	84-66-2	
Dimethylphthalate	**<66.7**	ug/kg	222	66.7	2.5	06/09/22 12:34	06/10/22 19:40	131-11-3	
Fluoranthene	**<72.6**	ug/kg	242	72.6	2.5	06/09/22 12:34	06/10/22 19:40	206-44-0	
Fluorene	**<59.9**	ug/kg	200	59.9	2.5	06/09/22 12:34	06/10/22 19:40	86-73-7	
Hexachloro-1,3-butadiene	**<131**	ug/kg	436	131	2.5	06/09/22 12:34	06/10/22 19:40	87-68-3	
Hexachlorobenzene	**<86.3**	ug/kg	288	86.3	2.5	06/09/22 12:34	06/10/22 19:40	118-74-1	
Hexachlorocyclopentadiene	**<121**	ug/kg	405	121	2.5	06/09/22 12:34	06/10/22 19:40	77-47-4	
Hexachloroethane	**<82.1**	ug/kg	274	82.1	2.5	06/09/22 12:34	06/10/22 19:40	67-72-1	
Indeno(1,2,3-cd)pyrene	**<111**	ug/kg	370	111	2.5	06/09/22 12:34	06/10/22 19:40	193-39-5	
Isophorone	**<78.8**	ug/kg	263	78.8	2.5	06/09/22 12:34	06/10/22 19:40	78-59-1	
N-Nitroso-di-n-propylamine	**<81.3**	ug/kg	271	81.3	2.5	06/09/22 12:34	06/10/22 19:40	621-64-7	
N-Nitrosodiphenylamine	**<696**	ug/kg	2320	696	2.5	06/09/22 12:34	06/10/22 19:40	86-30-6	
Naphthalene	**<179**	ug/kg	598	179	2.5	06/09/22 12:34	06/10/22 19:40	91-20-3	
Nitrobenzene	**<104**	ug/kg	347	104	2.5	06/09/22 12:34	06/10/22 19:40	98-95-3	
Pentachlorophenol	**<113**	ug/kg	377	113	2.5	06/09/22 12:34	06/10/22 19:40	87-86-5	
Phenanthrene	**<65.8**	ug/kg	219	65.8	2.5	06/09/22 12:34	06/10/22 19:40	85-01-8	
Phenol	**<122**	ug/kg	406	122	2.5	06/09/22 12:34	06/10/22 19:40	108-95-2	D3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

Sample: B-11/B-2/B-4 COMP **Lab ID: 40246079002** Collected: 06/06/22 15:00 Received: 06/07/22 15:42 Matrix: Solid

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

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV FULL LIST MICROWAVE	Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
Pyrene	**<114**	ug/kg	379	114	2.5	06/09/22 12:34	06/10/22 19:40	129-00-0	
bis(2-Chloroethoxy)methane	**<138**	ug/kg	460	138	2.5	06/09/22 12:34	06/10/22 19:40	111-91-1	
bis(2-Chloroethyl) ether	**<160**	ug/kg	534	160	2.5	06/09/22 12:34	06/10/22 19:40	111-44-4	
bis(2-Ethylhexyl)phthalate	**869**	ug/kg	284	85.3	2.5	06/09/22 12:34	06/10/22 19:40	117-81-7	
Surrogates									
Nitrobenzene-d5 (S)	75	%	10-125		2.5	06/09/22 12:34	06/10/22 19:40	4165-60-0	
2-Fluorobiphenyl (S)	61	%	12-118		2.5	06/09/22 12:34	06/10/22 19:40	321-60-8	
Terphenyl-d14 (S)	68	%	10-124		2.5	06/09/22 12:34	06/10/22 19:40	1718-51-0	
Phenol-d6 (S)	73	%	10-125		2.5	06/09/22 12:34	06/10/22 19:40	13127-88-3	
2-Fluorophenol (S)	78	%	10-130		2.5	06/09/22 12:34	06/10/22 19:40	367-12-4	
2,4,6-Tribromophenol (S)	71	%	10-144		2.5	06/09/22 12:34	06/10/22 19:40	118-79-6	
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
Benzene	**<17.3**	ug/kg	29.1	17.3	1	06/09/22 08:30	06/10/22 13:09	71-43-2	
Bromobenzene	**<28.4**	ug/kg	72.8	28.4	1	06/09/22 08:30	06/10/22 13:09	108-86-1	
Bromochloromethane	**<20.0**	ug/kg	72.8	20.0	1	06/09/22 08:30	06/10/22 13:09	74-97-5	
Bromodichloromethane	**<17.3**	ug/kg	72.8	17.3	1	06/09/22 08:30	06/10/22 13:09	75-27-4	
Bromoform	**<320**	ug/kg	364	320	1	06/09/22 08:30	06/10/22 13:09	75-25-2	
Bromomethane	**<102**	ug/kg	364	102	1	06/09/22 08:30	06/10/22 13:09	74-83-9	1q,L1
n-Butylbenzene	**<33.4**	ug/kg	72.8	33.4	1	06/09/22 08:30	06/10/22 13:09	104-51-8	
sec-Butylbenzene	**<17.8**	ug/kg	72.8	17.8	1	06/09/22 08:30	06/10/22 13:09	135-98-8	
tert-Butylbenzene	**<22.9**	ug/kg	72.8	22.9	1	06/09/22 08:30	06/10/22 13:09	98-06-6	
Carbon tetrachloride	**<16.0**	ug/kg	72.8	16.0	1	06/09/22 08:30	06/10/22 13:09	56-23-5	
Chlorobenzene	**<8.7**	ug/kg	72.8	8.7	1	06/09/22 08:30	06/10/22 13:09	108-90-7	
Chloroethane	**<30.7**	ug/kg	364	30.7	1	06/09/22 08:30	06/10/22 13:09	75-00-3	1q,L1
Chloroform	**<52.1**	ug/kg	364	52.1	1	06/09/22 08:30	06/10/22 13:09	67-66-3	
Chloromethane	**<27.7**	ug/kg	72.8	27.7	1	06/09/22 08:30	06/10/22 13:09	74-87-3	
2-Chlorotoluene	**<23.6**	ug/kg	72.8	23.6	1	06/09/22 08:30	06/10/22 13:09	95-49-8	
4-Chlorotoluene	**<27.7**	ug/kg	72.8	27.7	1	06/09/22 08:30	06/10/22 13:09	106-43-4	
1,2-Dibromo-3-chloropropane	**<56.5**	ug/kg	364	56.5	1	06/09/22 08:30	06/10/22 13:09	96-12-8	
Dibromochloromethane	**<249**	ug/kg	364	249	1	06/09/22 08:30	06/10/22 13:09	124-48-1	
1,2-Dibromoethane (EDB)	**<20.0**	ug/kg	72.8	20.0	1	06/09/22 08:30	06/10/22 13:09	106-93-4	
Dibromomethane	**<21.6**	ug/kg	72.8	21.6	1	06/09/22 08:30	06/10/22 13:09	74-95-3	
1,2-Dichlorobenzene	**<22.6**	ug/kg	72.8	22.6	1	06/09/22 08:30	06/10/22 13:09	95-50-1	
1,3-Dichlorobenzene	**<20.0**	ug/kg	72.8	20.0	1	06/09/22 08:30	06/10/22 13:09	541-73-1	
1,4-Dichlorobenzene	**<20.0**	ug/kg	72.8	20.0	1	06/09/22 08:30	06/10/22 13:09	106-46-7	
Dichlorodifluoromethane	**<31.3**	ug/kg	72.8	31.3	1	06/09/22 08:30	06/10/22 13:09	75-71-8	
1,1-Dichloroethane	**<18.6**	ug/kg	72.8	18.6	1	06/09/22 08:30	06/10/22 13:09	75-34-3	
1,2-Dichloroethane	**<16.8**	ug/kg	72.8	16.8	1	06/09/22 08:30	06/10/22 13:09	107-06-2	
1,1-Dichloroethene	**<24.2**	ug/kg	72.8	24.2	1	06/09/22 08:30	06/10/22 13:09	75-35-4	
cis-1,2-Dichloroethene	**<15.6**	ug/kg	72.8	15.6	1	06/09/22 08:30	06/10/22 13:09	156-59-2	
trans-1,2-Dichloroethene	**<15.7**	ug/kg	72.8	15.7	1	06/09/22 08:30	06/10/22 13:09	156-60-5	
1,2-Dichloropropane	**<17.3**	ug/kg	72.8	17.3	1	06/09/22 08:30	06/10/22 13:09	78-87-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

Sample: B-11/B-2/B-4 COMP **Lab ID: 40246079002** Collected: 06/06/22 15:00 Received: 06/07/22 15:42 Matrix: Solid

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

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
1,3-Dichloropropane	**<15.9**	ug/kg	72.8	15.9	1	06/09/22 08:30	06/10/22 13:09	142-28-9	
2,2-Dichloropropane	**<19.7**	ug/kg	72.8	19.7	1	06/09/22 08:30	06/10/22 13:09	594-20-7	
1,1-Dichloropropene	**<23.6**	ug/kg	72.8	23.6	1	06/09/22 08:30	06/10/22 13:09	563-58-6	
cis-1,3-Dichloropropene	**<48.1**	ug/kg	364	48.1	1	06/09/22 08:30	06/10/22 13:09	10061-01-5	
trans-1,3-Dichloropropene	**<208**	ug/kg	364	208	1	06/09/22 08:30	06/10/22 13:09	10061-02-6	
Diisopropyl ether	**<18.1**	ug/kg	72.8	18.1	1	06/09/22 08:30	06/10/22 13:09	108-20-3	
Ethylbenzene	**<17.3**	ug/kg	72.8	17.3	1	06/09/22 08:30	06/10/22 13:09	100-41-4	
Hexachloro-1,3-butadiene	**<145**	ug/kg	364	145	1	06/09/22 08:30	06/10/22 13:09	87-68-3	
Isopropylbenzene (Cumene)	**<19.7**	ug/kg	72.8	19.7	1	06/09/22 08:30	06/10/22 13:09	98-82-8	
p-Isopropyltoluene	**<22.1**	ug/kg	72.8	22.1	1	06/09/22 08:30	06/10/22 13:09	99-87-6	
Methylene Chloride	**<20.2**	ug/kg	72.8	20.2	1	06/09/22 08:30	06/10/22 13:09	75-09-2	
Methyl-tert-butyl ether	**<21.4**	ug/kg	72.8	21.4	1	06/09/22 08:30	06/10/22 13:09	1634-04-4	
Naphthalene	**<22.7**	ug/kg	364	22.7	1	06/09/22 08:30	06/10/22 13:09	91-20-3	
n-Propylbenzene	**<17.5**	ug/kg	72.8	17.5	1	06/09/22 08:30	06/10/22 13:09	103-65-1	
Styrene	**<18.6**	ug/kg	72.8	18.6	1	06/09/22 08:30	06/10/22 13:09	100-42-5	
1,1,1,2-Tetrachloroethane	**<17.5**	ug/kg	72.8	17.5	1	06/09/22 08:30	06/10/22 13:09	630-20-6	
1,1,2,2-Tetrachloroethane	**<26.4**	ug/kg	72.8	26.4	1	06/09/22 08:30	06/10/22 13:09	79-34-5	
Tetrachloroethene	**<28.3**	ug/kg	72.8	28.3	1	06/09/22 08:30	06/10/22 13:09	127-18-4	
Toluene	**<18.4**	ug/kg	72.8	18.4	1	06/09/22 08:30	06/10/22 13:09	108-88-3	
1,2,3-Trichlorobenzene	**<81.1**	ug/kg	364	81.1	1	06/09/22 08:30	06/10/22 13:09	87-61-6	
1,2,4-Trichlorobenzene	**<60.0**	ug/kg	364	60.0	1	06/09/22 08:30	06/10/22 13:09	120-82-1	
1,1,1-Trichloroethane	**<18.6**	ug/kg	72.8	18.6	1	06/09/22 08:30	06/10/22 13:09	71-55-6	
1,1,2-Trichloroethane	**<26.5**	ug/kg	72.8	26.5	1	06/09/22 08:30	06/10/22 13:09	79-00-5	
Trichloroethene	**<27.2**	ug/kg	72.8	27.2	1	06/09/22 08:30	06/10/22 13:09	79-01-6	
Trichlorofluoromethane	**<21.1**	ug/kg	72.8	21.1	1	06/09/22 08:30	06/10/22 13:09	75-69-4	
1,2,3-Trichloropropane	**<35.4**	ug/kg	72.8	35.4	1	06/09/22 08:30	06/10/22 13:09	96-18-4	
1,2,4-Trimethylbenzene	**<21.7**	ug/kg	72.8	21.7	1	06/09/22 08:30	06/10/22 13:09	95-63-6	
1,3,5-Trimethylbenzene	**<23.5**	ug/kg	72.8	23.5	1	06/09/22 08:30	06/10/22 13:09	108-67-8	
Vinyl chloride	**<14.7**	ug/kg	72.8	14.7	1	06/09/22 08:30	06/10/22 13:09	75-01-4	
m&p-Xylene	**<30.7**	ug/kg	146	30.7	1	06/09/22 08:30	06/10/22 13:09	179601-23-1	
o-Xylene	**<21.8**	ug/kg	72.8	21.8	1	06/09/22 08:30	06/10/22 13:09	95-47-6	
Surrogates									
Toluene-d8 (S)	149	%	69-153		1	06/09/22 08:30	06/10/22 13:09	2037-26-5	
4-Bromofluorobenzene (S)	139	%	68-156		1	06/09/22 08:30	06/10/22 13:09	460-00-4	
1,2-Dichlorobenzene-d4 (S)	132	%	71-161		1	06/09/22 08:30	06/10/22 13:09	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**18.6**	%	0.10	0.10	1		06/15/22 15:00		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

QC Batch: 417872
QC Batch Method: EPA 7471
Analysis Method: EPA 7471
Analysis Description: 7471 Mercury
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40246079001, 40246079002

METHOD BLANK: 2406499 Matrix: Solid
Associated Lab Samples: 40246079001, 40246079002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	<0.010	0.035	06/14/22 09:56	

LABORATORY CONTROL SAMPLE: 2406500

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	0.83	0.82	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2406501 2406502

Parameter	Units	40245900001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	0.078	0.88	0.88	0.99	1.1	103	112	85-115	8	20	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

QC Batch: 417706
QC Batch Method: EPA 3050B
Analysis Method: EPA 6010D
Analysis Description: 6010D MET
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40246079001, 40246079002

METHOD BLANK: 2405181 Matrix: Solid
Associated Lab Samples: 40246079001, 40246079002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	<1.5	2.5	06/08/22 13:05	
Barium	mg/kg	<0.15	0.50	06/08/22 13:05	
Cadmium	mg/kg	<0.13	0.50	06/08/22 13:05	
Chromium	mg/kg	<0.28	1.0	06/08/22 13:05	
Lead	mg/kg	<0.60	2.0	06/08/22 13:05	
Selenium	mg/kg	<1.3	4.0	06/08/22 13:05	
Silver	mg/kg	<0.31	1.0	06/08/22 13:05	

LABORATORY CONTROL SAMPLE: 2405182

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	25	25.7	103	80-120	
Barium	mg/kg	25	26.7	107	80-120	
Cadmium	mg/kg	25	26.7	107	80-120	
Chromium	mg/kg	25	26.6	106	80-120	
Lead	mg/kg	25	26.8	107	80-120	
Selenium	mg/kg	25	27.1	108	80-120	
Silver	mg/kg	12.5	13.6	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2405183 2405184

Parameter	Units	40246035001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	<3.5	29.9	29.8	32.5	32.7	102	104	75-125	1	20	
Barium	mg/kg	82.6	29.9	29.8	146	158	211	253	75-125	8	20	M0
Cadmium	mg/kg	<0.32	29.9	29.8	29.6	30.7	99	103	75-125	4	20	
Chromium	mg/kg	27.2	29.9	29.8	63.5	67.8	121	136	75-125	7	20	M0
Lead	mg/kg	12.7	29.9	29.8	45.2	48.6	109	120	75-125	7	20	
Selenium	mg/kg	<3.1	29.9	29.8	29.1	30.6	97	103	75-125	5	20	
Silver	mg/kg	<0.73	14.9	14.9	15.4	15.8	103	106	75-125	3	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

QC Batch: 417884
QC Batch Method: EPA 5035/5030B
Analysis Method: EPA 8260
Analysis Description: 8260 MSV Med Level Normal List
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40246079001, 40246079002

METHOD BLANK: 2406543 Matrix: Solid
Associated Lab Samples: 40246079001, 40246079002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	<12.0	50.0	06/09/22 20:00	
1,1,1-Trichloroethane	ug/kg	<12.8	50.0	06/09/22 20:00	
1,1,2,2-Tetrachloroethane	ug/kg	<18.1	50.0	06/09/22 20:00	
1,1,2-Trichloroethane	ug/kg	<18.2	50.0	06/09/22 20:00	
1,1-Dichloroethane	ug/kg	<12.8	50.0	06/09/22 20:00	
1,1-Dichloroethene	ug/kg	<16.6	50.0	06/09/22 20:00	
1,1-Dichloropropene	ug/kg	<16.2	50.0	06/09/22 20:00	
1,2,3-Trichlorobenzene	ug/kg	<55.7	250	06/09/22 20:00	
1,2,3-Trichloropropane	ug/kg	<24.3	50.0	06/09/22 20:00	
1,2,4-Trichlorobenzene	ug/kg	<41.2	250	06/09/22 20:00	
1,2,4-Trimethylbenzene	ug/kg	<14.9	50.0	06/09/22 20:00	
1,2-Dibromo-3-chloropropane	ug/kg	<38.8	250	06/09/22 20:00	
1,2-Dibromoethane (EDB)	ug/kg	<13.7	50.0	06/09/22 20:00	
1,2-Dichlorobenzene	ug/kg	<15.5	50.0	06/09/22 20:00	
1,2-Dichloroethane	ug/kg	<11.5	50.0	06/09/22 20:00	
1,2-Dichloropropane	ug/kg	<11.9	50.0	06/09/22 20:00	
1,3,5-Trimethylbenzene	ug/kg	<16.1	50.0	06/09/22 20:00	
1,3-Dichlorobenzene	ug/kg	<13.7	50.0	06/09/22 20:00	
1,3-Dichloropropane	ug/kg	<10.9	50.0	06/09/22 20:00	
1,4-Dichlorobenzene	ug/kg	<13.7	50.0	06/09/22 20:00	
2,2-Dichloropropane	ug/kg	<13.5	50.0	06/09/22 20:00	
2-Chlorotoluene	ug/kg	<16.2	50.0	06/09/22 20:00	
4-Chlorotoluene	ug/kg	<19.0	50.0	06/09/22 20:00	
Benzene	ug/kg	<11.9	20.0	06/09/22 20:00	
Bromobenzene	ug/kg	<19.5	50.0	06/09/22 20:00	
Bromochloromethane	ug/kg	<13.7	50.0	06/09/22 20:00	
Bromodichloromethane	ug/kg	<11.9	50.0	06/09/22 20:00	
Bromoform	ug/kg	<220	250	06/09/22 20:00	
Bromomethane	ug/kg	<70.1	250	06/09/22 20:00	1q
Carbon tetrachloride	ug/kg	<11.0	50.0	06/09/22 20:00	
Chlorobenzene	ug/kg	<6.0	50.0	06/09/22 20:00	
Chloroethane	ug/kg	<21.1	250	06/09/22 20:00	1q
Chloroform	ug/kg	<35.8	250	06/09/22 20:00	
Chloromethane	ug/kg	<19.0	50.0	06/09/22 20:00	
cis-1,2-Dichloroethene	ug/kg	<10.7	50.0	06/09/22 20:00	
cis-1,3-Dichloropropene	ug/kg	<33.0	250	06/09/22 20:00	
Dibromochloromethane	ug/kg	<171	250	06/09/22 20:00	
Dibromomethane	ug/kg	<14.8	50.0	06/09/22 20:00	
Dichlorodifluoromethane	ug/kg	<21.5	50.0	06/09/22 20:00	
Diisopropyl ether	ug/kg	<12.4	50.0	06/09/22 20:00	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

METHOD BLANK: 2406543 Matrix: Solid
Associated Lab Samples: 40246079001, 40246079002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Ethylbenzene	ug/kg	<11.9	50.0	06/09/22 20:00	
Hexachloro-1,3-butadiene	ug/kg	<99.4	250	06/09/22 20:00	
Isopropylbenzene (Cumene)	ug/kg	<13.5	50.0	06/09/22 20:00	
m&p-Xylene	ug/kg	<21.1	100	06/09/22 20:00	
Methyl-tert-butyl ether	ug/kg	<14.7	50.0	06/09/22 20:00	
Methylene Chloride	ug/kg	<13.9	50.0	06/09/22 20:00	
n-Butylbenzene	ug/kg	<22.9	50.0	06/09/22 20:00	
n-Propylbenzene	ug/kg	<12.0	50.0	06/09/22 20:00	
Naphthalene	ug/kg	<15.6	250	06/09/22 20:00	
o-Xylene	ug/kg	<15.0	50.0	06/09/22 20:00	
p-Isopropyltoluene	ug/kg	<15.2	50.0	06/09/22 20:00	
sec-Butylbenzene	ug/kg	<12.2	50.0	06/09/22 20:00	
Styrene	ug/kg	<12.8	50.0	06/09/22 20:00	
tert-Butylbenzene	ug/kg	<15.7	50.0	06/09/22 20:00	
Tetrachloroethene	ug/kg	<19.4	50.0	06/09/22 20:00	
Toluene	ug/kg	<12.6	50.0	06/09/22 20:00	
trans-1,2-Dichloroethene	ug/kg	<10.8	50.0	06/09/22 20:00	
trans-1,3-Dichloropropene	ug/kg	<143	250	06/09/22 20:00	
Trichloroethene	ug/kg	<18.7	50.0	06/09/22 20:00	
Trichlorofluoromethane	ug/kg	<14.5	50.0	06/09/22 20:00	
Vinyl chloride	ug/kg	<10.1	50.0	06/09/22 20:00	
1,2-Dichlorobenzene-d4 (S)	%	93	71-161	06/09/22 20:00	
4-Bromofluorobenzene (S)	%	90	68-156	06/09/22 20:00	
Toluene-d8 (S)	%	100	69-153	06/09/22 20:00	

LABORATORY CONTROL SAMPLE: 2406544

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/kg	2500	2670	107	70-130	
1,1,2,2-Tetrachloroethane	ug/kg	2500	2600	104	70-130	
1,1,2-Trichloroethane	ug/kg	2500	2630	105	70-130	
1,1-Dichloroethane	ug/kg	2500	2730	109	70-130	
1,1-Dichloroethene	ug/kg	2500	2470	99	77-120	
1,2,4-Trichlorobenzene	ug/kg	2500	2370	95	67-130	
1,2-Dibromo-3-chloropropane	ug/kg	2500	2650	106	70-130	
1,2-Dibromoethane (EDB)	ug/kg	2500	2530	101	70-130	
1,2-Dichlorobenzene	ug/kg	2500	2690	108	70-130	
1,2-Dichloroethane	ug/kg	2500	2820	113	70-130	
1,2-Dichloropropane	ug/kg	2500	2510	100	80-123	
1,3-Dichlorobenzene	ug/kg	2500	2660	107	70-130	
1,4-Dichlorobenzene	ug/kg	2500	2580	103	70-130	
Benzene	ug/kg	2500	2480	99	70-130	
Bromodichloromethane	ug/kg	2500	2550	102	70-130	
Bromoform	ug/kg	2500	2160	86	60-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

LABORATORY CONTROL SAMPLE: 2406544

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Bromomethane	ug/kg	2500	4400	176	45-153	CC,L1
Carbon tetrachloride	ug/kg	2500	2900	116	70-130	
Chlorobenzene	ug/kg	2500	2670	107	70-130	
Chloroethane	ug/kg	2500	4240	170	55-160	CC,L1
Chloroform	ug/kg	2500	2510	100	80-120	
Chloromethane	ug/kg	2500	2100	84	47-130	
cis-1,2-Dichloroethene	ug/kg	2500	2410	96	70-130	
cis-1,3-Dichloropropene	ug/kg	2500	2440	97	70-130	
Dibromochloromethane	ug/kg	2500	2280	91	70-130	
Dichlorodifluoromethane	ug/kg	2500	1940	78	16-83	
Ethylbenzene	ug/kg	2500	2440	97	80-120	
Isopropylbenzene (Cumene)	ug/kg	2500	2470	99	70-130	
m&p-Xylene	ug/kg	5000	4890	98	70-130	
Methyl-tert-butyl ether	ug/kg	2500	2210	88	65-130	
Methylene Chloride	ug/kg	2500	2540	101	70-130	
o-Xylene	ug/kg	2500	2490	99	70-130	
Styrene	ug/kg	2500	2530	101	70-130	
Tetrachloroethene	ug/kg	2500	2630	105	70-130	
Toluene	ug/kg	2500	2500	100	80-120	
trans-1,2-Dichloroethene	ug/kg	2500	2420	97	70-130	
trans-1,3-Dichloropropene	ug/kg	2500	2470	99	70-130	
Trichloroethene	ug/kg	2500	2550	102	70-130	
Trichlorofluoromethane	ug/kg	2500	2900	116	70-130	
Vinyl chloride	ug/kg	2500	2170	87	59-114	
1,2-Dichlorobenzene-d4 (S)	%			105	71-161	
4-Bromofluorobenzene (S)	%			109	68-156	
Toluene-d8 (S)	%			113	69-153	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2406545 2406546

Parameter	Units	40246079001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/kg	66.4J	1250	1250	1480	1650	113	127	69-130	11	20	
1,1,2,2-Tetrachloroethane	ug/kg	<27.2	1250	1250	1420	1510	114	121	70-130	6	20	
1,1,2-Trichloroethane	ug/kg	<27.3	1250	1250	1370	1520	110	121	70-130	10	20	
1,1-Dichloroethane	ug/kg	<19.2	1250	1250	1490	1550	119	124	70-130	4	20	
1,1-Dichloroethene	ug/kg	<24.9	1250	1250	1320	1430	105	114	55-120	8	22	
1,2,4-Trichlorobenzene	ug/kg	<61.8	1250	1250	1680	1420	134	113	67-130	17	20	M1
1,2-Dibromo-3-chloropropane	ug/kg	<58.2	1250	1250	1370	1380	110	110	70-130	0	22	
1,2-Dibromoethane (EDB)	ug/kg	<20.6	1250	1250	1310	1450	104	116	70-130	10	20	
1,2-Dichlorobenzene	ug/kg	<23.3	1250	1250	1570	1540	126	123	70-130	2	20	
1,2-Dichloroethane	ug/kg	<17.3	1250	1250	1530	1670	123	134	70-130	9	20	M1
1,2-Dichloropropane	ug/kg	<17.9	1250	1250	1370	1470	110	118	80-123	7	20	
1,3-Dichlorobenzene	ug/kg	<20.6	1250	1250	1520	1420	121	114	70-130	6	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2406545 2406546

Parameter	Units	40246079001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dichlorobenzene	ug/kg	<20.6	1250	1250	1410	1400	113	112	70-130	1	20	
Benzene	ug/kg	<17.9	1250	1250	1390	1430	111	115	70-130	3	20	
Bromodichloromethane	ug/kg	<17.9	1250	1250	1390	1460	111	117	70-130	5	20	
Bromoform	ug/kg	<330	1250	1250	1180	1230	94	99	60-130	5	20	
Bromomethane	ug/kg	<105	1250	1250	2510	2600	201	208	38-153	4	20	CC,M0
Carbon tetrachloride	ug/kg	<16.5	1250	1250	1440	1510	116	121	62-130	5	20	
Chlorobenzene	ug/kg	<9.0	1250	1250	1490	1500	119	120	70-130	1	20	
Chloroethane	ug/kg	<31.7	1250	1250	2560	3110	205	249	53-160	19	24	CC,M0
Chloroform	ug/kg	<53.7	1250	1250	1500	1560	120	125	80-120	4	20	M1
Chloromethane	ug/kg	<28.5	1250	1250	1220	1250	98	100	10-130	2	20	
cis-1,2-Dichloroethene	ug/kg	<16.1	1250	1250	1290	1380	103	110	70-130	6	20	
cis-1,3-Dichloropropene	ug/kg	<49.5	1250	1250	1300	1360	104	109	70-130	4	20	
Dibromochloromethane	ug/kg	<256	1250	1250	1250	1360	100	108	70-130	8	20	
Dichlorodifluoromethane	ug/kg	<32.3	1250	1250	955	1090	76	87	10-83	13	31	M1
Ethylbenzene	ug/kg	<17.9	1250	1250	1370	1400	109	112	80-120	2	20	
Isopropylbenzene (Cumene)	ug/kg	<20.3	1250	1250	1370	1370	110	110	70-130	0	20	
m&p-Xylene	ug/kg	<31.7	2500	2500	2730	2800	109	112	70-130	3	20	
Methyl-tert-butyl ether	ug/kg	<22.1	1250	1250	1240	1320	99	105	66-130	6	20	
Methylene Chloride	ug/kg	<20.9	1250	1250	1440	1580	115	126	70-130	9	20	
o-Xylene	ug/kg	<22.5	1250	1250	1400	1440	112	115	70-130	3	20	
Styrene	ug/kg	<19.2	1250	1250	1320	1370	105	110	70-130	4	20	
Tetrachloroethene	ug/kg	<29.1	1250	1250	1330	1460	106	116	69-130	9	20	
Toluene	ug/kg	20.1J	1250	1250	1360	1450	107	114	79-120	6	20	
trans-1,2-Dichloroethene	ug/kg	<16.2	1250	1250	1320	1410	106	112	70-130	6	20	
trans-1,3-Dichloropropene	ug/kg	<215	1250	1250	1290	1260	103	101	69-130	2	20	
Trichloroethene	ug/kg	<28.1	1250	1250	1480	1520	118	122	70-130	3	20	
Trichlorofluoromethane	ug/kg	<21.8	1250	1250	1640	1840	131	147	50-130	11	22	M1
Vinyl chloride	ug/kg	<15.2	1250	1250	1190	1270	95	102	26-114	7	20	
1,2-Dichlorobenzene-d4 (S)	%						111	113	71-161			
4-Bromofluorobenzene (S)	%						123	125	68-156			
Toluene-d8 (S)	%						117	125	69-153			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

QC Batch: 417814
QC Batch Method: EPA 3541
Analysis Method: EPA 8082A
Analysis Description: 8082 GCS PCB
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40246079001, 40246079002

METHOD BLANK: 2406235 Matrix: Solid
Associated Lab Samples: 40246079001, 40246079002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<15.2	50.0	06/09/22 10:47	
PCB-1221 (Aroclor 1221)	ug/kg	<15.2	50.0	06/09/22 10:47	
PCB-1232 (Aroclor 1232)	ug/kg	<15.2	50.0	06/09/22 10:47	
PCB-1242 (Aroclor 1242)	ug/kg	<15.2	50.0	06/09/22 10:47	
PCB-1248 (Aroclor 1248)	ug/kg	<15.2	50.0	06/09/22 10:47	
PCB-1254 (Aroclor 1254)	ug/kg	<15.2	50.0	06/09/22 10:47	
PCB-1260 (Aroclor 1260)	ug/kg	<15.2	50.0	06/09/22 10:47	
Decachlorobiphenyl (S)	%	88	38-95	06/09/22 10:47	
Tetrachloro-m-xylene (S)	%	87	50-99	06/09/22 10:47	

LABORATORY CONTROL SAMPLE: 2406236

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg		<15.2			
PCB-1221 (Aroclor 1221)	ug/kg		<15.2			
PCB-1232 (Aroclor 1232)	ug/kg		<15.2			
PCB-1242 (Aroclor 1242)	ug/kg		<15.2			
PCB-1248 (Aroclor 1248)	ug/kg		<15.2			
PCB-1254 (Aroclor 1254)	ug/kg		<15.2			
PCB-1260 (Aroclor 1260)	ug/kg	500	437	87	71-104	
Decachlorobiphenyl (S)	%			88	38-95	
Tetrachloro-m-xylene (S)	%			89	50-99	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2406237 2406238

Parameter	Units	40246079002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	<18.8			<18.8	<18.7					20	
PCB-1221 (Aroclor 1221)	ug/kg	<18.8			<18.8	<18.7					20	
PCB-1232 (Aroclor 1232)	ug/kg	<18.8			<18.8	<18.7					20	
PCB-1242 (Aroclor 1242)	ug/kg	<18.8			<18.8	<18.7					20	
PCB-1248 (Aroclor 1248)	ug/kg	<18.8			<18.8	<18.7					20	
PCB-1254 (Aroclor 1254)	ug/kg	<18.8			<18.8	<18.7					20	
PCB-1260 (Aroclor 1260)	ug/kg	<18.8	617	613	474	399	77	65	42-109	17	20	
Decachlorobiphenyl (S)	%						78	65	38-95			
Tetrachloro-m-xylene (S)	%						85	68	50-99			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

QC Batch: 417840
QC Batch Method: EPA 3546
Analysis Method: EPA 8270E
Analysis Description: 8270E Solid MSSV Microwave
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40246079001, 40246079002

METHOD BLANK: 2406319 Matrix: Solid
Associated Lab Samples: 40246079001, 40246079002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/kg	<18.9	62.9	06/10/22 12:56	
1,2-Dichlorobenzene	ug/kg	<52.5	175	06/10/22 12:56	
1,3-Dichlorobenzene	ug/kg	<23.1	77.0	06/10/22 12:56	
1,4-Dichlorobenzene	ug/kg	<23.3	77.5	06/10/22 12:56	
2,2'-Oxybis(1-chloropropane)	ug/kg	<43.0	143	06/10/22 12:56	
2,4,5-Trichlorophenol	ug/kg	<29.5	98.3	06/10/22 12:56	
2,4,6-Trichlorophenol	ug/kg	<25.5	84.8	06/10/22 12:56	
2,4-Dichlorophenol	ug/kg	<44.6	149	06/10/22 12:56	
2,4-Dimethylphenol	ug/kg	<33.0	110	06/10/22 12:56	
2,4-Dinitrophenol	ug/kg	<50.8	169	06/10/22 12:56	
2,4-Dinitrotoluene	ug/kg	<23.9	79.6	06/10/22 12:56	
2,6-Dinitrotoluene	ug/kg	<31.7	106	06/10/22 12:56	
2-Chloronaphthalene	ug/kg	<21.4	71.4	06/10/22 12:56	
2-Chlorophenol	ug/kg	<41.7	139	06/10/22 12:56	
2-Methylnaphthalene	ug/kg	<43.3	144	06/10/22 12:56	
2-Methylphenol(o-Cresol)	ug/kg	<30.3	101	06/10/22 12:56	
2-Nitroaniline	ug/kg	<47.6	159	06/10/22 12:56	
2-Nitrophenol	ug/kg	<52.7	176	06/10/22 12:56	
3&4-Methylphenol(m&p Cresol)	ug/kg	<30.6	102	06/10/22 12:56	
3,3'-Dichlorobenzidine	ug/kg	<45.3	151	06/10/22 12:56	
3-Nitroaniline	ug/kg	<28.4	94.6	06/10/22 12:56	
4,6-Dinitro-2-methylphenol	ug/kg	<51.4	171	06/10/22 12:56	
4-Bromophenylphenyl ether	ug/kg	<35.0	117	06/10/22 12:56	
4-Chloro-3-methylphenol	ug/kg	<51.9	173	06/10/22 12:56	
4-Chloroaniline	ug/kg	<27.4	91.4	06/10/22 12:56	2q
4-Chlorophenylphenyl ether	ug/kg	<31.1	104	06/10/22 12:56	
4-Nitroaniline	ug/kg	<69.3	231	06/10/22 12:56	
4-Nitrophenol	ug/kg	<42.0	140	06/10/22 12:56	
Acenaphthene	ug/kg	<59.2	197	06/10/22 12:56	
Acenaphthylene	ug/kg	<59.5	198	06/10/22 12:56	
Anthracene	ug/kg	<26.7	88.9	06/10/22 12:56	
Benzo(a)anthracene	ug/kg	<25.9	86.2	06/10/22 12:56	
Benzo(a)pyrene	ug/kg	<25.1	83.7	06/10/22 12:56	
Benzo(b)fluoranthene	ug/kg	<28.7	95.6	06/10/22 12:56	
Benzo(g,h,i)perylene	ug/kg	<43.7	146	06/10/22 12:56	
Benzo(k)fluoranthene	ug/kg	<40.0	133	06/10/22 12:56	
bis(2-Chloroethoxy)methane	ug/kg	<45.0	150	06/10/22 12:56	
bis(2-Chloroethyl) ether	ug/kg	<52.1	174	06/10/22 12:56	
bis(2-Ethylhexyl)phthalate	ug/kg	<27.8	92.5	06/10/22 12:56	
Butylbenzylphthalate	ug/kg	<26.8	89.2	06/10/22 12:56	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

METHOD BLANK: 2406319 Matrix: Solid
Associated Lab Samples: 40246079001, 40246079002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Carbazole	ug/kg	<26.1	87.1	06/10/22 12:56	
Chrysene	ug/kg	<25.0	83.2	06/10/22 12:56	
Di-n-butylphthalate	ug/kg	<24.9	83.2	06/10/22 12:56	
Di-n-octylphthalate	ug/kg	<37.5	125	06/10/22 12:56	
Dibenz(a,h)anthracene	ug/kg	<45.3	151	06/10/22 12:56	
Dibenzofuran	ug/kg	<20.2	67.4	06/10/22 12:56	
Diethylphthalate	ug/kg	<27.7	92.3	06/10/22 12:56	
Dimethylphthalate	ug/kg	<21.7	72.4	06/10/22 12:56	
Fluoranthene	ug/kg	<23.6	78.7	06/10/22 12:56	
Fluorene	ug/kg	<19.5	65.0	06/10/22 12:56	
Hexachloro-1,3-butadiene	ug/kg	<42.5	142	06/10/22 12:56	
Hexachlorobenzene	ug/kg	<28.1	93.6	06/10/22 12:56	
Hexachlorocyclopentadiene	ug/kg	<39.5	132	06/10/22 12:56	
Hexachloroethane	ug/kg	<26.7	89.0	06/10/22 12:56	
Indeno(1,2,3-cd)pyrene	ug/kg	<36.1	120	06/10/22 12:56	
Isophorone	ug/kg	<25.7	85.5	06/10/22 12:56	
N-Nitroso-di-n-propylamine	ug/kg	<26.5	88.2	06/10/22 12:56	
N-Nitrosodiphenylamine	ug/kg	<226	755	06/10/22 12:56	
Naphthalene	ug/kg	<58.4	195	06/10/22 12:56	
Nitrobenzene	ug/kg	<33.8	113	06/10/22 12:56	
Pentachlorophenol	ug/kg	<36.8	123	06/10/22 12:56	
Phenanthrene	ug/kg	<21.4	71.4	06/10/22 12:56	
Phenol	ug/kg	<39.6	132	06/10/22 12:56	
Pyrene	ug/kg	<37.0	123	06/10/22 12:56	
2,4,6-Tribromophenol (S)	%	100	10-144	06/10/22 12:56	
2-Fluorobiphenyl (S)	%	77	12-118	06/10/22 12:56	
2-Fluorophenol (S)	%	66	10-130	06/10/22 12:56	
Nitrobenzene-d5 (S)	%	77	10-125	06/10/22 12:56	
Phenol-d6 (S)	%	67	10-125	06/10/22 12:56	
Terphenyl-d14 (S)	%	93	10-124	06/10/22 12:56	

LABORATORY CONTROL SAMPLE: 2406320

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/kg	1670	1610	97	70-130	
1,2-Dichlorobenzene	ug/kg	1670	1360	82	66-130	
1,3-Dichlorobenzene	ug/kg	1670	1320	79	66-130	
1,4-Dichlorobenzene	ug/kg	1670	1360	82	64-130	
2,2'-Oxybis(1-chloropropane)	ug/kg	1670	1370	82	65-130	
2,4,5-Trichlorophenol	ug/kg	1670	1820	109	70-125	
2,4,6-Trichlorophenol	ug/kg	1670	1700	102	70-124	
2,4-Dichlorophenol	ug/kg	1670	1720	103	70-121	
2,4-Dimethylphenol	ug/kg	1670	1630	98	70-130	
2,4-Dinitrophenol	ug/kg	1670	1440	86	26-103	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

LABORATORY CONTROL SAMPLE: 2406320

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4-Dinitrotoluene	ug/kg	1670	1830	110	70-130	
2,6-Dinitrotoluene	ug/kg	1670	1850	111	70-130	
2-Chloronaphthalene	ug/kg	1670	1640	99	70-130	
2-Chlorophenol	ug/kg	1670	1500	90	67-130	
2-Methylnaphthalene	ug/kg	1670	1660	99	70-130	
2-Methylphenol(o-Cresol)	ug/kg	1670	1580	95	69-130	
2-Nitroaniline	ug/kg	1670	1690	101	70-124	
2-Nitrophenol	ug/kg	1670	1860	111	70-130	
3&4-Methylphenol(m&p Cresol)	ug/kg	1670	1550	93	70-130	
3,3'-Dichlorobenzidine	ug/kg	1670	1480	89	48-112	
3-Nitroaniline	ug/kg	1670	1470	88	57-121	
4,6-Dinitro-2-methylphenol	ug/kg	1670	1580	95	59-115	
4-Bromophenylphenyl ether	ug/kg	1670	1820	109	70-130	
4-Chloro-3-methylphenol	ug/kg	1670	1700	102	70-130	
4-Chloroaniline	ug/kg	1670	1220	73	45-130	2q
4-Chlorophenylphenyl ether	ug/kg	1670	1800	108	70-130	
4-Nitroaniline	ug/kg	1670	1570	94	62-127	
4-Nitrophenol	ug/kg	1670	1510	90	50-126	
Acenaphthene	ug/kg	1670	1570	94	70-130	
Acenaphthylene	ug/kg	1670	1670	101	70-130	
Anthracene	ug/kg	1670	1600	96	70-130	
Benzo(a)anthracene	ug/kg	1670	1720	103	70-130	
Benzo(a)pyrene	ug/kg	1670	1580	95	70-130	
Benzo(b)fluoranthene	ug/kg	1670	1550	93	70-130	
Benzo(g,h,i)perylene	ug/kg	1670	1570	94	65-130	
Benzo(k)fluoranthene	ug/kg	1670	1560	93	70-130	
bis(2-Chloroethoxy)methane	ug/kg	1670	1590	96	70-130	
bis(2-Chloroethyl) ether	ug/kg	1670	1340	80	68-130	
bis(2-Ethylhexyl)phthalate	ug/kg	1670	1780	107	70-130	
Butylbenzylphthalate	ug/kg	1670	1830	110	70-130	
Carbazole	ug/kg	1670	1630	98	70-130	
Chrysene	ug/kg	1670	1750	105	70-130	
Di-n-butylphthalate	ug/kg	1670	1740	104	70-130	
Di-n-octylphthalate	ug/kg	1670	1800	108	67-134	
Dibenz(a,h)anthracene	ug/kg	1670	1670	100	68-130	
Dibenzofuran	ug/kg	1670	1690	101	70-130	
Diethylphthalate	ug/kg	1670	1660	99	70-130	
Dimethylphthalate	ug/kg	1670	1700	102	70-130	
Fluoranthene	ug/kg	1670	1700	102	70-130	
Fluorene	ug/kg	1670	1720	103	70-130	
Hexachloro-1,3-butadiene	ug/kg	1670	1690	101	67-130	
Hexachlorobenzene	ug/kg	1670	1670	100	70-130	
Hexachlorocyclopentadiene	ug/kg	1670	1490	90	54-114	
Hexachloroethane	ug/kg	1670	1380	83	64-130	
Indeno(1,2,3-cd)pyrene	ug/kg	1670	1570	94	63-130	
Isophorone	ug/kg	1670	1690	101	70-130	
N-Nitroso-di-n-propylamine	ug/kg	1670	1480	89	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

LABORATORY CONTROL SAMPLE: 2406320

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
N-Nitrosodiphenylamine	ug/kg	1670	1670	100	70-130	
Naphthalene	ug/kg	1670	1560	94	70-130	
Nitrobenzene	ug/kg	1670	1560	94	70-130	
Pentachlorophenol	ug/kg	1670	1460	87	47-108	
Phenanthrene	ug/kg	1670	1610	96	70-130	
Phenol	ug/kg	1670	1450	87	67-130	
Pyrene	ug/kg	1670	1610	97	70-130	
2,4,6-Tribromophenol (S)	%			117	10-144	
2-Fluorobiphenyl (S)	%			97	12-118	
2-Fluorophenol (S)	%			81	10-130	
Nitrobenzene-d5 (S)	%			93	10-125	
Phenol-d6 (S)	%			82	10-125	
Terphenyl-d14 (S)	%			104	10-124	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2406321 2406322

Parameter	Units	40246079002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2,4-Trichlorobenzene	ug/kg	<58.0	2050	2050	1720	1640	84	80	45-130	5	28	
1,2-Dichlorobenzene	ug/kg	<161	2050	2050	1630	1550	80	76	45-130	5	29	
1,3-Dichlorobenzene	ug/kg	<71.0	2050	2050	1490	1500	73	74	42-130	1	30	
1,4-Dichlorobenzene	ug/kg	<71.5	2050	2050	1620	1500	79	73	42-130	8	32	
2,2'-Oxybis(1-chloropropane)	ug/kg	<132	2050	2050	1460	1470	72	72	44-130	0	26	
2,4,5-Trichlorophenol	ug/kg	<90.6	2050	2050	1750	1630	86	80	11-125	7	30	
2,4,6-Trichlorophenol	ug/kg	<78.2	2050	2050	1620	1680	79	82	16-124	4	31	
2,4-Dichlorophenol	ug/kg	<137	2050	2050	1480	1550	72	76	19-121	5	29	
2,4-Dimethylphenol	ug/kg	<101	2050	2050	1550	1560	76	76	29-130	1	32	
2,4-Dinitrophenol	ug/kg	<156	2050	2050	713J	751J	35	37	10-103		50	
2,4-Dinitrotoluene	ug/kg	<73.4	2050	2050	1580	1580	77	77	38-130	1	27	
2,6-Dinitrotoluene	ug/kg	<97.4	2050	2050	1990	1870	97	92	41-130	6	28	
2-Chloronaphthalene	ug/kg	<65.9	2050	2050	1750	1670	86	82	44-130	5	24	
2-Chlorophenol	ug/kg	<128	2050	2050	1500	1630	73	80	33-130	8	30	
2-Methylnaphthalene	ug/kg	<133	2050	2050	1790	1610	87	79	46-130	11	23	
2-Methylphenol(o-Cresol)	ug/kg	<93.2	2050	2050	1570	1570	77	77	30-130	0	30	
2-Nitroaniline	ug/kg	<146	2050	2050	1670	1620	81	79	27-124	3	25	
2-Nitrophenol	ug/kg	<162	2050	2050	1880	1640	92	80	10-130	13	27	
3&4-Methylphenol(m&p Cresol)	ug/kg	<94.0	2050	2050	1530	1550	75	76	28-130	1	33	
3,3'-Dichlorobenzidine	ug/kg	<139	2050	2050	1580	1650	77	80	10-112	4	43	
3-Nitroaniline	ug/kg	<87.2	2050	2050	1470	1540	72	75	10-121	4	33	
4,6-Dinitro-2-methylphenol	ug/kg	<158	2050	2050	1340	1470	66	72	10-115	9	50	
4-Bromophenylphenyl ether	ug/kg	<107	2050	2050	1820	1750	89	86	40-130	4	25	
4-Chloro-3-methylphenol	ug/kg	<160	2050	2050	1530	1590	75	78	30-130	4	29	
4-Chloroaniline	ug/kg	<84.3	2050	2050	1230	1220	60	60	16-130	1	33	2q
4-Chlorophenylphenyl ether	ug/kg	<95.5	2050	2050	1670	1710	82	84	46-130	2	24	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2406321 2406322

Parameter	Units	40246079002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
4-Nitroaniline	ug/kg	<213	2050	2050	1340	1380	65	68	10-127	3	40	
4-Nitrophenol	ug/kg	<129	2050	2050	1010	991	50	48	10-128	2	50	
Acenaphthene	ug/kg	<182	2050	2050	1590	1640	78	80	47-130	3	21	
Acenaphthylene	ug/kg	<183	2050	2050	1600	1620	78	79	49-130	2	22	
Anthracene	ug/kg	<82.0	2050	2050	1610	1540	79	75	46-130	4	27	
Benzo(a)anthracene	ug/kg	<79.4	2050	2050	1700	1720	83	84	45-130	1	24	
Benzo(a)pyrene	ug/kg	<77.2	2050	2050	1610	1530	77	73	48-130	5	27	
Benzo(b)fluoranthene	ug/kg	<88.1	2050	2050	1430	1550	68	74	41-130	8	31	
Benzo(g,h,i)perylene	ug/kg	<134	2050	2050	1580	1720	77	84	37-130	9	31	
Benzo(k)fluoranthene	ug/kg	<123	2050	2050	1460	1390	71	68	46-130	5	27	
bis(2-Chloroethoxy)methane	ug/kg	<138	2050	2050	1590	1510	78	74	38-130	5	26	
bis(2-Chloroethyl) ether	ug/kg	<160	2050	2050	1430	1400	70	69	42-130	2	29	
bis(2-Ethylhexyl)phthalate	ug/kg	869	2050	2050	2390	2340	74	72	39-130	2	27	
Butylbenzylphthalate	ug/kg	<82.2	2050	2050	1730	1820	85	89	39-130	5	27	
Carbazole	ug/kg	<80.3	2050	2050	1670	1590	81	78	44-130	5	24	
Chrysene	ug/kg	<76.7	2050	2050	1620	1580	79	77	44-130	3	25	
Di-n-butylphthalate	ug/kg	<76.7	2050	2050	1800	1610	88	79	45-130	11	26	
Di-n-octylphthalate	ug/kg	<115	2050	2050	2170	2190	106	107	40-134	1	27	
Dibenz(a,h)anthracene	ug/kg	<139	2050	2050	1650	1600	81	78	41-130	3	33	
Dibenzofuran	ug/kg	<62.1	2050	2050	1790	1670	87	81	47-130	7	23	
Diethylphthalate	ug/kg	<85.0	2050	2050	1700	1700	83	83	46-130	0	24	
Dimethylphthalate	ug/kg	<66.7	2050	2050	1690	1650	83	81	47-130	2	24	
Fluoranthene	ug/kg	<72.6	2050	2050	1720	1720	84	84	50-130	0	27	
Fluorene	ug/kg	<59.9	2050	2050	1680	1730	82	85	48-130	3	25	
Hexachloro-1,3-butadiene	ug/kg	<131	2050	2050	2120	1810	104	88	42-130	16	27	
Hexachlorobenzene	ug/kg	<86.3	2050	2050	1900	1670	93	82	51-130	13	24	
Hexachlorocyclopentadiene	ug/kg	<121	2050	2050	1020	935	50	46	10-114	9	50	
Hexachloroethane	ug/kg	<82.1	2050	2050	1440	1530	70	75	33-130	6	35	
Indeno(1,2,3-cd)pyrene	ug/kg	<111	2050	2050	1700	1610	81	77	34-130	5	38	
Isophorone	ug/kg	<78.8	2050	2050	1670	1520	81	74	45-130	9	28	
N-Nitroso-di-n-propylamine	ug/kg	<81.3	2050	2050	1460	1430	71	70	47-130	2	27	
N-Nitrosodiphenylamine	ug/kg	<696	2050	2050	1670J	1540J	82	75	42-130		25	
Naphthalene	ug/kg	<179	2050	2050	1710	1570	84	77	48-130	8	24	
Nitrobenzene	ug/kg	<104	2050	2050	1630	1490	80	73	42-130	9	25	
Pentachlorophenol	ug/kg	<113	2050	2050	963	902	47	44	10-108	7	50	
Phenanthrene	ug/kg	<65.8	2050	2050	1700	1540	83	75	50-130	10	27	
Phenol	ug/kg	<122	2050	2050	1540	1510	75	74	37-130	2	30	D3
Pyrene	ug/kg	<114	2050	2050	1650	1560	81	76	43-130	6	29	
2,4,6-Tribromophenol (S)	%						82	92	10-144			
2-Fluorobiphenyl (S)	%						79	77	12-118			
2-Fluorophenol (S)	%						75	68	10-130			
Nitrobenzene-d5 (S)	%						80	75	10-125			
Phenol-d6 (S)	%						69	70	10-125			
Terphenyl-d14 (S)	%						78	74	10-124			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

QC Batch: 418450
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40246079001, 40246079002

SAMPLE DUPLICATE: 2409871

Parameter	Units	40246151003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	17.8	18.0	1	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

DEFINITIONS

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

ND - Not Detected at or above LOD.

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

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

1q	Analyte recovery in the continuing calibration verification (CCV) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
2q	This analyte's recovery was below secondary source verification limits. The results may be biased low.
CC	The continuing calibration for this compound is outside of method control limits. The result is estimated.
D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results may be biased high.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

Pace Analytical Services, LLC
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60685247 PM 8 CRANE PAD
Pace Project No.: 40246079

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40246079001	**B-5/B-3 COMP**	EPA 3541	417814	EPA 8082A	417815
40246079002	**B-11/B-2/B-4 COMP**	EPA 3541	417814	EPA 8082A	417815
40246079001	**B-5/B-3 COMP**	EPA 3050B	417706	EPA 6010D	417779
40246079002	**B-11/B-2/B-4 COMP**	EPA 3050B	417706	EPA 6010D	417779
40246079001	**B-5/B-3 COMP**	EPA 7471	417872	EPA 7471	418130
40246079002	**B-11/B-2/B-4 COMP**	EPA 7471	417872	EPA 7471	418130
40246079001	**B-5/B-3 COMP**	EPA 3546	417840	EPA 8270E	417899
40246079002	**B-11/B-2/B-4 COMP**	EPA 3546	417840	EPA 8270E	417899
40246079001	**B-5/B-3 COMP**	EPA 5035/5030B	417884	EPA 8260	417887
40246079002	**B-11/B-2/B-4 COMP**	EPA 5035/5030B	417884	EPA 8260	417887
40246079001	**B-5/B-3 COMP**	ASTM D2974-87	418450		
40246079002	**B-11/B-2/B-4 COMP**	ASTM D2974-87	418450		

Pace Analytical®

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: L1526079

ALL SHADED AREAS are for LAB USE ONLY

Company: AECOM
Address: 2985 S Ridge RD Green Bay
Billing Information: Accounts Payable
Report To: Jeremy Thomas
Email To: Jeremy.Thomas@aecom.com
Copy To:
Site Collection Info/Address: 1919 S Broadway St
Customer Project Name/Number: PMB Crane Pad 60685247
State: WI County/City: Brown/Green Bay Time Zone Collected: [ ] PT [ ] MT [X] CT [ ] ET
Phone: 262-278-9823
Email:
Site/Facility ID #:
Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Chris Lutzen
Purchase Order #:
Quote #:
DW PWS ID #:
DW Location Code:
Collected By (signature): [signature]
Turnaround Date Required:
Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: ______ [ ] Hold: ______
Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply)
Field Filtered (if applicable): [ ] Yes [ ] No
Analysis: ______

Container Preservative Type **: 6 U U U

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other ______

Lab Project Manager:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	VOCs 8260	PCB/SVOC	Metals/Dry weight	PFAS by 537	Lab Sample # / Comments
B-5/B-3 Comp	SL	Comp	6/6/22	215				6	3	1	1	1	001
B-1/B-2/B-4 Comp	SL	Comp	6/6/22	300				6	3	1	1	1	002

Lab Profile/Line:

```
Lab Sample Receipt Checklist:
Custody Seals Present/Intact  Y N NA
Custody Signatures Present    Y N NA
Collector Signature Present   Y N NA
Bottles Intact                Y N NA
Correct Bottles               Y N NA
Sufficient Volume             Y N NA
Samples Received on Ice       Y N NA
VOA - Headspace Acceptable    Y N NA
USDA Regulated Soils          Y N NA
Samples in Holding Time       Y N NA
Residual Chlorine Present     Y N NA
Cl Strips: ________
Sample pH Acceptable          Y N NA
pH Strips: ________
Sulfide Present               Y N NA
Lead Acetate Strips: ________

LAB USE ONLY:
Lab Sample # / Comments:
```

See CoR 6/7/22

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None (circled: 1)
Packing Material Used:
Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A
Lab Tracking #: 2781099
Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: 116
Cooler 1 Temp Upon Receipt: 5.5 oC
Cooler 1 Therm Corr. Factor: 5.6 oC
Cooler 1 Corrected Temp: ______ oC
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	MTJL LAB USE ONLY
Chris Lutzen / AECOM [signature]	6/7/22 1542	[signature] Pace	6/7/22 1542	Table #: Acctnum:
				Template: Prelogin:
				PM: PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 1 of: 1

Sample Preservation Receipt Form

Client Name: AECOM Project # 60246079

All containers needing preservation have been checked and noted below: ☐Yes ☐No ☒N/A

Lab Lot# of pH paper: Lab Std #ID of preservation (if pH adjusted):

Initial when completed: Date/ Time:

Pace Lab #	Glass: AG1U	BG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	Plastic: BP1U	BP3U	BP3B	BP3N	BP3S	Vials: VG9A	DG9T	VG9U	VG9H	VG9M	VG9D	Jars: JGFU	JG9U	WGFU	WPFU	General: SP5T	ZPLC	GN	VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
001										/										/													2.5 / 5 / 10
002										/								3.3		/			/										2.5 / 5 / 10
003																																	2.5 / 5 / 10
004																																	2.5 / 5 / 10
005																																	2.5 / 5 / 10
006																																	2.5 / 5 / 10
007																																	2.5 / 5 / 10
008																																	2.5 / 5 / 10
009																																	2.5 / 5 / 10
010																																	2.5 / 5 / 10
011																																	2.5 / 5 / 10
012																																	2.5 / 5 / 10
013																																	2.5 / 5 / 10
014																																	2.5 / 5 / 10
015																																	2.5 / 5 / 10
016																																	2.5 / 5 / 10
017																																	2.5 / 5 / 10
018																																	2.5 / 5 / 10
019																																	2.5 / 5 / 10
020																																	2.5 / 5 / 10

6/17/22 AW

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: _____ Headspace in VOA Vials (>6mm) : ☐Yes ☐No ☒N/A *if yes look in headspace column

AG1U	1 liter amber glass
BG1U	1 liter clear glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG4U	120 mL amber glass unpres
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	250 mL clear glass unpres

BP1U	1 liter plastic unpres
BP3U	250 mL plastic unpres
BP3B	250 mL plastic NaOH
BP3N	250 mL plastic HNO3
BP3S	250 mL plastic H2SO4

VG9A	40 mL clear ascorbic
DG9T	40 mL amber Na Thio
VG9U	40 mL clear vial unpres
VG9H	40 mL clear vial HCL
VG9M	40 mL clear vial MeOH
VG9D	40 mL clear vial DI

JGFU	4 oz amber jar unpres
JG9U	9 oz amber jar unpres
WGFU	4 oz clear jar unpres
WPFU	4 oz plastic jar unpres
SP5T	120 mL plastic Na Thiosulfate
ZPLC	ziploc bag
GN	

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO# : 40246079

40246079

Client Name: AECOM

Courier: ☐ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco
☒ Client ☐ Pace Other:

Tracking #: —

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

Custody Seal on Samples Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

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

Thermometer Used SR - 116 **Type of Ice:** (Wet) Blue Dry None ☒ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: 5.5 /Corr: 5.6

Temp Blank Present: ☒ yes ☐ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Person examining contents:
Date: 6/7/22 /Initials: AW

Labeled By Initials: MP

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Chain of Custody Present:	☒Yes ☐No ☐N/A	1. TCC 6/7/22 AW
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☒No	6.
Rush Turn Around Time Requested:	☐Yes ☒No	7.
Sufficient Volume: For Analysis: ☒Yes ☐No MS/MSD:	☐Yes ☒No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☒N/A	
Containers Intact:	☒Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☐Yes ☒No ☐N/A	12. 001: one vial no label, in bag with other 001 vials; 002: vials used water soluble ink, illegible, placed by elimination 6/7/22 AW
-Includes date/time/ID/Analysis Matrix: 5		
Trip Blank Present:	☐Yes ☒No ☐N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: Date/Time:

Comments/ Resolution:

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample login

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, LLC.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

Report Prepared for:

Christopher Hyska
PACE Wisconsin
1241 Bellevue Street
Green Bay WI 54302

REPORT OF LABORATORY ANALYSIS FOR PFAAs

Report Information:

Pace Project #: 10612096
Sample Receipt Date: 06/09/2022
Client Project #: 40246079 AECOM Oshkosh
Client Sub PO #: N/A
State Cert #: N/A

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PFAA Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Scott Unze, your Pace Project Manager.

This report has been reviewed by:

July 14, 2022

Scott Unze, Project Manager
(612) 607-6383
(612) 607-6444 (fax)
scott.unze@pacelabs.com

Report Prepared Date:
July 14, 2022

Report of Laboratory Analysis

DISCUSSION

This report presents the results from the analyses performed on two samples submitted by a representative of Pace Wisconsin. The samples were analyzed for thirty-three perfluorinated compounds using Wisconsin DNR guidance for PFAS. Reporting limits were set to MDL levels.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank was free of the target perfluorinated compounds at the reporting limits. This indicates that the sample processing procedures did not significantly contribute to the analyte content determined for the sample material.

A laboratory spike sample was also prepared with the sample batch using clean reference matrix that had been fortified with native standards. The recovery results were within the method limits. This spike indicates that extraction performed as expected. No usable matrix spike data is avilable with the batch, analysis was completed at client request.

Diminished extracted internal standard (EIS) recovery ("R" flagged) were present in samples, however, the use of the isotope dilution method generally precludes any adverse impact on those individual native compounds that have a directly associated standard.

Both samples have recoveries less than 1% for selected EIS. The results for these native compounds should be considered estimated.

The four injection internal standards (13C4 PFOA, 13C4 PFOS, 13C2_PFDA, and 13C2_PFHxA) pass for each analysis in the batch verifying that the instrument detector is working as expected.

Results that were below the calibration range were flagged "J".

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
		Mississippi	MN00064
		Missouri	10100
A2LA	2926.01	Montana	CERT0092
Alabama	40770	Nebraska	NE-OS-18-06
Alaska-DW	MN00064	Nevada	MN00064
Alaska-UST	17-009	New Hampshire	2081
Arizona	AZ0014	New Jersey	MN002
Arkansas - WW	88-0680	New York	11647
Arkansas-DW	MN00064	North Carolina-	27700
California	2929	North Carolina-	530
Colorado	MN00064	North Dakota	R-036
Connecticut	PH-0256	Ohio-DW	41244
Florida	E87605	Ohio-VAP (170	CL101
Georgia	959	Ohio-VAP (180	CL110
Hawaii	MN00064	Oklahoma	9507
Idaho	MN00064	Oregon- rimary	MN300001
Illinois	200011	Oregon-Second	MN200001
Indiana	C-MN-01	Pennsylvania	68-00563
Iowa	368	Puerto Rico	MN00064
Kansas	E-10167	South Carolina	74003
Kentucky-DW	90062	Tennessee	TN02818
Kentucky-WW	90062	Texas	T104704192
Louisiana-DEQ	AI-84596	Utah	MN00064
Louisiana-DW	MN00064	Vermont	VT-027053137
Maine	MN00064	Virginia	460163
Maryland	322	Washington	C486
Michigan	9909	West Virginia-D	382
Minnesota	027-053-137	West Virginia-D	9952C
Minnesota-Ag	via MN 027-053	Wisconsin	999407970
Minnesota-Petr	1240	Wyoming-UST	via A2LA 2926.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444
www.pacelabs.com

Appendix A

Sample Management

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Sample ID Cross Reference

Client Sample ID	Pace Sample ID	Date Received	Sample Type
B-5/B-3 COMP	40246079001	06/09/2022	Solid
B-11/B-2/B-4 COMP	40246079002	06/09/2022	Solid

REPORT OF LABORATORY ANALYSIS

Internal Transfer Chain of Custody

Pace Analytical
www.pacelabs.com

[x] Samples Pre-Logged into eCOC.

State Of Origin: WI
Cert. Needed: [x] Yes [ ] No
Owner Received Date: 6/7/2022
Results Requested By: 6/21/2022

Workorder: 40246079 Workorder Name: PM 8 CRANE PAD 60685247

Report No.: 10612096_1036_DFR

Report To	Subcontract To
Christopher Hyska Pace Analytical Green Bay 2241 Bellevue Street Suite 9 Green Bay, WI 54302 Phone (920)469-2436	Pace Analytical Minnesota 1700 Elm Street SE Suite 200 Minneapolis, MN 55414 Phone (612)607-1700

WO# : 10612096

10612096

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	PFAS WIS ID 36S (WI 33)	LAB USE ONLY
1	B-5/B-3 COMP	PS	6/6/2022 14:15	40246079001	Solid	1	X	WI
2	B-11/B-2/B-4 COMP	PS	6/6/2022 15:00	40246079002	Solid	1	X	WI
3								
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	pace	6/8/22 16:00	[illegible]/PACE	06/09/22 9:20
2				
3				

Comments: WI 33 list

Cooler Temperature on Receipt 3.6 °C | Custody Seal (Y) or N | Received on Ice (Y) or N | Samples Intact (Y) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

DC#_Title: ENV-FRM-MIN4-0150 v05_Sample Condition Upon Receipt (SCUR)

Effective Date: 04/12/2022

Sample Condition Upon Receipt

Client Name: Pace Analytical Green Bay

Project #:

WO#: 10612096

PM: SCU **Due Date: 06/30/22**

CLIENT: PASI-WI

Courier: ☐Fed Ex ☐UPS ☐USPS ☐Client ☑Pace ☐SpeeDee ☐Commercial

See Exceptions ☐ENV-FRM-MIN4-0142

Tracking Number: _____

Custody Seal on Cooler/Box Present? ☑Yes ☐No Seals Intact? ☐Yes ☐No Biological Tissue Frozen? ☐Yes ☐No ☐N/A

Packing Material: ☐Bubble Wrap ☑Bubble Bags ☐None ☐Other: _____ Temp Blank? ☑Yes ☐No

Thermometer: ☐T1(0461) ☑T2(1336) ☐T3(0459) ☐T4(0254) ☐T5(0489) ☐T6(0235) ☐T7 (0042) ☐01339252/1710 ☐122639816 ☐140792808

Type of Ice: ☑Wet ☐Blue ☐None ☐Dry ☐Melted

Did Samples Originate in West Virginia? ☐Yes ☑No Were All Container Temps Taken? ☐Yes ☐No ☐N/A

Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: 3.6 °C

Average Corrected Temp (no temp blank only): _____ °C ☐See Exceptions ENV-FRM-MIN4-0142 ☐1 Container

Correction Factor: True Cooler Temp Corrected w/temp blank: 3.6 °C

USDA Regulated Soil: (☑N/A, water sample/Other: Solid) Date/Initials of Person Examining Contents: EN 06/09/22

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist ENV-FRM-MIN4-0154 and include with SCUR/COC paperwork.

Location (check one): ☐ Duluth ☑ Minneapolis ☐ Virginia

				COMMENTS:
Chain of Custody Present and Filled Out?	☑Yes	☐No		1.
Chain of Custody Relinquished?	☑Yes	☐No		2.
Sampler Name and/or Signature on COC?	☐Yes	☐No	☑N/A	3.
Samples Arrived within Hold Time?	☑Yes	☐No		4. If Fecal: ☐<8 hrs ☐>8hr, <24 hrs, ☐>24 hrs
Short Hold Time Analysis (<72 hr)?	☐Yes	☑No		5. ☐Fecal Coliform ☐HPC ☐Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome ☐Turbidity ☐Nitrate ☐Nitrite ☐Orthophos ☐Other
Rush Turn Around Time Requested?	☐Yes	☑No		6.
Sufficient Volume?	☐Yes	☑No		7.
Correct Containers Used? -Pace Containers Used?	☑Yes ☑Yes	☐No ☐No		8.
Containers Intact?	☑Yes	☐No		9.
~~Field Filtered Volume Received for Dissolved Tests?~~	☐Yes	☐No	☑N/A	10. ~~Is sediment visible in the dissolved container?~~ ☐Yes ☐No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☐Water ☐Soil ☐Oil ☑Other- Solid	☑Yes	☐No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐ ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☑N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☐Yes	☐No	☑N/A	☐ NaOH ☐ HNO_3 ☐ H_2SO_4 ☐Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐Yes	☐No	☑N/A	Positive for Res. Chlorine? ☐Yes ☐No **pH Paper Lot#** **See Exception** ☐ ENV-FRM-MIN4-0142
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Headspace in Methyl Mercury Container?	☐Yes	☐No	☑N/A	
Extra labels present on soil VOA or WIDRO containers?	☐Yes	☐No	☑N/A	13. **See Exception** ☐ ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)?	☐Yes	☐No	☑N/A	
Trip Blank Present?	☐Yes	☐No	☑N/A	14.
Trip Blank Custody Seals Present?	☐Yes	☐No	☑N/A	Pace Trip Blank Lot # (if purchased): _____

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

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Sara C. Murphy **Date:** 06/10/22

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

Labeled by: A-H (3)

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: 40246079

ALL SHADED AREAS are for LAB USE ONLY

Company: AECOM
Billing Information: Accounts Payable
Address: 2985 S Ridge RD Green Bay
Report To: Jeremy Thomas
Email To: Jeremy.Thomas@aecom.com
Copy To:
Site Collection Info/Address: 1919 S Broadway St
Customer Project Name/Number: PMB Crane Pad 60685247
State: WI County/City: Brown/Green Bay Time Zone Collected: [ ] PT [ ] MT [X] CT [ ] ET
Phone: 262-278-9323 Email:
Site/Facility ID #:
Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Chris Wizen
Purchase Order #: Quote #:
DW PWS ID #: DW Location Code:
Collected By (signature): [signature]
Turnaround Date Required:
Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:
Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply)
Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

Container Preservative Type **: 6, U, U, U

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Lab Project Manager:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected Date	Collected Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	VOCs 8260	PCB/SVOC	Metals/Dry weight	PFAS 6537	Lab Sample # / Comments
B-5/B-3 Comp	SL	Comp	6/6/22	215				6	3	1	1	1	001
B-1/B-2/B-4 Comp	SL	Comp	6/6/22	300				6	3	1	1	1	002

Lab Profile/Line:
Lab Sample Receipt Checklist:
Custody Seals Present/Intact Y N NA
Custody Signatures Present Y N NA
Collector Signature Present Y N NA
Bottles Intact Y N NA
Correct Bottles Y N NA
Sufficient Volume Y N NA
Samples Received on Ice Y N NA
VOA - Headspace Acceptable Y N NA
USDA Regulated Soils Y N NA
Samples in Holding Time Y N NA
Residual Chlorine Present Y N NA
Cl Strips:
Sample pH Acceptable Y N NA
pH Strips:
Sulfide Present Y N NA
Lead Acetate Strips:
LAB USE ONLY:
Lab Sample # / Comments:
(Section struck through: "See SR 6/7/22 MN")

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None (circled: None)
Packing Material Used:
Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A
Lab Tracking #: 2781099
Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: 116
Cooler 1 Temp Upon Receipt: 5.5 oC
Cooler 1 Therm Corr. Factor: 5.6 oC
Cooler 1 Corrected Temp: ____ oC
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	MTJL LAB USE ONLY
Chris Wizen / AECOM [signature]	6/7/22 1542	[signature] Pace	6/7/22 1542	Table #: Acctnum:
				Template: Prelogin:
				PM: PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO
Page: 1 of: 1

Sample Preservation Receipt Form

Client Name: AECOM Project # WO# 46079

All containers needing preservation have been checked and noted below: ☐Yes ☐No ☒N/A Initial when completed: Date/ Time:

Lab Lot# of pH paper: Lab Std #ID of preservation (if pH adjusted):

Pace Lab #	Glass								Plastic					Vials						Jars				General			VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
	AG1U	BG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	VG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC	GN							
001										1										1													2.5 / 5 / 10
002										1								1		1													
003																																	2.5 / 5 / 10
004																																	
005																																	2.5 / 5 / 10
006																																	
007																																	2.5 / 5 / 10
008																																	
009																																	2.5 / 5 / 10
010																																	
011																																	2.5 / 5 / 10
012																																	
013																																	2.5 / 5 / 10
014																																	
015																																	2.5 / 5 / 10
016																																	
017																																	2.5 / 5 / 10
018																																	
019																																	2.5 / 5 / 10
020																																	

6/7/22 AN

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: _____ Headspace in VOA Vials (>6mm): ☐Yes ☐No ☒N/A *If yes look in headspace column

AG1U	1 liter amber glass
BG1U	1 liter clear glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG4U	120 mL amber glass unpres
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	250 mL clear glass unpres

BP1U	1 liter plastic unpres
BP3U	250 mL plastic unpres
BP3B	250 mL plastic NaOH
BP3N	250 mL plastic HNO3
BP3S	250 mL plastic H2SO4

VG9A	40 mL clear ascorbic
DG9T	40 mL amber Na Thio
VG9U	40 mL clear vial unpres
VG9H	40 mL clear vial HCL
VG9M	40 mL clear vial MeOH
VG9D	40 mL clear vial DI

JGFU	4 oz amber jar unpres
JG9U	9 oz amber jar unpres
WGFU	4 oz clear jar unpres
WPFU	4 oz plastic jar unpres
SP5T	120 mL plastic Na Thiosulfate
ZPLC	ziploc bag
GN	

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO# : 40246079

40246079

Client Name: AECOM

Courier: ☐ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco
☒ Client ☐ Pace Other:

Tracking #: —

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

Custody Seal on Samples Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

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

Thermometer Used SR - 116 **Type of Ice:** (Wet) Blue Dry None ☒ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: 5.5 /Corr: 5.6

Person examining contents:
Date: 6/7/22 /Initials: CW

Temp Blank Present: ☒ yes ☐ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Labeled By Initials:

Chain of Custody Present:	☒Yes ☐No ☐N/A	1. TCC 6/7/22 CW
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☒No	6.
Rush Turn Around Time Requested:	☐Yes ☒No	7.
Sufficient Volume: For Analysis: ☒Yes ☐No MS/MSD:	☐Yes ☒No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☒N/A	
Containers Intact:	☒Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: S	☐Yes ☒No ☐N/A	12. 001: one vial no label, in bag with other 001 vials; 002: vials used water soluble ink, illegible, placed By elimination 6/7/22 CW
Trip Blank Present:	☐Yes ☒No ☐N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: Date/Time:

Comments/ Resolution:

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample login

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40246079001	B-5/B-3 COMP	SW3535	33368	PFAS-36	B220701B_01
40246079002	B-11/B-2/B-4 COMP	SW3535	33368	PFAS-36	B220701B_02

Pace Analytical Services, LLC
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Minneapolis, MN 55414

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Reporting Flags

A = Reporting Limit based on signal to noise (EDL)

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Isotope ratio out of specification

J = Estimated value

L = Suppressive interference, analyte may be biased low

Nn = Value obtained from additional analysis

P = PCDEInterference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = SeeDiscussion

REPORT OF LABORATORY ANALYSIS

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Appendix B

Sample Analysis Summary

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Sample Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	B-5/B-3 COMP	Extraction Date	06/30/2022 09:00
Lab Sample ID	40246079001	Total Amount Extracted	5.02g
Lab File ID	B220701B_027	Percent Moisture	20.0271%
Matrix	Solid	Ical ID	220629A02
Collected	06/06/2022 14:15	CCal File	B220701B_017
Received	06/09/2022 09:20	Ending CCal File	B220701B_028
		Blank File	B220701B_007

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	0.12	0.02	0.02	1	375-22-4		07/02/2022 06:49
PFPeA	ND	0.12	0.03	0.03	1	2706-90-3		07/02/2022 06:49
HFPO-DA	ND	0.12	0.03	0.03	1	13252-13-6		07/02/2022 06:49
PFBS	ND	0.11	0.02	0.02	1	375-73-5		07/02/2022 06:49
PFHxA	ND	0.12	0.03	0.03	1	307-24-4		07/02/2022 06:49
4:2 FTS	ND	0.12	0.04	0.04	1	757124-72-4		07/02/2022 06:49
PFPeS	ND	0.12	0.02	0.02	1	2706-91-4		07/02/2022 06:49
PFHpA	ND	0.12	0.02	0.02	1	375-85-9		07/02/2022 06:49
DONA	ND	0.12	0.04	0.04	1	919005-14-4		07/02/2022 06:49
PFHxS	0.096 J	0.11	0.02	0.02	1	355-46-4		07/02/2022 06:49
PFOA	0.029 J	0.12	0.02	0.02	1	335-67-1		07/02/2022 06:49
6:2 FTS	ND	0.12	0.04	0.04	1	27619-97-2		07/02/2022 06:49
PFHpS	ND	0.12	0.03	0.03	1	375-92-8		07/02/2022 06:49
PFNA	ND	0.12	0.03	0.03	1	375-95-1		07/02/2022 06:49
PFOSAm	ND	0.12	0.02	0.02	1	754-91-6		07/02/2022 06:49
PFOS	0.11 J	0.12	0.03	0.03	1	1763-23-1		07/02/2022 06:49
MeFOSA	ND	0.12	0.03	0.03	1	31506-32-8		07/02/2022 06:49
PFDA	ND	0.12	0.02	0.02	1	335-76-2		07/02/2022 06:49
EtFOSAm	ND	0.12	0.02	0.02	1	4151-50-2		07/02/2022 06:49
8:2 FTS	ND	0.12	0.03	0.03	1	39108-34-4		07/02/2022 06:49
9-Cl-PF3ON	ND	0.12	0.01	0.01	1	756426-58-1		07/02/2022 06:49
PFNS	ND	0.12	0.02	0.02	1	68259-12-1		07/02/2022 06:49
PFUnDA	ND	0.12	0.03	0.03	1	2058-94-8		07/02/2022 06:49
NMeFOSAA	ND	0.12	0.02	0.02	1	2355-31-9		07/02/2022 06:49
NEtFOSAA	ND	0.12	0.03	0.03	1	2991-50-6		07/02/2022 06:49
PFDS	ND	0.12	0.03	0.03	1	335-77-3		07/02/2022 06:49
PFDOA	ND	0.12	0.03	0.03	1	307-55-1		07/02/2022 06:49
MeFOSE	ND	0.12	0.02	0.02	1	24448-09-7		07/02/2022 06:49
EtFOSE	ND	0.12	0.03	0.03	1	1691-99-2		07/02/2022 06:49
11-Cl-PF3OUdS	ND	0.12	0.02	0.02	1	763051-92-9		07/02/2022 06:49
PFTrDA	ND	0.12	0.02	0.02	1	72629-94-8		07/02/2022 06:49
PFDoS	ND	0.12	0.03	0.03	1	79780-39-5		07/02/2022 06:49
PFTDA	ND	0.12	0.04	0.04	1	376-06-7		07/02/2022 06:49

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	B-5/B-3 COMP	Extraction Date	06/30/2022 09:00
Lab Sample ID	40246079001	Total Amount Extracted	5.02g
Lab File ID	B220701B_027	Percent Moisture	20.0271%
Matrix	Solid	Ical ID	220629A02
Collected	06/06/2022 14:15	CCal File	B220701B_017
Received	06/09/2022 09:20	Ending CCal File	B220701B_028
		Blank File	B220701B_007

Injection Internal Standards

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2_PFHxA	1.2	1.2	95	50-150		07/02/2022 06:49
13C4_PFOA	1.2	1.1	85	50-150		07/02/2022 06:49
13C2_PFDA	1.2	1.3	104	50-150		07/02/2022 06:49
13C4_PFOS	1.2	1.2	102	50-150		07/02/2022 06:49

Extracted Internal Standards

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4_PFBA	1.2	0.99	79	25-150		07/02/2022 06:49
13C5_PFPeA	1.2	1.1	85	25-150		07/02/2022 06:49
13C3_PFBS	1.2	0.95	82	25-150		07/02/2022 06:49
13C2_4:2FTS	1.2	1.0	88	25-150		07/02/2022 06:49
13C5_PFHxA	1.2	1.0	84	25-150		07/02/2022 06:49
13C4_PFHpA	1.2	1.0	81	25-150		07/02/2022 06:49
13C3_PFHxS	1.2	1.0	87	25-150		07/02/2022 06:49
13C2_6:2FTS	1.2	1.0	86	25-150		07/02/2022 06:49
13C8_PFOA	1.2	1.0	83	25-150		07/02/2022 06:49
13C9_PFNA	1.2	1.0	82	25-150		07/02/2022 06:49
13C8_PFOS	1.2	1.1	95	25-150		07/02/2022 06:49
13C2_8:2FTS	1.2	1.0	85	25-150		07/02/2022 06:49
13C6_PFDA	1.2	1.3	101	25-150		07/02/2022 06:49
d3-MeFOSAA	1.2	1.2	93	25-150		07/02/2022 06:49
13C8_PFOSA	1.2	0.48	39	25-150		07/02/2022 06:49
d5-EtFOSAA	1.2	0.97	78	25-150		07/02/2022 06:49
13C7_PFUdA	1.2	1.1	89	25-150		07/02/2022 06:49
13C2_PFDoA	1.2	1.2	95	25-150		07/02/2022 06:49
13C2_PFTeDA	1.2	1.1	85	25-150		07/02/2022 06:49
13C3_HFPO-DA	1.2	1.0	84	25-150		07/02/2022 06:49
d7-N-MeFOSE	1.2	0.19	15	10-150		07/02/2022 06:49
d9-N-EtFOSE	1.2	0.22	18	10-150		07/02/2022 06:49
d3-N-MeFOSA	1.2	0.0062	0	10-150	R	07/02/2022 06:49
d5-N-EtFOSA	1.2	0.0073	1	10-150	R	07/02/2022 06:49

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	B-5/B-3 COMP	Extraction Date	06/30/2022 09:00
Lab Sample ID	40246079001	Total Amount Extracted	5.02g
Lab File ID	B220701B_027	Percent Moisture	20.0271%
Matrix	Solid	Ical ID	220629A02
Collected	06/06/2022 14:15	CCal File	B220701B_017
Received	06/09/2022 09:20	Ending CCal File	B220701B_028
		Blank File	B220701B_007

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2_PFHxA	N/A	N/A	5.78	5.81	1560		07/02/2022 06:49
13C4_PFOA	N/A	N/A	7.15	7.17	2354		07/02/2022 06:49
13C2_PFDA	N/A	N/A	8.51	8.54	2636		07/02/2022 06:49
13C4_PFOS	N/A	N/A	8.99	9.01	965		07/02/2022 06:49

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4_PFBA	N/A	N/A	4.31	4.32	2450		07/02/2022 06:49
13C5_PFPeA	N/A	N/A	5.10	5.12	1767		07/02/2022 06:49
13C3_PFBS	N/A	N/A	6.04	6.06	958		07/02/2022 06:49
13C2_4:2FTS	N/A	N/A	5.50	5.52	453		07/02/2022 06:49
13C5_PFHxA	N/A	N/A	5.78	5.81	1679		07/02/2022 06:49
13C4_PFHpA	N/A	N/A	6.46	6.49	1500		07/02/2022 06:49
13C3_PFHxS	N/A	N/A	7.58	7.59	1086		07/02/2022 06:49
13C2_6:2FTS	N/A	N/A	6.80	6.82	629		07/02/2022 06:49
13C8_PFOA	N/A	N/A	7.15	7.17	2017		07/02/2022 06:49
13C9_PFNA	N/A	N/A	7.83	7.85	2286		07/02/2022 06:49
13C8_PFOS	N/A	N/A	9.00	9.01	972		07/02/2022 06:49
13C2_8:2FTS	N/A	N/A	8.11	8.15	982		07/02/2022 06:49
13C6_PFDA	N/A	N/A	8.51	8.54	1512		07/02/2022 06:49
d3-MeFOSAA	N/A	N/A	8.37	8.40	1515		07/02/2022 06:49
13C8_PFOSA	N/A	N/A	10.79	10.77	2721		07/02/2022 06:49
d5-EtFOSAA	N/A	N/A	8.68	8.71	1095		07/02/2022 06:49
13C7_PFUdA	N/A	N/A	9.19	9.22	2895		07/02/2022 06:49
13C2_PFDoA	N/A	N/A	9.88	9.90	1245		07/02/2022 06:49
13C2_PFTeDA	N/A	N/A	11.21	11.21	1374		07/02/2022 06:49
13C3_HFPO-DA	N/A	N/A	6.06	6.09	1431		07/02/2022 06:49
d7-N-MeFOSE	N/A	N/A	12.53	12.50	295		07/02/2022 06:49
d9-N-EtFOSE	N/A	N/A	13.00	12.97	336		07/02/2022 06:49
d3-N-MeFOSA	N/A	N/A	12.75	12.70	79	R	07/02/2022 06:49
d5-N-EtFOSA	N/A	N/A	13.16	13.11	85	R	07/02/2022 06:49

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	B-5/B-3 COMP	Extraction Date	06/30/2022 09:00
Lab Sample ID	40246079001	Total Amount Extracted	5.02g
Lab File ID	B220701B_027	Percent Moisture	20.0271%
Matrix	Solid	Ical ID	220629A02
Collected	06/06/2022 14:15	CCal File	B220701B_017
Received	06/09/2022 09:20	Ending CCal File	B220701B_028
		Blank File	B220701B_007

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	0.00	4.33	ND		07/02/2022 06:49
PFPeA	N/A	N/A	5.11	5.12	ND		07/02/2022 06:49
HFPO-DA	0.00	0.27	0.00	6.10	ND		07/02/2022 06:49
PFBS	0.26	0.42	6.05	6.07	ND		07/02/2022 06:49
PFHxA	0.00	0.08	0.00	5.82	ND		07/02/2022 06:49
4:2 FTS	0.00	0.90	0.00	5.53	ND		07/02/2022 06:49
PFPeS	0.33	0.43	6.84	6.86	ND		07/02/2022 06:49
PFHpA	0.30	0.30	6.47	6.50	ND		07/02/2022 06:49
DONA	0.00	0.57	0.00	6.75	ND		07/02/2022 06:49
PFHxS	0.38	0.35	7.58	7.60	248	J	07/02/2022 06:49
PFOA	0.37	0.41	7.16	7.18	56	J	07/02/2022 06:49
6:2 FTS	0.75	1.00	6.80	6.82	ND		07/02/2022 06:49
PFHpS	0.62	0.41	8.30	8.32	ND		07/02/2022 06:49
PFNA	0.21	0.14	7.83	7.86	ND		07/02/2022 06:49
PFOSAm	N/A	N/A	10.80	10.78	ND		07/02/2022 06:49
PFOS	0.38	0.42	9.01	9.03	135	J	07/02/2022 06:49
MeFOSA	0.00	0.63	0.00	12.73	ND		07/02/2022 06:49
PFDA	0.00	0.18	0.00	8.58	ND		07/02/2022 06:49
EtFOSAm	0.00	0.65	0.00	13.10	ND		07/02/2022 06:49
8:2 FTS	0.00	0.93	0.00	8.15	ND		07/02/2022 06:49
9-Cl-PF3ON	0.00	0.07	0.00	9.52	ND		07/02/2022 06:49
PFNS	0.00	0.46	0.00	9.74	ND		07/02/2022 06:49
PFUnDA	0.00	0.14	0.00	9.22	ND		07/02/2022 06:49
NMeFOSAA	0.00	0.90	0.00	8.41	ND		07/02/2022 06:49
NEtFOSAA	0.00	0.69	0.00	8.72	ND		07/02/2022 06:49
PFDS	0.00	0.35	0.00	10.41	ND		07/02/2022 06:49
PFDOA	0.00	0.17	0.00	9.92	ND		07/02/2022 06:49
MeFOSE	N/A	N/A	0.00	12.52	ND		07/02/2022 06:49
EtFOSE	0.00	0.00	0.00	12.99	ND		07/02/2022 06:49
11-Cl-PF3OUdS	0.00	0.02	0.00	10.87	ND		07/02/2022 06:49
PFTrDA	0.00	0.14	0.00	10.59	ND		07/02/2022 06:49
PFDoS	0.00	0.46	0.00	11.61	ND		07/02/2022 06:49
PFTDA	0.00	0.26	0.00	11.21	ND		07/02/2022 06:49

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	B-11/B-2/B-4 COMP	Extraction Date	06/30/2022 09:00
Lab Sample ID	40246079002	Total Amount Extracted	5.16g
Lab File ID	B220701B_029	Percent Moisture	18.5865%
Matrix	Solid	Ical ID	220629A02
Collected	06/06/2022 15:00	CCal File	B220701B_028
Received	06/09/2022 09:20	Ending CCal File	B220701B_032
		Blank File	B220701B_007

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	0.12	0.02	0.02	1	375-22-4		07/02/2022 07:29
PFPeA	ND	0.12	0.03	0.03	1	2706-90-3		07/02/2022 07:29
HFPO-DA	ND	0.12	0.03	0.03	1	13252-13-6		07/02/2022 07:29
PFBS	ND	0.11	0.02	0.02	1	375-73-5		07/02/2022 07:29
PFHxA	ND	0.12	0.03	0.03	1	307-24-4		07/02/2022 07:29
4:2 FTS	ND	0.11	0.03	0.03	1	757124-72-4		07/02/2022 07:29
PFPeS	ND	0.11	0.02	0.02	1	2706-91-4		07/02/2022 07:29
PFHpA	ND	0.12	0.02	0.02	1	375-85-9		07/02/2022 07:29
DONA	ND	0.11	0.04	0.04	1	919005-14-4		07/02/2022 07:29
PFHxS	0.28	0.11	0.02	0.02	1	355-46-4		07/02/2022 07:29
PFOA	0.036 J	0.12	0.02	0.02	1	335-67-1		07/02/2022 07:29
6:2 FTS	ND	0.11	0.03	0.03	1	27619-97-2		07/02/2022 07:29
PFHpS	ND	0.11	0.03	0.03	1	375-92-8		07/02/2022 07:29
PFNA	ND	0.12	0.03	0.03	1	375-95-1		07/02/2022 07:29
PFOSAm	ND	0.12	0.02	0.02	1	754-91-6		07/02/2022 07:29
PFOS	0.23	0.11	0.03	0.03	1	1763-23-1		07/02/2022 07:29
MeFOSA	ND	0.12	0.03	0.03	1	31506-32-8		07/02/2022 07:29
PFDA	ND	0.12	0.02	0.02	1	335-76-2		07/02/2022 07:29
EtFOSAm	ND	0.12	0.02	0.02	1	4151-50-2		07/02/2022 07:29
8:2 FTS	ND	0.11	0.03	0.03	1	39108-34-4		07/02/2022 07:29
9-Cl-PF3ON	ND	0.11	0.01	0.01	1	756426-58-1		07/02/2022 07:29
PFNS	ND	0.11	0.02	0.02	1	68259-12-1		07/02/2022 07:29
PFUnDA	ND	0.12	0.03	0.03	1	2058-94-8		07/02/2022 07:29
NMeFOSAA	ND	0.12	0.02	0.02	1	2355-31-9		07/02/2022 07:29
NEtFOSAA	ND	0.12	0.02	0.02	1	2991-50-6		07/02/2022 07:29
PFDS	ND	0.11	0.03	0.03	1	335-77-3		07/02/2022 07:29
PFDOA	ND	0.12	0.03	0.03	1	307-55-1		07/02/2022 07:29
MeFOSE	ND	0.12	0.02	0.02	1	24448-09-7		07/02/2022 07:29
EtFOSE	ND	0.12	0.03	0.03	1	1691-99-2		07/02/2022 07:29
11-Cl-PF3OUdS	ND	0.11	0.01	0.01	1	763051-92-9		07/02/2022 07:29
PFTrDA	ND	0.12	0.02	0.02	1	72629-94-8		07/02/2022 07:29
PFDoS	ND	0.12	0.03	0.03	1	79780-39-5		07/02/2022 07:29
PFTDA	ND	0.12	0.03	0.03	1	376-06-7		07/02/2022 07:29

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	B-11/B-2/B-4 COMP	Extraction Date	06/30/2022 09:00
Lab Sample ID	40246079002	Total Amount Extracted	5.16g
Lab File ID	B220701B_029	Percent Moisture	18.5865%
Matrix	Solid	Ical ID	220629A02
Collected	06/06/2022 15:00	CCal File	B220701B_028
Received	06/09/2022 09:20	Ending CCal File	B220701B_032
		Blank File	B220701B_007

Injection Internal Standards

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2_PFHxA	1.2	1.0	88	50-150		07/02/2022 07:29
13C4_PFOA	1.2	1.1	95	50-150		07/02/2022 07:29
13C2_PFDA	1.2	1.1	94	50-150		07/02/2022 07:29
13C4_PFOS	1.1	1.1	98	50-150		07/02/2022 07:29

Extracted Internal Standards

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4_PFBA	1.2	0.99	83	25-150		07/02/2022 07:29
13C5_PFPeA	1.2	1.0	86	25-150		07/02/2022 07:29
13C3_PFBS	1.1	0.99	90	25-150		07/02/2022 07:29
13C2_4:2FTS	1.1	0.92	82	25-150		07/02/2022 07:29
13C5_PFHxA	1.2	1.1	90	25-150		07/02/2022 07:29
13C4_PFHpA	1.2	0.99	83	25-150		07/02/2022 07:29
13C3_PFHxS	1.1	1.00	89	25-150		07/02/2022 07:29
13C2_6:2FTS	1.1	0.98	86	25-150		07/02/2022 07:29
13C8_PFOA	1.2	0.99	84	25-150		07/02/2022 07:29
13C9_PFNA	1.2	0.99	83	25-150		07/02/2022 07:29
13C8_PFOS	1.1	1.0	92	25-150		07/02/2022 07:29
13C2_8:2FTS	1.1	0.98	86	25-150		07/02/2022 07:29
13C6_PFDA	1.2	1.2	97	25-150		07/02/2022 07:29
d3-MeFOSAA	1.2	1.0	86	25-150		07/02/2022 07:29
13C8_PFOSA	1.2	0.39	33	25-150		07/02/2022 07:29
d5-EtFOSAA	1.2	0.93	78	25-150		07/02/2022 07:29
13C7_PFUdA	1.2	1.0	87	25-150		07/02/2022 07:29
13C2_PFDoA	1.2	0.98	83	25-150		07/02/2022 07:29
13C2_PFTeDA	1.2	1.0	86	25-150		07/02/2022 07:29
13C3_HFPO-DA	1.2	0.94	79	25-150		07/02/2022 07:29
d7-N-MeFOSE	1.2	0.22	19	10-150		07/02/2022 07:29
d9-N-EtFOSE	1.2	0.23	20	10-150		07/02/2022 07:29
d3-N-MeFOSA	1.2	0.0022	0	10-150	R	07/02/2022 07:29
d5-N-EtFOSA	1.2	0.0035	0	10-150	R	07/02/2022 07:29

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Sample Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	B-11/B-2/B-4 COMP	Extraction Date	06/30/2022 09:00
Lab Sample ID	40246079002	Total Amount Extracted	5.16g
Lab File ID	B220701B_029	Percent Moisture	18.5865%
Matrix	Solid	Ical ID	220629A02
Collected	06/06/2022 15:00	CCal File	B220701B_028
Received	06/09/2022 09:20	Ending CCal File	B220701B_032
		Blank File	B220701B_007

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2_PFHxA	N/A	N/A	5.78	5.81	1590		07/02/2022 07:29
13C4_PFOA	N/A	N/A	7.15	7.17	1914		07/02/2022 07:29
13C2_PFDA	N/A	N/A	8.52	8.54	2221		07/02/2022 07:29
13C4_PFOS	N/A	N/A	9.00	9.01	1666		07/02/2022 07:29

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4_PFBA	N/A	N/A	4.31	4.32	2529		07/02/2022 07:29
13C5_PFPeA	N/A	N/A	5.10	5.12	2146		07/02/2022 07:29
13C3_PFBS	N/A	N/A	6.04	6.06	1461		07/02/2022 07:29
13C2_4:2FTS	N/A	N/A	5.50	5.52	533		07/02/2022 07:29
13C5_PFHxA	N/A	N/A	5.78	5.81	1473		07/02/2022 07:29
13C4_PFHpA	N/A	N/A	6.47	6.49	1748		07/02/2022 07:29
13C3_PFHxS	N/A	N/A	7.58	7.59	1212		07/02/2022 07:29
13C2_6:2FTS	N/A	N/A	6.79	6.82	674		07/02/2022 07:29
13C8_PFOA	N/A	N/A	7.15	7.17	2447		07/02/2022 07:29
13C9_PFNA	N/A	N/A	7.84	7.85	2081		07/02/2022 07:29
13C8_PFOS	N/A	N/A	9.01	9.01	1417		07/02/2022 07:29
13C2_8:2FTS	N/A	N/A	8.13	8.15	1163		07/02/2022 07:29
13C6_PFDA	N/A	N/A	8.52	8.54	1985		07/02/2022 07:29
d3-MeFOSAA	N/A	N/A	8.39	8.40	3160		07/02/2022 07:29
13C8_PFOSA	N/A	N/A	10.79	10.77	1744		07/02/2022 07:29
d5-EtFOSAA	N/A	N/A	8.69	8.71	1286		07/02/2022 07:29
13C7_PFUdA	N/A	N/A	9.20	9.22	1718		07/02/2022 07:29
13C2_PFDoA	N/A	N/A	9.89	9.90	1540		07/02/2022 07:29
13C2_PFTeDA	N/A	N/A	11.21	11.21	1398		07/02/2022 07:29
13C3_HFPO-DA	N/A	N/A	6.06	6.09	1658		07/02/2022 07:29
d7-N-MeFOSE	N/A	N/A	12.52	12.50	280		07/02/2022 07:29
d9-N-EtFOSE	N/A	N/A	13.00	12.97	426		07/02/2022 07:29
d3-N-MeFOSA	N/A	N/A	12.73	12.70	955	R	07/02/2022 07:29
d5-N-EtFOSA	N/A	N/A	13.15	13.11	66	R	07/02/2022 07:29

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	B-11/B-2/B-4 COMP	Extraction Date	06/30/2022 09:00
Lab Sample ID	40246079002	Total Amount Extracted	5.16g
Lab File ID	B220701B_029	Percent Moisture	18.5865%
Matrix	Solid	Ical ID	220629A02
Collected	06/06/2022 15:00	CCal File	B220701B_028
Received	06/09/2022 09:20	Ending CCal File	B220701B_032
		Blank File	B220701B_007

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.31	4.33	ND		07/02/2022 07:29
PFPeA	N/A	N/A	5.10	5.12	ND		07/02/2022 07:29
HFPO-DA	0.38	0.28	6.07	6.10	ND		07/02/2022 07:29
PFBS	0.34	0.43	6.05	6.07	ND		07/02/2022 07:29
PFHxA	0.08	0.09	5.79	5.82	ND		07/02/2022 07:29
4:2 FTS	0.00	0.93	0.00	5.53	ND		07/02/2022 07:29
PFPeS	0.42	0.46	6.83	6.86	ND		07/02/2022 07:29
PFHpA	0.32	0.32	6.48	6.50	ND		07/02/2022 07:29
DONA	0.54	0.56	6.72	6.75	ND		07/02/2022 07:29
PFHxS	0.35	0.37	7.58	7.60	771		07/02/2022 07:29
PFOA	0.44	0.40	7.15	7.18	57	J	07/02/2022 07:29
6:2 FTS	0.97	0.90	6.79	6.82	ND		07/02/2022 07:29
PFHpS	0.41	0.41	8.31	8.32	ND		07/02/2022 07:29
PFNA	0.15	0.14	7.84	7.86	ND		07/02/2022 07:29
PFOSAm	N/A	N/A	10.77	10.78	ND		07/02/2022 07:29
PFOS	0.37	0.38	8.97	9.03	202		07/02/2022 07:29
MeFOSA	0.00	0.59	0.00	12.73	ND		07/02/2022 07:29
PFDA	0.14	0.19	8.52	8.58	ND		07/02/2022 07:29
EtFOSAm	0.00	0.57	0.00	13.10	ND		07/02/2022 07:29
8:2 FTS	0.00	1.00	0.00	8.15	ND		07/02/2022 07:29
9-Cl-PF3ON	0.00	0.06	0.00	9.52	ND		07/02/2022 07:29
PFNS	0.00	0.47	0.00	9.74	ND		07/02/2022 07:29
PFUnDA	0.00	0.14	0.00	9.22	ND		07/02/2022 07:29
NMeFOSAA	0.00	0.85	8.39	8.41	ND		07/02/2022 07:29
NEtFOSAA	0.83	0.65	8.71	8.72	ND		07/02/2022 07:29
PFDS	0.00	0.34	0.00	10.41	ND		07/02/2022 07:29
PFDOA	0.00	0.18	0.00	9.92	ND		07/02/2022 07:29
MeFOSE	N/A	N/A	0.00	12.52	ND		07/02/2022 07:29
EtFOSE	0.00	0.00	13.02	12.99	ND		07/02/2022 07:29
11-Cl-PF3OUdS	0.00	0.02	0.00	10.87	ND		07/02/2022 07:29
PFTrDA	0.00	0.15	0.00	10.59	ND		07/02/2022 07:29
PFDoS	0.00	0.46	0.00	11.61	ND		07/02/2022 07:29
PFTDA	0.00	0.25	0.00	11.21	ND		07/02/2022 07:29

REPORT OF LABORATORY ANALYSIS

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Method Blank Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	BLKKT	Extraction Date	06/30/2022 09:00
Lab Sample ID	BLANK-99647	Total Amount Extracted	5.00g
Lab File ID	B220701B_007	Percent Moisture	100%
Matrix	Soil	Ical ID	220629A02
Collected	06/24/2022 14:55	CCal File	B220701B_005
Received	06/24/2022 14:55	Ending CCal File	B220701B_017
		Blank File	

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	0.10	0.02	0.02	1	375-22-4		07/02/2022 00:09
PFPeA	ND	0.10	0.02	0.02	1	2706-90-3		07/02/2022 00:09
HFPO-DA	ND	0.10	0.03	0.03	1	13252-13-6		07/02/2022 00:09
PFBS	ND	0.08	0.02	0.02	1	375-73-5		07/02/2022 00:09
PFHxA	ND	0.10	0.03	0.03	1	307-24-4		07/02/2022 00:09
4:2 FTS	ND	0.09	0.03	0.03	1	757124-72-4		07/02/2022 00:09
PFPeS	ND	0.09	0.01	0.01	1	2706-91-4		07/02/2022 00:09
PFHpA	ND	0.10	0.02	0.02	1	375-85-9		07/02/2022 00:09
DONA	ND	0.09	0.03	0.03	1	919005-14-4		07/02/2022 00:09
PFHxS	ND	0.09	0.02	0.02	1	355-46-4		07/02/2022 00:09
PFOA	ND	0.10	0.02	0.02	1	335-67-1		07/02/2022 00:09
6:2 FTS	ND	0.09	0.03	0.03	1	27619-97-2		07/02/2022 00:09
PFHpS	ND	0.09	0.02	0.02	1	375-92-8		07/02/2022 00:09
PFNA	ND	0.10	0.02	0.02	1	375-95-1		07/02/2022 00:09
PFOSAm	ND	0.10	0.02	0.02	1	754-91-6		07/02/2022 00:09
PFOS	ND	0.09	0.02	0.02	1	1763-23-1		07/02/2022 00:09
MeFOSA	ND	0.10	0.02	0.02	1	31506-32-8		07/02/2022 00:09
PFDA	ND	0.10	0.02	0.02	1	335-76-2		07/02/2022 00:09
EtFOSAm	ND	0.10	0.02	0.02	1	4151-50-2		07/02/2022 00:09
8:2 FTS	ND	0.09	0.02	0.02	1	39108-34-4		07/02/2022 00:09
9-Cl-PF3ON	ND	0.09	0.01	0.01	1	756426-58-1		07/02/2022 00:09
PFNS	ND	0.09	0.01	0.01	1	68259-12-1		07/02/2022 00:09
PFUnDA	ND	0.10	0.02	0.02	1	2058-94-8		07/02/2022 00:09
NMeFOSAA	ND	0.10	0.02	0.02	1	2355-31-9		07/02/2022 00:09
NEtFOSAA	ND	0.10	0.02	0.02	1	2991-50-6		07/02/2022 00:09
PFDS	ND	0.09	0.02	0.02	1	335-77-3		07/02/2022 00:09
PFDOA	ND	0.10	0.02	0.02	1	307-55-1		07/02/2022 00:09
MeFOSE	ND	0.10	0.02	0.02	1	24448-09-7		07/02/2022 00:09
EtFOSE	ND	0.10	0.02	0.02	1	1691-99-2		07/02/2022 00:09
11-Cl-PF3OUdS	ND	0.09	0.01	0.01	1	763051-92-9		07/02/2022 00:09
PFTrDA	ND	0.10	0.02	0.02	1	72629-94-8		07/02/2022 00:09
PFDoS	ND	0.09	0.03	0.03	1	79780-39-5		07/02/2022 00:09
PFTDA	ND	0.10	0.03	0.03	1	376-06-7		07/02/2022 00:09

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Method Blank Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	BLKKT	Extraction Date	06/30/2022 09:00
Lab Sample ID	BLANK-99647	Total Amount Extracted	5.00g
Lab File ID	B220701B_007	Percent Moisture	100%
Matrix	Soil	Ical ID	220629A02
Collected	06/24/2022 14:55	CCal File	B220701B_005
Received	06/24/2022 14:55	Ending CCal File	B220701B_017
		Blank File	

Injection Internal Standards

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2_PFHxA	1.0	0.88	88	50-150		07/02/2022 00:09
13C4_PFOA	1.0	0.87	87	50-150		07/02/2022 00:09
13C2_PFDA	1.0	0.90	90	50-150		07/02/2022 00:09
13C4_PFOS	0.96	0.92	96	50-150		07/02/2022 00:09

Extracted Internal Standards

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4_PFBA	1.0	0.89	89	50-150		07/02/2022 00:09
13C5_PFPeA	1.0	0.86	86	50-150		07/02/2022 00:09
13C3_PFBS	0.93	0.80	86	50-150		07/02/2022 00:09
13C2_4:2FTS	0.94	0.81	87	50-150		07/02/2022 00:09
13C5_PFHxA	1.0	0.87	87	50-150		07/02/2022 00:09
13C4_PFHpA	1.0	0.85	85	50-150		07/02/2022 00:09
13C3_PFHxS	0.95	0.86	91	50-150		07/02/2022 00:09
13C2_6:2FTS	0.95	0.85	90	50-150		07/02/2022 00:09
13C8_PFOA	1.0	0.83	83	50-150		07/02/2022 00:09
13C9_PFNA	1.0	0.88	88	50-150		07/02/2022 00:09
13C8_PFOS	0.96	0.84	88	50-150		07/02/2022 00:09
13C2_8:2FTS	0.96	0.87	91	50-150		07/02/2022 00:09
13C6_PFDA	1.0	0.86	86	50-150		07/02/2022 00:09
d3-MeFOSAA	1.0	0.86	86	50-150		07/02/2022 00:09
13C8_PFOSA	1.0	0.84	84	50-150		07/02/2022 00:09
d5-EtFOSAA	1.0	0.81	81	50-150		07/02/2022 00:09
13C7_PFUdA	1.0	0.91	91	50-150		07/02/2022 00:09
13C2_PFDoA	1.0	0.86	86	50-150		07/02/2022 00:09
13C2_PFTeDA	1.0	0.79	79	50-150		07/02/2022 00:09
13C3_HFPO-DA	1.0	0.91	91	50-150		07/02/2022 00:09
d7-N-MeFOSE	1.0	0.84	84	20-150		07/02/2022 00:09
d9-N-EtFOSE	1.0	0.79	79	20-150		07/02/2022 00:09
d3-N-MeFOSA	1.0	0.73	73	20-150		07/02/2022 00:09
d5-N-EtFOSA	1.0	0.78	78	20-150		07/02/2022 00:09

REPORT OF LABORATORY ANALYSIS

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Method Blank Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	BLKKT	Extraction Date	06/30/2022 09:00
Lab Sample ID	BLANK-99647	Total Amount Extracted	5.00g
Lab File ID	B220701B_007	Percent Moisture	100%
Matrix	Soil	Ical ID	220629A02
Collected	06/24/2022 14:55	CCal File	B220701B_005
Received	06/24/2022 14:55	Ending CCal File	B220701B_017
		Blank File	

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2_PFHxA	N/A	N/A	5.79	5.81	2784		07/02/2022 00:09
13C4_PFOA	N/A	N/A	7.16	7.17	2317		07/02/2022 00:09
13C2_PFDA	N/A	N/A	8.51	8.54	1691		07/02/2022 00:09
13C4_PFOS	N/A	N/A	9.00	9.01	1700		07/02/2022 00:09

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4_PFBA	N/A	N/A	4.31	4.32	2518		07/02/2022 00:09
13C5_PFPeA	N/A	N/A	5.11	5.12	2161		07/02/2022 00:09
13C3_PFBS	N/A	N/A	6.05	6.06	1579		07/02/2022 00:09
13C2_4:2FTS	N/A	N/A	5.51	5.52	744		07/02/2022 00:09
13C5_PFHxA	N/A	N/A	5.79	5.81	2247		07/02/2022 00:09
13C4_PFHpA	N/A	N/A	6.48	6.49	1731		07/02/2022 00:09
13C3_PFHxS	N/A	N/A	7.58	7.59	1714		07/02/2022 00:09
13C2_6:2FTS	N/A	N/A	6.81	6.82	1366		07/02/2022 00:09
13C8_PFOA	N/A	N/A	7.16	7.17	3184		07/02/2022 00:09
13C9_PFNA	N/A	N/A	7.83	7.85	2433		07/02/2022 00:09
13C8_PFOS	N/A	N/A	9.00	9.01	3492		07/02/2022 00:09
13C2_8:2FTS	N/A	N/A	8.12	8.15	637		07/02/2022 00:09
13C6_PFDA	N/A	N/A	8.52	8.54	1444		07/02/2022 00:09
d3-MeFOSAA	N/A	N/A	8.38	8.40	1128		07/02/2022 00:09
13C8_PFOSA	N/A	N/A	10.79	10.77	3409		07/02/2022 00:09
d5-EtFOSAA	N/A	N/A	8.69	8.71	898		07/02/2022 00:09
13C7_PFUdA	N/A	N/A	9.20	9.22	2694		07/02/2022 00:09
13C2_PFDoA	N/A	N/A	9.88	9.90	1302		07/02/2022 00:09
13C2_PFTeDA	N/A	N/A	11.22	11.21	2145		07/02/2022 00:09
13C3_HFPO-DA	N/A	N/A	6.07	6.09	1456		07/02/2022 00:09
d7-N-MeFOSE	N/A	N/A	12.53	12.50	540		07/02/2022 00:09
d9-N-EtFOSE	N/A	N/A	13.00	12.97	798		07/02/2022 00:09
d3-N-MeFOSA	N/A	N/A	12.74	12.70	1036		07/02/2022 00:09
d5-N-EtFOSA	N/A	N/A	13.16	13.11	709		07/02/2022 00:09

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Method Blank Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	BLKKT	Extraction Date	06/30/2022 09:00
Lab Sample ID	BLANK-99647	Total Amount Extracted	5.00g
Lab File ID	B220701B_007	Percent Moisture	100%
Matrix	Soil	Ical ID	220629A02
Collected	06/24/2022 14:55	CCal File	B220701B_005
Received	06/24/2022 14:55	Ending CCal File	B220701B_017
		Blank File	

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	0.00	4.33	ND		07/02/2022 00:09
PFPeA	N/A	N/A	5.11	5.12	ND		07/02/2022 00:09
HFPO-DA	0.17	0.30	6.08	6.10	ND		07/02/2022 00:09
PFBS	0.00	0.45	0.00	6.07	ND		07/02/2022 00:09
PFHxA	0.00	0.08	0.00	5.82	ND		07/02/2022 00:09
4:2 FTS	0.00	0.90	0.00	5.53	ND		07/02/2022 00:09
PFPeS	0.00	0.38	0.00	6.86	ND		07/02/2022 00:09
PFHpA	0.00	0.31	0.00	6.50	ND		07/02/2022 00:09
DONA	0.00	0.59	0.00	6.75	ND		07/02/2022 00:09
PFHxS	0.00	0.36	0.00	7.60	ND		07/02/2022 00:09
PFOA	0.00	0.41	0.00	7.18	ND		07/02/2022 00:09
6:2 FTS	0.00	0.89	0.00	6.82	ND		07/02/2022 00:09
PFHpS	0.00	0.42	0.00	8.32	ND		07/02/2022 00:09
PFNA	0.13	0.14	7.86	7.86	ND		07/02/2022 00:09
PFOSAm	N/A	N/A	10.80	10.78	ND		07/02/2022 00:09
PFOS	0.00	0.40	0.00	9.03	ND		07/02/2022 00:09
MeFOSA	0.00	0.60	0.00	12.73	ND		07/02/2022 00:09
PFDA	0.00	0.19	0.00	8.58	ND		07/02/2022 00:09
EtFOSAm	0.00	0.59	0.00	13.10	ND		07/02/2022 00:09
8:2 FTS	0.00	0.79	0.00	8.15	ND		07/02/2022 00:09
9-Cl-PF3ON	0.00	0.05	0.00	9.52	ND		07/02/2022 00:09
PFNS	0.00	0.47	0.00	9.74	ND		07/02/2022 00:09
PFUnDA	0.00	0.14	0.00	9.22	ND		07/02/2022 00:09
NMeFOSAA	0.00	0.84	0.00	8.41	ND		07/02/2022 00:09
NEtFOSAA	0.00	0.65	0.00	8.72	ND		07/02/2022 00:09
PFDS	0.00	0.32	0.00	10.41	ND		07/02/2022 00:09
PFDOA	0.00	0.16	0.00	9.92	ND		07/02/2022 00:09
MeFOSE	N/A	N/A	0.00	12.52	ND		07/02/2022 00:09
EtFOSE	0.00	0.00	0.00	12.99	ND		07/02/2022 00:09
11-Cl-PF3OUdS	0.00	0.01	0.00	10.87	ND		07/02/2022 00:09
PFTrDA	0.00	0.14	0.00	10.59	ND		07/02/2022 00:09
PFDoS	0.00	0.47	0.00	11.61	ND		07/02/2022 00:09
PFTDA	0.00	0.21	0.00	11.21	ND		07/02/2022 00:09

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LCS Analysis Summary

PFAS by Isotope Dilution

Lab Sample ID	LCS-99648	Instrument ID	10LCMS02
Run File Name	B220701B_008	Column ID	1071B00011
Analyzed	07/02/2022 00:29	Ical ID	220629A02
Injected By	NH	Level	L

Injection Internal Standards

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers
13C2_PFHxA	1.0	0.83	83	50-150	
13C4_PFOA	1.0	0.90	90	50-150	
13C2_PFDA	1.0	0.81	81	50-150	
13C4_PFOS	0.96	0.91	95	50-150	

Extracted Internal Standards

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers
13C4_PFBA	1.0	0.80	80	50-150	
13C5_PFPeA	1.0	0.78	78	50-150	
13C3_PFBS	0.93	0.71	76	50-150	
13C2_4:2FTS	0.94	0.67	71	50-150	
13C5_PFHxA	1.0	0.78	78	50-150	
13C4_PFHpA	1.0	0.74	74	50-150	
13C3_PFHxS	0.95	0.80	84	50-150	
13C2_6:2FTS	0.95	0.71	75	50-150	
13C8_PFOA	1.0	0.72	72	50-150	
13C9_PFNA	1.0	0.80	80	50-150	
13C8_PFOS	0.96	0.74	77	50-150	
13C2_8:2FTS	0.96	0.77	80	50-150	
13C6_PFDA	1.0	0.79	79	50-150	
d3-MeFOSAA	1.0	0.70	70	50-150	
13C8_PFOSA	1.0	0.72	72	50-150	
d5-EtFOSAA	1.0	0.71	71	50-150	
13C7_PFUdA	1.0	0.79	79	50-150	
13C2_PFDoA	1.0	0.77	77	50-150	
13C2_PFTeDA	1.0	0.75	75	50-150	
13C3_HFPO-DA	1.0	0.77	77	50-150	
d7-N-MeFOSE	1.0	0.64	64	20-150	
d9-N-EtFOSE	1.0	0.68	68	20-150	
d3-N-MeFOSA	1.0	0.59	59	20-150	
d5-N-EtFOSA	1.0	0.59	59	20-150	

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LCS Analysis Summary

PFAS by Isotope Dilution

Lab Sample ID	LCS-99648	Instrument ID	10LCMS02
Run File Name	B220701B_008	Column ID	1071B00011
Analyzed	07/02/2022 00:29	Ical ID	220629A02
Injected By	NH	Level	L

Native Analytes

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers	CAS No.
PFBA	0.20	0.21	106	50-150		375-22-4
PFPeA	0.20	0.22	109	50-150		2706-90-3
HFPO-DA	0.20	0.23	114	50-150		13252-13-6
PFBS	0.18	0.20	111	50-150		375-73-5
PFHxA	0.20	0.24	118	50-150		307-24-4
4:2 FTS	0.19	0.18	95	50-150		757124-72-4
PFPeS	0.19	0.19	101	50-150		2706-91-4
PFHpA	0.20	0.22	111	50-150		375-85-9
DONA	0.19	0.21	111	50-150		919005-14-4
PFHxS	0.18	0.18	99	50-150		355-46-4
PFOA	0.20	0.22	110	50-150		335-67-1
6:2 FTS	0.19	0.21	111	50-150		27619-97-2
PFHpS	0.19	0.20	106	50-150		375-92-8
PFNA	0.20	0.20	101	50-150		375-95-1
PFOSAm	0.20	0.22	108	50-150		754-91-6
PFOS	0.18	0.19	105	50-150		1763-23-1
MeFOSA	0.20	0.16	80	50-150		31506-32-8
PFDA	0.20	0.19	97	50-150		335-76-2
EtFOSAm	0.20	0.19	96	50-150		4151-50-2
8:2 FTS	0.19	0.19	100	50-150		39108-34-4
9-Cl-PF3ON	0.19	0.19	101	50-150		756426-58-1
PFNS	0.19	0.20	105	50-150		68259-12-1
PFUnDA	0.20	0.21	107	50-150		2058-94-8
NMeFOSAA	0.20	0.24	120	50-150		2355-31-9
NEtFOSAA	0.20	0.23	117	50-150		2991-50-6
PFDS	0.19	0.19	98	50-150		335-77-3
PFDOA	0.20	0.20	102	50-150		307-55-1
MeFOSE	0.20	0.22	109	50-150		24448-09-7
EtFOSE	0.20	0.19	93	50-150		1691-99-2
11-Cl-PF3OUdS	0.19	0.18	97	50-150		763051-92-9
PFTrDA	0.20	0.21	105	50-150		72629-94-8
PFDoS	0.19	0.18	92	50-150		79780-39-5
PFTDA	0.20	0.21	106	50-150		376-06-7

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LCS Analysis Summary

PFAS by Isotope Dilution

Lab Sample ID	LCS-99648	Instrument ID	10LCMS02
Run File Name	B220701B_008	Column ID	1071B00011
Analyzed	07/02/2022 00:29	Ical ID	220629A02
Injected By	NH	Level	L

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
13C2_PFHxA	N/A	N/A	5.79	5.81	1806	
13C4_PFOA	N/A	N/A	7.16	7.17	1933	
13C2_PFDA	N/A	N/A	8.51	8.54	2630	
13C4_PFOS	N/A	N/A	9.00	9.01	1805	

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
13C4_PFBA	N/A	N/A	4.31	4.32	2535	
13C5_PFPeA	N/A	N/A	5.11	5.12	2200	
13C3_PFBS	N/A	N/A	6.05	6.06	1732	
13C2_4:2FTS	N/A	N/A	5.51	5.52	655	
13C5_PFHxA	N/A	N/A	5.79	5.81	1778	
13C4_PFHpA	N/A	N/A	6.48	6.49	1745	
13C3_PFHxS	N/A	N/A	7.58	7.59	1665	
13C2_6:2FTS	N/A	N/A	6.81	6.82	1040	
13C8_PFOA	N/A	N/A	7.16	7.17	2476	
13C9_PFNA	N/A	N/A	7.83	7.85	2065	
13C8_PFOS	N/A	N/A	9.00	9.01	3493	
13C2_8:2FTS	N/A	N/A	8.13	8.15	285	
13C6_PFDA	N/A	N/A	8.52	8.54	1756	
d3-MeFOSAA	N/A	N/A	8.38	8.40	965	
13C8_PFOSA	N/A	N/A	10.79	10.77	3087	
d5-EtFOSAA	N/A	N/A	8.69	8.71	989	
13C7_PFUdA	N/A	N/A	9.20	9.22	2337	
13C2_PFDoA	N/A	N/A	9.89	9.90	1293	
13C2_PFTeDA	N/A	N/A	11.22	11.21	2024	
13C3_HFPO-DA	N/A	N/A	6.07	6.09	1692	
d7-N-MeFOSE	N/A	N/A	12.53	12.50	577	
d9-N-EtFOSE	N/A	N/A	13.00	12.97	858	
d3-N-MeFOSA	N/A	N/A	12.74	12.70	996	
d5-N-EtFOSA	N/A	N/A	13.16	13.11	866	

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LCS Analysis Summary

PFAS by Isotope Dilution

Lab Sample ID	LCS-99648	Instrument ID	10LCMS02
Run File Name	B220701B_008	Column ID	1071B00011
Analyzed	07/02/2022 00:29	Ical ID	220629A02
Injected By	NH	Level	L

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
PFBA	N/A	N/A	4.32	4.33	114	
PFPeA	N/A	N/A	5.12	5.12	434	
HFPO-DA	0.26	0.30	6.08	6.10	589	
PFBS	0.43	0.45	6.06	6.07	798	
PFHxA	0.07	0.08	5.80	5.82	283	
4:2 FTS	0.95	0.90	5.51	5.53	946	
PFPeS	0.45	0.38	6.85	6.86	1587	
PFHpA	0.31	0.31	6.49	6.50	22	
DONA	0.62	0.59	6.73	6.75	1560	
PFHxS	0.37	0.36	7.58	7.60	1134	
PFOA	0.39	0.41	7.16	7.18	186	
6:2 FTS	0.87	0.89	6.81	6.82	520	
PFHpS	0.42	0.42	8.31	8.32	3080	
PFNA	0.13	0.14	7.84	7.86	733	
PFOSAm	N/A	N/A	10.80	10.78	1344	
PFOS	0.41	0.40	9.01	9.03	548	
MeFOSA	0.63	0.60	12.77	12.73	163	
PFDA	0.18	0.19	8.53	8.58	274	
EtFOSAm	0.61	0.59	13.18	13.10	776	
8:2 FTS	0.92	0.79	8.13	8.15	13846	
9-Cl-PF3ON	0.05	0.05	9.51	9.52	1137	
PFNS	0.50	0.47	9.70	9.74	1314	
PFUnDA	0.13	0.14	9.21	9.22	454	
NMeFOSAA	0.77	0.84	8.39	8.41	24331	
NEtFOSAA	0.61	0.65	8.70	8.72	210	
PFDS	0.36	0.32	10.38	10.41	2427	
PFDOA	0.18	0.16	9.89	9.92	292	
MeFOSE	N/A	N/A	12.58	12.52	383	
EtFOSE	0.00	0.00	13.04	12.99	388	
11-Cl-PF3OUdS	0.02	0.01	10.86	10.87	507	
PFTrDA	0.14	0.14	10.57	10.59	305	
PFDoS	0.46	0.47	11.63	11.61	2398	
PFTDA	0.24	0.21	11.22	11.21	228	

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