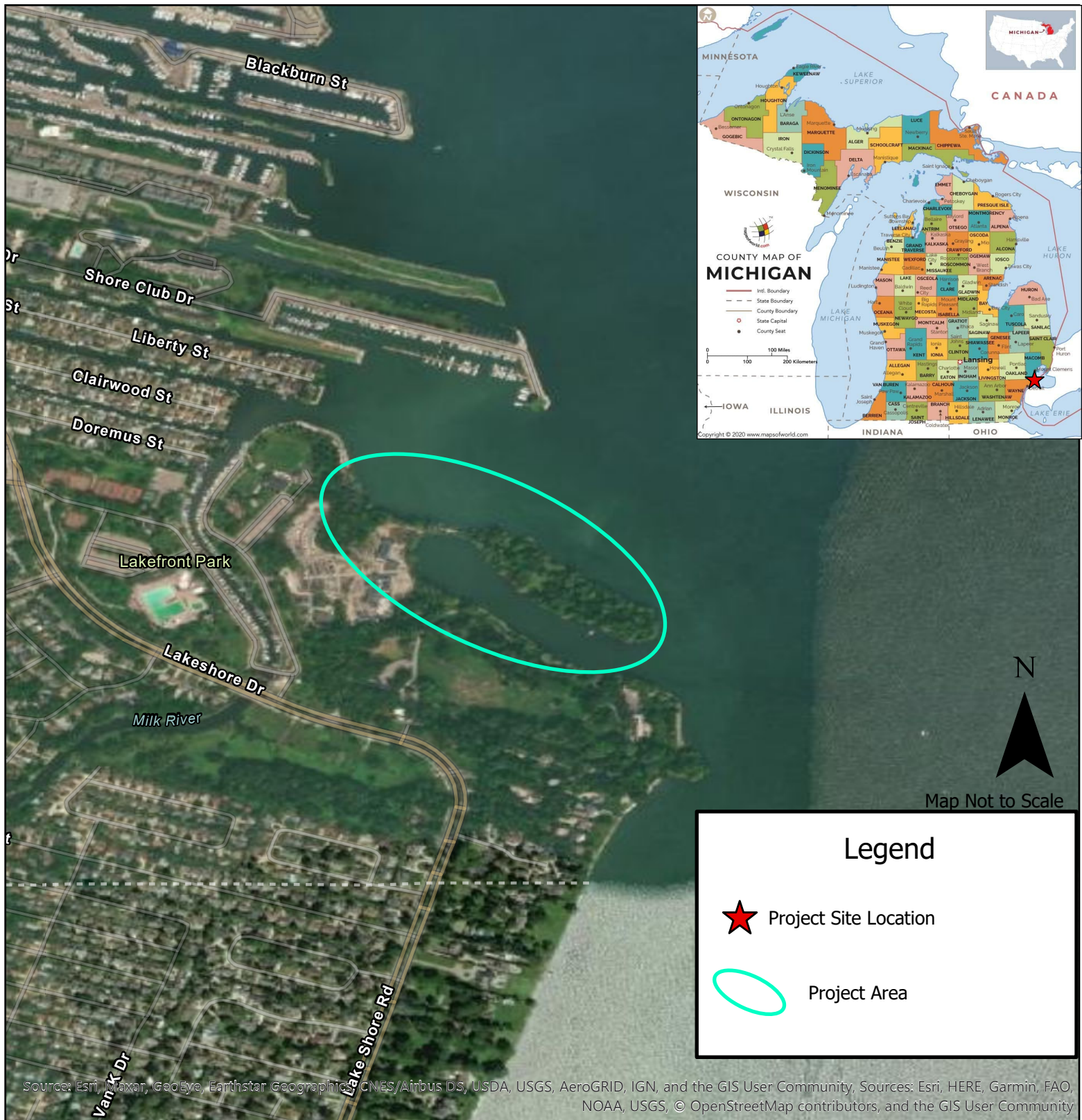
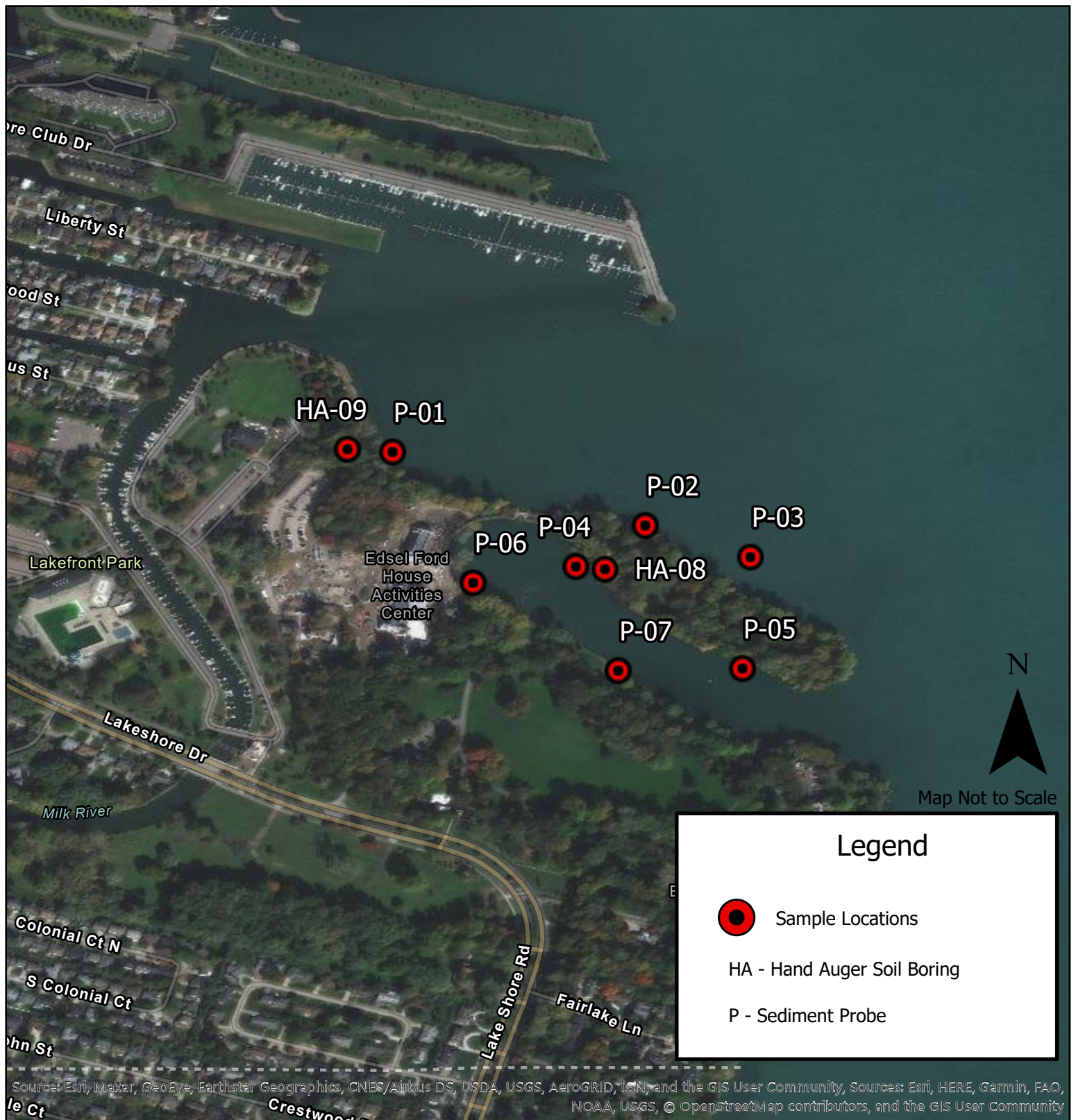




Drawn by: Tess Burzynski	Prepared by:  Somat Engineering INCORPORATED 3031 W Grand Blvd #228 Detroit, Michigan 48202	Figure 1 Site Location Map	Client: 
Date Drawn: 6/22/2021			
Reviewed by: Brian Smits		Ford Cove Restoration Feasibility Study 1100 Lake Shore Road, Grosse Point Shores, MI 48326	
Date Reviewed: 6/23/2021			



Drawn by: Tess Burzynski

Date Drawn: 6/22/2021

Reviewed by: Brian Smits

Date Reviewed: 6/23/2021

Prepared by:



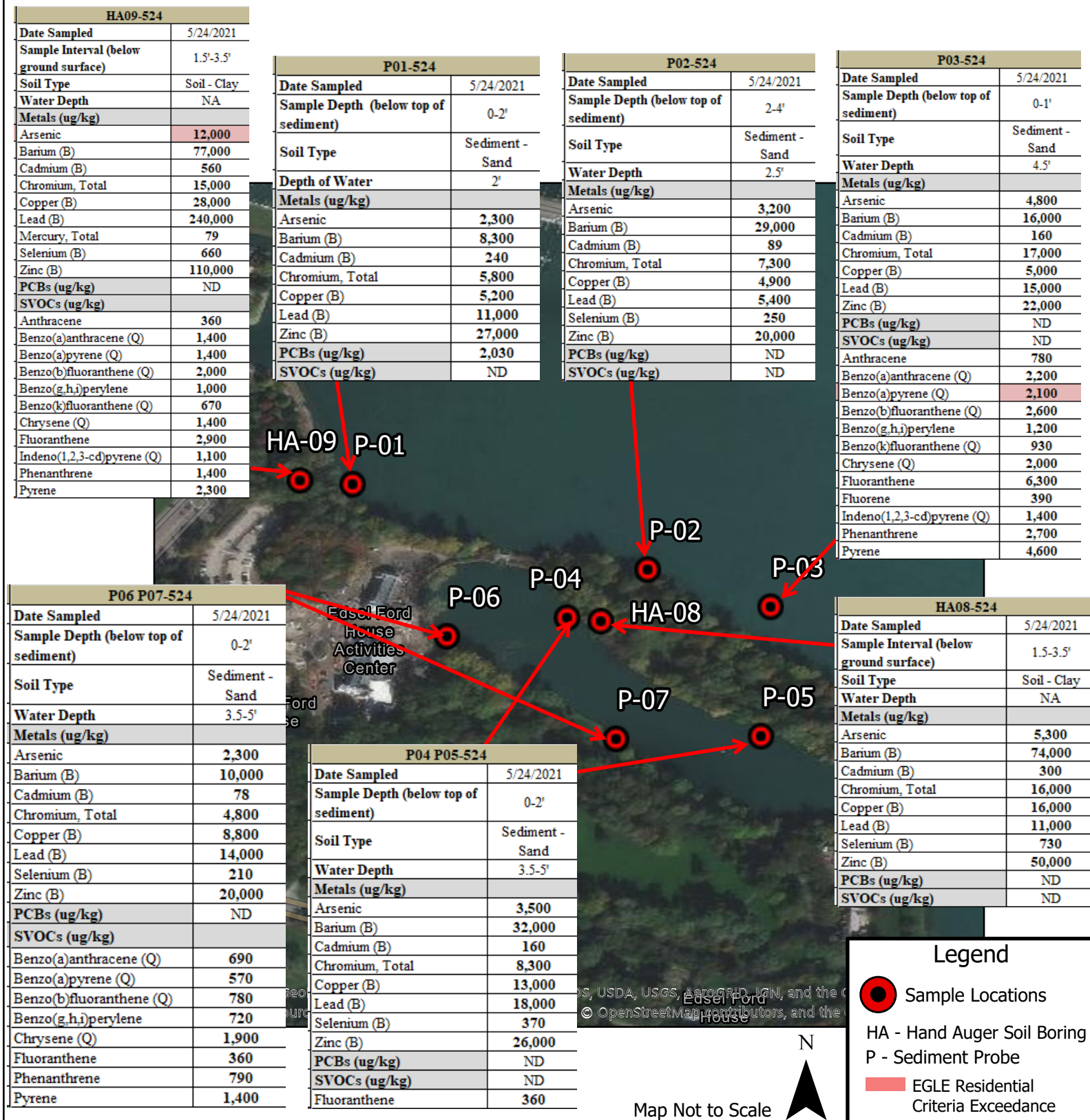
3031 W Grand Blvd #228
Detroit, Michigan 48202

Figure 2 Sample Location Map

Ford Cove Restoration Feasibility Study
1100 Lake Shore Road, Grosse Pointe Shores, MI 48326

Client:





Drawn by: Tess Burzynski	Prepared by:	Figure 3 Sample Investigation Results Ford Cove Restoration Feasibility Study 1100 Lake Shore Road, Grosse Pointe Shores, MI 48326	Client:
Date Drawn: 6/22/2021	 Somat Engineering INCORPORATED		
Reviewed by: Brian Smits			
Date Reviewed: 6/23/2021			
3031 W Grand Blvd #228 Detroit, Michigan 48202			

PROJECT NO. 2021017A DATE STARTED: 5/24/2021 DATE COMPLETED: 5/24/2021 LOG OF TEST BORING P-01

LOG OF SOIL PROFILE			FIELD DATA				LABORATORY DATA						▼ SPT N VALUE ▼			
ELEVATION ft			DEPTH (ft)	SAMPLE NO.	SAMPLE RECOVERY (in)	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200	● MOISTURE CONTENT (%) ●	■ UCC STRENGTH (psf) ■
		Ground Surface Elevation 576.05 ft	0												10 20 30 40	10 20 30 40
		Water														
574.05			2.0													
		Sediment - POORLY GRADED FINE TO COARSE SAND with shells, few gravel, black, wet (SP)		1				4.0						5		
572.05			4.0													
		Stiff LEAN CLAY, trace gravel, gray (CL)	5	2				6.0	2000*							
570.05			6.0													
		End of Boring at 6 feet The water level elevation in Lake Saint Clair at the time of the topographic survey (June 1 and June 2, 2021) was 576.05 feet per NAVD88.														
			10													

GROUNDWATER READINGS

First Encountered: n/a
Upon Completion: n/a

BORING LOCATION INFORMATION

Latitude: 42.4588671
Longitude: -82.8743466

Coordinates/GSE determined by:

KEY

Torvane
* Penetrometer
<> Disturbed Sample

Drilling Company: 7NT

Drill Rig: none

Logged By: S. Batshon

Drilling Method: Direct Push

Method Notes:

Hammer Type: Manual

Backfilled With: None. hole collapsed upon probe removal.

Checked By: JA

QA/QC By: JA

Remarks:

Sediment probe coordinates are based on
hand held GPS unit. Unconfined compressive
strength may not be reliable since sample is
disturbed.



Somat Engineering Inc.

Ford Cove Restoration Feasibility Study
Grosse Pointe Shores, Michigan

LOG OF SOIL PROFILE			FIELD DATA			LABORATORY DATA						▼ SPT N VALUE ▼			
ELEVATION ft			DEPTH (ft)	SAMPLE NO.	SAMPLE RECOVERY (in)	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200	10 20 30 40
		Ground Surface Elevation 576.05 ft	0												10 20 30 40
		Water													● MOISTURE CONTENT (%) ● 10 20 30 40
573.55			2.5												■ UCC STRENGTH (psf) ■ 2000 4000 6000 8000
		Sediment - WELL GRADED GRAVEL with coarse sand and shells, dark gray, wet (GW)		1				4.5						4	
571.55			4.5												
		Sediment - Coarse SAND with gravel, few shells, dark gray, wet (SP)		2				6.5							
569.55			6.5												
		Stiff LEAN CLAY, trace gravel, gray (CL)		3				8.5	2000*						
567.55			8.5												
		End of Boring at 8.5 feet (Terminated due to refusal) The water level elevation in Lake Saint Clair at the time of the topographic survey (June 1 and June 2, 2021) was 576.05 feet per NAVD88.	10												

GROUNDWATER READINGS

First Encountered: n/a
Upon Completion: n/a

BORING LOCATION INFORMATION

Latitude: 42.4579366
Longitude: -82.871131

Coordinates/GSE determined by:

KEY

Torvane
* Penetrometer
<> Disturbed Sample

Drilling Company: 7NT

Drill Rig: none

Logged By: S. Batshon

Drilling Method: Direct Push

Method Notes:

Hammer Type: Manual

Backfilled With: None. hole collapsed upon probe removal.

Checked By: JA

QA/QC By: JA

Remarks:

Sediment probe coordinates are based on hand held GPS unit. Unconfined compressive strength may not be reliable since sample is disturbed.



Somat Engineering Inc.

Ford Cove Restoration Feasibility Study
Grosse Pointe Shores, Michigan

PROJECT NO. 2021017A DATE STARTED: 5/24/2021 DATE COMPLETED: 5/24/2021 LOG OF TEST BORING P-03

LOG OF SOIL PROFILE			FIELD DATA				LABORATORY DATA						▼ SPT N VALUE ▼			
ELEVATION ft			DEPTH (ft)	SAMPLE NO.	SAMPLE RECOVERY (in)	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200	● MOISTURE CONTENT (%) ●	■ UCC STRENGTH (psf) ■
		Ground Surface Elevation 576.05 ft	0												10 20 30 40	10 20 30 40
		Water														
571.55			4.5													
570.55		Sediment - Coarse SILTY SAND with gravel, trace shells, dark gray, wet (SM)	5													
		Field Engineer reported cobbles at the bottom of the lake bed (possibly old shoreline armoring)		1				6.5						21		
568.55		Stiff LEAN CLAY, trace gravel, gray (CL)	7.5	2				7.5	2000*							
		End of Boring at 7.5 feet (Terminated due to refusal) The water level elevation in Lake Saint Clair at the time of the topographic survey (June 1 and June 2, 2021) was 576.05 feet per NAVD88.														

GROUNDWATER READINGS

First Encountered: n/a
Upon Completion: n/a

BORING LOCATION INFORMATION

Latitude: 42.4575321
Longitude: -82.8697935

Coordinates/GSE determined by:

KEY

Torvane
* Penetrometer
<> Disturbed Sample

Drilling Company: 7NT

Drill Rig: none

Logged By: S. Batshon

Drilling Method: Direct Push

Method Notes:

Hammer Type: Manual

Backfilled With: None. hole collapsed upon probe removal.

Checked By: JA

QA/QC By: JA

Remarks:

Sediment probe coordinates are based on hand held GPS unit. Unconfined compressive strength may not be reliable since sample is disturbed.



Somat Engineering Inc.

Ford Cove Restoration Feasibility Study
Grosse Pointe Shores, Michigan

PROJECT NO. 2021017A DATE STARTED: 5/24/2021 DATE COMPLETED: 5/24/2021 LOG OF TEST BORING P-04

LOG OF SOIL PROFILE			FIELD DATA							LABORATORY DATA							▼ SPT N VALUE ▼			
ELEVATION ft			DEPTH (ft)	SAMPLE NO.	SAMPLE RECOVERY (in)	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200	10	20	30	40		
															● MOISTURE CONTENT (%) ●					
															10	20	30	40		
															■ UCC STRENGTH (psf) ■					
															2000	4000	6000	8000		
		Ground Surface Elevation 576.05 ft	0																	
		Water																		
570.55			5.5																	
569.55		Sediment - SILTY SAND with wood pieces, organics, shells, and vegetation, black, wet (SM) Field Engineer reported cobbles at the bottom of the lake bed (possibly old shoreline armoring)	6.5	1				7.0						28						
567.05		Stiff LEAN CLAY, trace gravel, gray (CL)	9.0	2				9.0	2000*											
		End of Boring at 9 feet (Terminated due to refusal) The water level elevation in Lake Saint Clair at the time of the topographic survey (June 1 and June 2, 2021) was 576.05 feet per NAVD88.	10																	

GROUNDWATER READINGS

First Encountered: n/a
Upon Completion: n/a

BORING LOCATION INFORMATION

Latitude: 42.4574116
Longitude: -82.8720131

Coordinates/GSE determined by:

KEY

Torvane
* Penetrometer
<> Disturbed Sample

Drilling Company: 7NT

Drill Rig: none

Logged By: S. Batshon

Drilling Method: Direct Push

Method Notes:

Hammer Type: Manual

Backfilled With: None. hole collapsed upon probe removal.

Checked By: JA

QA/QC By: JA

Remarks:

Sediment probe coordinates are based on hand held GPS unit. Unconfined compressive strength may not be reliable since sample is disturbed.



Somat Engineering Inc.

Ford Cove Restoration Feasibility Study
Grosse Pointe Shores, Michigan

PROJECT NO. 2021017A DATE STARTED: 5/24/2021 DATE COMPLETED: 5/24/2021 LOG OF TEST BORING P-05

LOG OF SOIL PROFILE			FIELD DATA			LABORATORY DATA							▼ SPT N VALUE ▼			
ELEVATION ft			DEPTH (ft)	SAMPLE NO.	SAMPLE RECOVERY (in)	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200	● MOISTURE CONTENT (%) ●	■ UCC STRENGTH (psf) ■
		Ground Surface Elevation 576.05 ft	0												10 20 30 40	10 20 30 40
		Water														
573.1			3.0											9		
572.1		Sediment - WELL GRADED SAND with silt, gravel, shells, vegetation and pieces of wood, black and gray, wet (SW-SM)	4.0	1				5.0								
		Stiff Silty LEAN CLAY, trace gravel, gray and brown (CL)														
569.1			7.0	2				7.0	2000*							
		End of Boring at 7 feet The water level elevation in Lake Saint Clair at the time of the topographic survey (June 1 and June 2, 2021) was 576.05 feet per NAVD88.														
			10													

GROUNDWATER READINGS

First Encountered: n/a
Upon Completion: n/a

BORING LOCATION INFORMATION

Latitude: 42.4561182
Longitude: -82.8698984

Coordinates/GSE determined by:

KEY

Torvane
* Penetrometer
<> Disturbed Sample

Drilling Company: 7NT

Drill Rig: none

Logged By: S. Batshon

Drilling Method: Direct Push

Method Notes:

Hammer Type: Manual

Backfilled With: None. hole collapsed upon probe removal.

Checked By: JA

QA/QC By: JA

Remarks:

Sediment probe coordinates are based on
hand held GPS unit. Unconfined compressive
strength may not be reliable since sample is
disturbed.



Somat Engineering Inc.

Ford Cove Restoration Feasibility Study
Grosse Pointe Shores, Michigan

PROJECT NO. 2021017A DATE STARTED: 5/24/2021 DATE COMPLETED: 5/24/2021 LOG OF TEST BORING P-06

LOG OF SOIL PROFILE			FIELD DATA			LABORATORY DATA							▼ SPT N VALUE ▼			
ELEVATION ft			DEPTH (ft)	SAMPLE NO.	SAMPLE RECOVERY (in)	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200	● MOISTURE CONTENT (%) ●	■ UCC STRENGTH (psf) ■
		Ground Surface Elevation 576.05 ft	0												10 20 30 40	10 20 30 40
		Water														
571.05			5.0													
		Sediment - WELL GRADED SAND with silt, gravel, shells, vegetation and pieces of wood, black and gray, wet (SW-SM)		1				7.0						9		
569.09			7.0													
		Stiff LEAN CLAY, trace gravel, brown and gray (CL)		2				9.0	2000*							
565.55			10.5													
		End of Boring at 10.5 feet The water level elevation in Lake Saint Clair at the time of the topographic survey (June 1 and June 2, 2021) was 576.05 feet per NAVD88.														

GROUNDWATER READINGS

First Encountered: n/a
Upon Completion: n/a

BORING LOCATION INFORMATION

Latitude: 42.4572059
Longitude: -82.873319

Coordinates/GSE determined by:

KEY

Torvane
* Penetrometer
<> Disturbed Sample

Drilling Company: 7NT

Drill Rig: none

Logged By: S. Batshon

Drilling Method: Direct Push

Method Notes:

Hammer Type: Manual

Backfilled With: None. hole collapsed upon probe removal.

Checked By: JA

QA/QC By: JA

Remarks:

Sediment probe coordinates are based on
hand held GPS unit. Unconfined compressive
strength may not be reliable since sample is
disturbed.



Somat Engineering Inc.

Ford Cove Restoration Feasibility Study
Grosse Pointe Shores, Michigan

PROJECT NO. 2021017A DATE STARTED: 5/24/2021 DATE COMPLETED: 5/24/2021 LOG OF TEST BORING P-07

LOG OF SOIL PROFILE			FIELD DATA							LABORATORY DATA							▼ SPT N VALUE ▼			
ELEVATION ft			DEPTH (ft)	SAMPLE NO.	SAMPLE RECOVERY (in)	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200	10	20	30	40		
															● MOISTURE CONTENT (%) ●					
															10	20	30	40		
															■ UCC STRENGTH (psf) ■					
															2000	4000	6000	8000		
		Ground Surface Elevation 576.05 ft	0																	
		Water																		
572.55			3.5																	
571.05		Sediment - WELL GRADED SAND with silt and pieces of wood, few gravel, trace shells, black and gray, wet (SW-SM)	5.0	1				5.5						21						
568.55		Stiff LEAN CLAY, trace gravel, gray (CL)	7.5	2				7.5	2000*											
		End of Boring at 7.5 feet The water level elevation in Lake Saint Clair at the time of the topographic survey (June 1 and June 2, 2021) was 576.05 feet per NAVD88.	10																	

GROUNDWATER READINGS

First Encountered: n/a
Upon Completion: n/a

BORING LOCATION INFORMATION

Latitude: 42.4560922
Longitude: -82.871476

Coordinates/GSE determined by:

KEY

Torvane
* Penetrometer
<> Disturbed Sample

Drilling Company: 7NT

Drill Rig: none

Logged By: S. Batshon

Drilling Method: Direct Push

Method Notes:

Hammer Type: Manual

Backfilled With: None. hole collapsed upon probe removal.

Checked By: JA

QA/QC By: JA

Remarks:

Sediment probe coordinates are based on
hand held GPS unit. Unconfined compressive
strength may not be reliable since sample is
disturbed.



Somat Engineering Inc.

Ford Cove Restoration Feasibility Study
Grosse Pointe Shores, Michigan

PROJECT NO. 2021017A DATE STARTED: 5/24/2021 DATE COMPLETED: 5/24/2021 LOG OF TEST BORING HA-08

LOG OF SOIL PROFILE			FIELD DATA			LABORATORY DATA						▼ SPT N VALUE ▼			
ELEVATION ft			DEPTH (ft)	SAMPLE NO.	SAMPLE RECOVERY (in)	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200	10 20 30 40
		Ground Surface Elevation 578.5 ft	0												10 20 30 40
		Sandy TOPSOIL, brown, moist													● MOISTURE CONTENT (%) ●
577.00			1.5												10 20 30 40
		SILTY CLAY, black (CL-ML)													■ UCC STRENGTH (psf) ■
576.00			2.5	1				3.5						79	2000 4000 6000 8000
		Stiff LEAN CLAY, gray (CL)													
573.00			5.5	2				5.5	2000*						
		End of Boring at 5.5 feet The water level elevation in Lake Saint Clair at the time of the topographic survey (June 1 and June 2, 2021) was 576.05 feet per NAVD88.													
			10												

GROUNDWATER READINGS

First Encountered: none
Upon Completion: none

BORING LOCATION INFORMATION

Latitude: 42.4573754
Longitude: -82.8716406

Coordinates/GSE determined by:

KEY

Torvane
* Penetrometer
<> Disturbed Sample

Drilling Company: 7NT

Drill Rig: none
Logged By: S. Batshon
Drilling Method: Hand Auger
Method Notes:

Hammer Type: Manual
Backfilled With: Cuttings

Checked By: JA
QA/QC By: JA

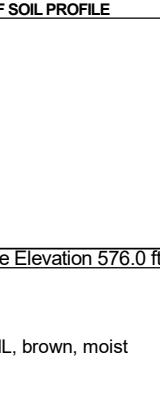
Remarks:

Hand auger coordinates are based on hand held GPS unit. Ground surface elevation estimated based on topographic survey. Unconfined compressive strength may not be reliable since sample is disturbed.



Somat Engineering Inc.

**Ford Cove Restoration Feasibility Study
Grosse Pointe Shores, Michigan**

LOG OF SOIL PROFILE			FIELD DATA				LABORATORY DATA							
ELEVATION ft			DEPTH (ft)	SAMPLE NO.	SAMPLE RECOVERY (in)	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	▼ SPT N VALUE ▼					
									● MOISTURE CONTENT (%) ●					
									■ UCC STRENGTH (psf) ■					
									10	20	30	40		
									10	20	30	40		
									2000	4000	6000	8000		
		Ground Surface Elevation 576.0 ft	0											
574.50		Sandy TOPSOIL, brown, moist	1.5											
573.50		SILTY CLAY, trace organics, black (CL-ML)	2.5	1				3.5						
		Stiff LEAN CLAY, gray (CL)	5	2				5.5	2000*					
				3				7.5	2000*					
567.50			8.5	4				8.5	2000*					
		End of Boring at 8.5 feet The water level elevation in Lake Saint Clair at the time of the topographic survey (June 1 and June 2, 2021) was 576.05 feet per NAVD88.	10											

First Encountered: none
Upon Completion: none

Latitude: 42.4589076
Longitude: -82.8749198

KEY

Torvane
* Penetrometer
<> Disturbed Sample

Drill Rig: none
Logged By: S. Batshon
Drilling Method: Hand Auger
Method Notes:
Hammer Type: Manual
Backfilled With: Cuttings
Checked By: JA
QA/QC By: JA

Remarks:
Hand auger coordinates are based on hand held GPS unit. Ground surface elevation estimated based on topographic survey.
Unconfined compressive strength may not be reliable since sample is disturbed.



PAGE 1 of 1



GENERAL NOTES

Unified Soil Classification System (USCS) ASTM D2488 (Modified)

DRILLING & SAMPLING SYMBOLS:

SS: Split Spoon – 1 3/8" I.D., 2" O.D. (standard)
S : Split Spoon – non-standard size, as noted
ST: Thin-Walled Tube – 3" O.D., (unless otherwise noted)
LS: Liner Sample
PA: Power Auger
HA: Hand Auger
AU: Auger Sample
BS: Bulk Sample
HSA: Hollow Stem Auger
DP: Direct Push

PS: Piston Sample
PT: Pitcher Sample
WS: Wash Sample
RC: Rock Core with diamond bit, NX size, (unless otherwise noted)
RB: Rock Bit/Roller Bit
WR: Wash Rotary
NR: No Recovery
VS: Vane Shear Test

Standard Penetration Test Resistance, N-Value: Sum of 2nd and 3rd 6-inch increments, in blows per foot of a 140-pound hammer falling 30 inches and driving an 18-inch long, 2-inch OD split spoon.

WATER LEVEL MEASUREMENT:

Water levels indicated on the boring logs are the levels measured in the borings at the times indicated. In pervious soils, the indicated levels may reflect the location of a groundwater table. In low permeability soils (clays and silts), the accurate determination of groundwater levels may not be possible with only short-term observations. Groundwater levels at times and locations other than when and where individual borings were performed could vary.

DESCRIPTIVE SOIL CLASSIFICATION:

Soil classification is based on the Unified Soil Classification (USC) System and ASTM Standards D-2487 and D-2488. Coarse-grained soils have more than 50% of their dry weight retained on a #200 sieve; they are described as: gravel or sand. Fine-grained soils have less than 50% of their dry weight retained on a #200 sieve; they are generally described as: clays, if they are plastic, and silts, if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their apparent in-place density and fine-grained soils on the basis of their apparent in-place density (silty soils) or consistency (clayey soils).

CONSISTENCIES OF COHESIVE SOILS:

The pocket penetrometer, pocket torvane, and in-situ vane shear test results are converted into an estimated unconfined compressive strength, in pounds per square feet (psf), for presentation on the logs. The unconfined compressive strength is estimated to be about two times the shear strength.

DESCRIPTORS OF MINOR CONSTITUENTS

Primary Constituent	Fine Grained (Silt & Clay)	Coarse Grained (Sand & Gravel)	
Descriptor of Other Constituents	Relative Portion of Coarse Grained Soils as a % of Dry Weight	Relative Portion of Fine Grained Soils as a % of Dry Weight	Relative Portion of Coarse Grained Soils as a % of Dry Weight
Trace	<5%	<5%	<5%
Few	≥5% - <15%	N/A	≥5% - <15%
With	≥15% - <30%	≥5% - 12%	≥15%
Modifier	≥30%	>12%	N/A

FINE-GRAINED SOILS

COARSE-GRAINED SOILS

Unconfined Compressive Strength Q_u , psf	Consistency	N-Value	Apparent Density
< 500	Very Soft	0 – 4	Very Loose
500 - <1,000	Soft	5 – 9	Loose
1,000 - <2,000	Medium	10 – 29	Medium Dense
2,000 - <4,000	Stiff	30 – 49	Dense
4,000 - <8,000	Very Stiff	50 – 80	Very Dense
≥ 8,000	Hard	>80	Extremely Dense

DEFINITIONS OF PAVEMENT CONDITION

Condition	Description
Good	ACC: Very slight or no raveling, surface shows some traffic wear. Longitudinal cracks and Transverse cracks (open 1/4 inch). No patching or very few patches in excellent condition.
	PCC: Moderate scaling in several locations. A few isolated surface spalls. Shallow reinforcement causing cracks. Several corner cracks, tight or well sealed. Open (1/4 inch wide) longitudinal or transverse joints.
Fair	ACC: Severe surface raveling. Multiple longitudinal and transverse cracking with slight raveling. Longitudinal cracking in wheel path. Block cracking (over 50% of surface). Patching in fair condition. Slight rutting or distortions (1/2 inch deep or less).
	PCC: Severe polishing, scaling, map cracking, or spalling over 50% of the area. Joints and cracks show moderate to severe spalling. Pumping and faulting of joints (1/2 inch with fair ride. Several slabs have multiple transverse or meander cracks with moderate spalling.
Poor	ACC: Alligator cracking (over 25% of surface). Severe distortions (over 2 inches deep) Extensive patching in poor condition. Potholes.
	PCC: Extensive slab cracking, severely spalled and patched. Joints failed. Patching in very poor condition. Severe and extensive settlements or frost heaves.

DEFINITIONS OF STRUCTURAL AND DEPOSITIONAL FEATURES

Term	Definition
Parting	≤ 1/16 inch (1.6 mm) thick
Seam	> 1/16 inch (1.6 mm) → 1/2 inch (12.7 mm) thick
Layer	> 1/2 inch (12.7 mm) to ≤ 12 inches (305 mm) thick
Pocket	Small, erratic deposits of limited lateral extent
Lens	Lenticular deposit
Lensed	Inclusion of small pockets of different soils, such as small lenses of sand scattered through a mass of clay
Varved	Alternating partings or seams (1 mm – 12 mm) of silt and/or clay and sometimes fine sand
Stratified	Alternating layers of varying material or color with layers ≥ 6 mm thick
Laminated	Alternating layers of varying material or color with layers < 6 mm thick
Fissured	Contains shears or separations along planes of weakness
Slickensided	Shear planes appear polished or glossy, sometimes striated
Blocky	Cohesive soil that can be broken down into small angular lumps which resist further breakdown
Homogeneous	Same color and appearance throughout
Occasional	One or less per foot (305 mm) of thickness
Frequent	More than one per foot (305 mm) of thickness
Interbedded	Applied to strata of soil lying between or alternating with other strata of a different nature

GRAIN SIZE TERMINOLOGY

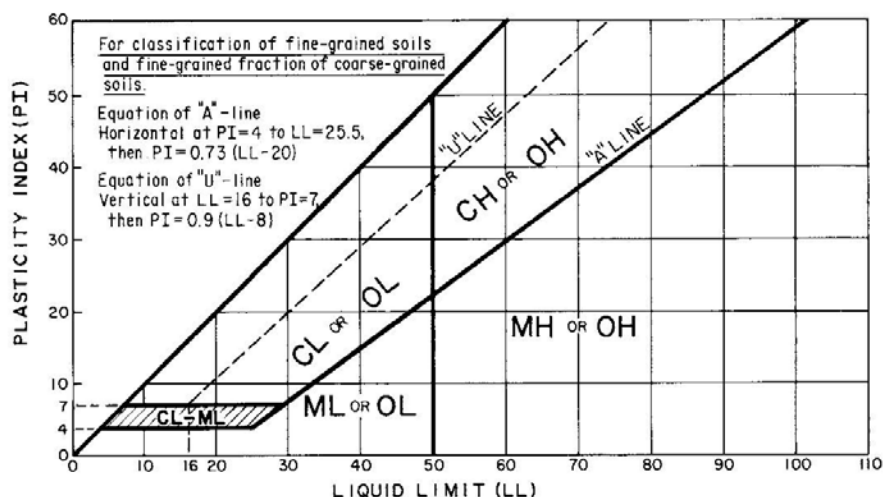
Major Component of Sample	Size Range
Boulders	≥ 12" (300 mm)
Cobbles	< 12" - 3" (300 mm – 75 mm)
Gravel - Coarse	< 3" - 3/4" (75 mm – 19 mm)
Gravel - Fine	< 3/4" - #4 (19 mm – 4.75 mm)
Sand - Coarse	< #4 - #10 (4.75 mm – 2 mm)
Sand - Medium	< #10 - #40 (2 mm - 0.425 mm)
Sand - Fine	< #40 - #200 (0.425 mm - 0.074 mm)
Silt	< 0.074 mm - 0.005 mm
Clay	< 0.005 mm



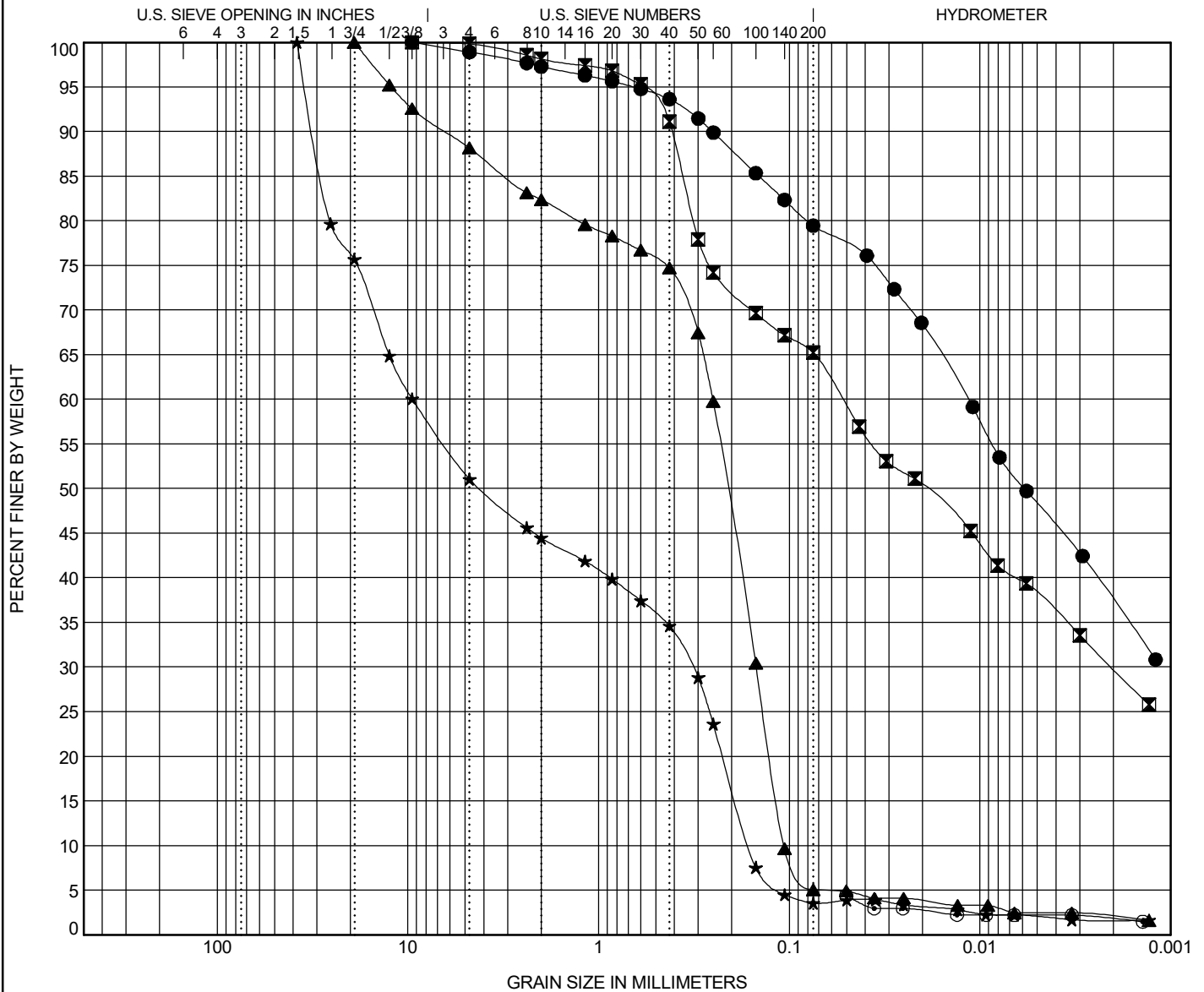
GENERAL NOTES

Unified Soil Classification System (USCS) ASTM D2487

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests ^A				Soil Classification	
				Group Symbol	Group Name <i>B</i>
COARSE-GRAINED More than 50 % retained on No. 200 sieve	Gravels (More than 50 % of coarse fraction retained on No. 4 sieve)	Clean Gravels	$Cu \geq 4$ and $1 \leq Cc \leq 3^D$	GW	Well-graded gravel ^E
		(Less than 5% fines ^C)	$Cu < 4$ and/or $[Cc < 1 \text{ or } Cc > 3]^D$	GP	Poorly graded gravel ^E
		Gravels with Fines	Fines classify as ML or MH	GM	Silty gravel ^{E,F,G}
	Sands (50 % or more of coarse fraction passes No. 4 sieve)	(More than 12 % fines ^C)	Fines classify as CL or CH	GC	Clayey gravel ^{E,F,G}
		Clean Sands	$Cu \geq 6$ and $1 \leq Cc \leq 3^D$	SW	Well-graded sand ^I
		(Less than 5 % fines ^H)	$Cu < 6$ and/or $[Cc < 1 \text{ or } Cc > 3]^D$	SP	Poorly graded sand ^I
FINE-GRAINED SOILS 50 % or more passes the No. 200 sieve	Silts and Clays Liquid limit less than 50	inorganic	$PI > 7$ and plots on or above "A" line ^J	CL	Lean clay ^{K,L,M}
			$PI < 4$ or plots below "A" line ^J	ML	Silt ^{K,L,M}
		organic	(Liquid Limit - oven dried) / (Liquid Limit - not dried) < 0.75	OL	Organic clay ^{K,L,M,N} Organic silt ^{K,L,M,O}
	Silts and Clays Liquid limit more than 50	inorganic	PI plots on or above "A" line	CH	Fat clay ^{K,L,M}
			PI plots below "A" line	MH	Elastic silt ^{K,L,M}
		organic	(Liquid Limit - oven dried) / (Liquid Limit - not dried) < 0.75	OH	Organic clay ^{K,L,M,P} Organic silt ^{K,L,M,Q}
HIGHLY ORGANIC SOILS Primarily organic matter, dark in color, and organic odor				Pt	Peat
^A Based on the material passing the 3-in. (75-mm) sieve. ^B If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name. ^C Gravels with 5 to 12 % fines require dual symbols: GW-GM well-graded gravel with silt GW-GC well-graded gravel with clay GP-GM poorly graded gravel with silt GP-GC poorly graded gravel with clay ^D $Cu = D_{60}/D_{10}$ $Cc = (D_{30})^2 / (D_{10} \times D_{60})$ ^E If soil contains ≥ 15 % sand, add "with sand" to group name. ^F If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM. ^G If fines are organic, add "with organic fines" to group name. ^H Sands with 5 to 12 % fines require dual symbols: SW-SM well-graded sand with silt SW-SC well-graded sand with clay SP-SM poorly graded sand with silt SP-SC poorly graded sand with clay ^I If soil contains ≥ 15 % gravel, add "with gravel" to group name. ^J If Atterberg limits plot in hatched area, soil is a CL-ML, silty clay. ^K If soil contains 15 to <30 % plus No. 200, add "with sand" or "with gravel," whichever is predominant. ^L If soil contains ≥ 30 % plus No. 200, predominantly sand, add "sand " to group name. ^M If soil contains ≥ 30 % plus No. 200, predominantly gravel, add "gravelly" to group name. ^N $PI \geq 4$ and plots on or above "A" line. ^O $PI < 4$ or plots below "A" line. ^P PI plots on or above "A" line. ^Q PI plots below "A" line.					

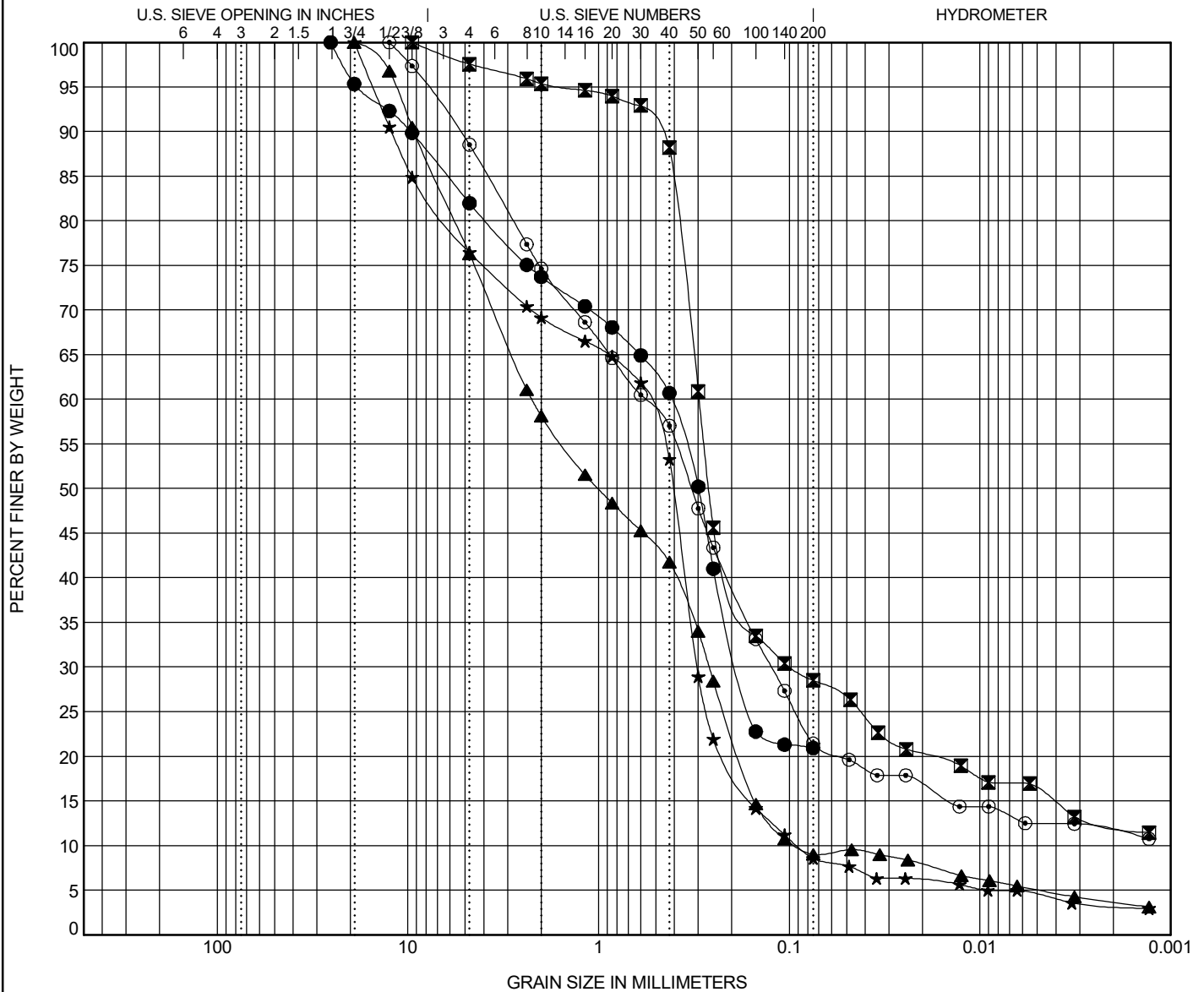


Order of Classification: 1) Consistency or Apparent Density, 2) Type of Soil, 3) Minor Soil Type(s), 4) Inclusions, 5) Layered Soils, 6) Color, 7) Water Content, 8) USCS Symbol, 9) Geological Name



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	Depth ft.	Remarks					LL	PL	PI	Cc	Cu
● HA-08	2.0										
☒ HA-09	2.0										
▲ P-01	2.0	Shells throughout specimen								0.83	2.36
★ P-02	2.5	Specimen contained shells below 3/8-inch sieve								0.07	58.27
◎ P-03	3.0	Specimen contained shells below 3/8-inch sieve									
Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay		
● HA-08	2.0	9.5	0.012			1.1	19.4	31.2	48.3		
☒ HA-09	2.0	9.5	0.053	0.002		0.2	34.6	27.1	38.2		
▲ P-01	2.0	19.1	0.252	0.149	0.107	11.8	83.1	2.6	2.4		
★ P-02	2.5	38.1	9.456	0.322	0.162	48.9	47.5	1.5	2.0		
◎ P-03	3.0								2.2		



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	Depth ft.	Remarks					LL	PL	PI	Cc	Cu
● P-03	4.5										
☒ P-04	5.5	Shells, vegetation, wood pieces throughout									
▲ P-05	3.0	Shells, vegetation, wood pieces throughout								0.48	34.39
★ P-06	5.0	Shells, vegetation, wood pieces throughout								1.84	6.15
⊙ P-07	3.5	Specimen contained wood pieces									
Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt		%Clay	
● P-03	4.5	25.4	0.415	0.184		18.0	61.1	20.9			
☒ P-04	5.5	9.5	0.297	0.098		2.4	69.1	12.2		16.3	
▲ P-05	3.0	19.1	2.235	0.263	0.065	23.7	67.3	4.0		5.0	
★ P-06	5.0	19.1	0.557	0.305	0.091	23.5	67.9	4.1		4.4	
⊙ P-07	3.5	12.5	0.571	0.124		11.5	67.1	9.0		12.5	

Table 1a
Soil Sample Analytical Results - Residential
Ford Cove Restoration Feasibility Study
Project Number: 2021017a

Parameters*					Sample Identification	PO1-524	PO2-524	PO3-524	PO4 PO5-524	PO6 PO7-524	HA08-524	HA09-524
					Depth of Water	2'	2.5'	4.5'	3'-5.5'	3.5'-5'	NA	NA
*(Refer to detailed laboratory report for method reference data)	Chemical Abstract Service Number	Statewide Default Background Level	Particulate Soil Inhalation Criteria	Direct Contact Criteria	Sample Depth (below sediment/ground surface)	0-2'	2-4'	0-1'	0-2'	0-2'	1.5-3.5'	1.5-3.5'
					Soil Type	Sediment - Sand	Sediment - Sand	Sediment - Sand	Sediment - Sand/Clay	Sediment - Sand/Clay	Clay	Clay
					Collection Date	05/24/21	05/24/21	05/24/21	05/24/21	05/24/21	05/24/21	05/24/21
Metals												
Arsenic	7440-38-2	5,800	7.2E+5	7,600		2,300	3,200	4,800	3,500	2,300	5,300	12,000
Barium (B)	7440-39-3	75,000	3.3E+8	3.7E+7		8,300	29,000	16,000	32,000	10,000	74,000	77,000
Cadmium (B)	7440-43-9	1,200	1.7E+6	5.5E+5		240	89	160	160	78	300	560
Chromium, Total	7440-47-3	18,000 (total)	2.6E+5	2.5E+6		5,800	7,300	17,000	8,300	4,800	16,000	15,000
Copper (B)	7440-50-8	32,000	1.3E+8	2.0E+7		5,200	4,900	5,000	13,000	8,800	16,000	28,000
Lead (B)	7439-92-1	21,000	1.0E+8	4.0E+5		11,000	5,400	15,000	18,000	14,000	11,000	240,000
Mercury, Total	7439-97-6	130	2.0E+7	1.6E+5		<50	<50	<50	<50	<50	<50	79
Selenium (B)	7782-49-2	410	1.3E+8	2.6E+6		<200	250	<200	370	210	730	660
Silver (B)	7440-22-4	1,000	6.7E+6	2.5E+6		<100	<100	<100	<100	<100	<100	<100
Zinc (B)	7440-66-6	47,000	ID	1.7E+8		27,000	20,000	22,000	26,000	20,000	50,000	110,000
PCBs												
PCB, Aroclor 1016	12674-11-2	NA	NA	NA		<100	<100	<100	<100	<100	<100	<100
PCB, Aroclor 1221	11104-28-2	NA	NA	NA		<100	<100	<100	<100	<100	<100	<100
PCB, Aroclor 1232	11141-16-5	NA	NA	NA		<100	<100	<100	<100	<100	<100	<100
PCB, Aroclor 1242	53469-21-9	NA	NA	NA		730	<100	<100	<100	<100	<100	<100
PCB, Aroclor 1248	12672-29-6	NA	NA	NA		<100	<100	<100	<100	<100	<100	<100
PCB, Aroclor 1254	11097-69-1	NA	NA	NA		1,300	<100	<100	<100	<100	<100	<410
PCB, Aroclor 1260	11096-82-5	NA	NA	NA		<100	<100	<100	<100	<100	<100	<100
PCB, Aroclor 1262	37324-23-5	NA	NA	NA		<100	<100	<100	<100	<100	<100	<100
PCB, Aroclor 1268	11100-14-4	NA	NA	NA		<100	<100	<100	<100	<100	<100	<100
Polychlorinated biphenyls (PCBs) (J,T)	1336-36-3	NA	5.2E+6	(T)		2,030	<100	<100	<100	<100	<100	<410
Semivolatiles, PNAs												
Acenaphthene	83-32-9	NA	1.4E+10	4.1E+7		<330	<330	<330	<330	<330	<330	<330
Acenaphthylene	208-96-8	NA	2.3E+9	1.6E+6		<330	<330	<330	<330	<330	<330	<330
Anthracene	120-12-7	NA	6.7E+10	2.3E+8		<330	<330	780	<330	<330	<330	360
Benzo(a)anthracene (Q)	56-55-3	NA	ID	20,000		<330	<330	2,200	<330	690	<330	1,400
Benzo(a)pyrene (Q)	50-32-8	NA	1.5E+6	2,000		<330	<330	2,100	<330	570	<330	1,400
Benzo(b)fluoranthene (Q)	205-99-2	NA	ID	20,000		<330	<330	2,600	<330	780	<330	2,000
Benzo(g,h,i)perylene	191-24-2	NA	8.0E+8	2.5E+6		<330	<330	1,200	<330	<330	<330	1,000
Benzo(k)fluoranthene (Q)	207-08-9	NA	ID	2.0E+5		<330	<330	930	<330	<330	<330	670
Chrysene (Q)	218-01-9	NA	ID	2.0E+6		<330	<330	2,000	<330	720	<330	1,400
Dibenzo(a,h)anthracene (Q)	53-70-3	NA	ID	2,000		<330	<330	<330	<330	<330	<330	<330
Fluoranthene	206-44-0	NA	9.3E+9	4.6E+7		<330	<330	6,300	360	1,900	<330	2,900
Fluorene	86-73-7	NA	9.3E+9	2.7E+7		<330	<330	390	<330	<330	<330	<330
Indeno(1,2,3-cd)pyrene (Q)	193-39-5	NA	ID	20,000		<330	<330	1,400	<330	360	<330	1,100
2-Methylnaphthalene	91-57-6	NA	6.7E+8	8.1E+6		<330	<330	<330	<330	<330	<330	<330
Naphthalene	91-20-3	NA	2.0E+8	1.6E+7		<330	<330	<330	<330	<330	<330	<330
Phenanthrene	85-01-8	NA	6.7E+6	1.6E+6		<330	<330	2,700	<330	790	<330	1,400
Pyrene	129-00-0	NA	6.7E+9	2.9E+7		<330	<330	4,600	<330	1,400	<330	2,300

Table 1b
Soil Sample Analytical Results - Nonresidential
Ford Cove Restoration Feasibility Study
Project Number: 2021017a

Parameters*					Sample Identification	PO1-524	PO2-524	PO3-524	PO4 PO5-524	PO6 PO7-524	HA08-524	HA09-524
*(Refer to detailed laboratory report for method reference data)	Chemical Abstract Service Number	Statewide Default Background Level	Particulate Soil Inhalation Criteria	Direct Contact Criteria	Depth of Water	2'	2.5'	4.5	3'-5.5'	3.5'-5'	NA	NA
					Sample Depth (below sediment/ ground surface)	0-2'	2-4'	0-1'	0-2'	0-2'	1.5-3.5'	1.5-3.5'
					Soil Type	Sediment - Sand	Sediment - Sand	Sediment - Sand	Sediment - Sand/Clay	Sediment - Sand/Clay	Clay	Clay
					Collection Date	05/24/21	05/24/21	05/24/21	05/24/21	05/24/21	05/24/21	05/24/21
Metals												
Arsenic	7440-38-2	5,800	9.1E+5	37,000		2,300	3,200	4,800	3,500	2,300	5,300	12,000
Barium (B)	7440-39-3	75,000	1.5E+8	1.3E+8		8,300	29,000	16,000	32,000	10,000	74,000	77,000
Cadmium (B)	7440-43-9	1,200	2.2E+6	2.1E+6		240	89	160	160	78	300	560
Chromium, Total	7440-47-3	18,000 (total)	2.4E+5	9.2E+6		5,800	7,300	17,000	8,300	4,800	16,000	15,000
Copper (B)	7440-50-8	32,000	5.9E+7	7.3E+7		5,200	4,900	5,000	13,000	8,800	16,000	28,000
Lead (B)	7439-92-1	21,000	4.4E+7	9.0E+5 (DD)		11,000	5,400	15,000	18,000	14,000	11,000	240,000
Mercury, Total	7439-97-6	130	8.8E+6	5.8E+5		<50	<50	<50	<50	<50	<50	79
Selenium (B)	7782-49-2	410	5.9E+7	9.6E+6		<200	250	<200	370	210	730	660
Silver (B)	7440-22-4	1,000	2.9E+6	9.0E+6		<100	<100	<100	<100	<100	<100	<100
Zinc (B)		47,000	ID	6.3E+8		27,000	20,000	22,000	26,000	20,000	50,000	110,000
PCBs												
PCB, Aroclor 1016	12674-11-2	NA	NA	NA		<100	<100	<100	<100	<100	<100	<100
PCB, Aroclor 1221	11104-28-2	NA	NA	NA		<100	<100	<100	<100	<100	<100	<100
PCB, Aroclor 1232	11141-16-5	NA	NA	NA		<100	<100	<100	<100	<100	<100	<100
PCB, Aroclor 1242	53469-21-9	NA	NA	NA		730	<100	<100	<100	<100	<100	<100
PCB, Aroclor 1248	12672-29-6	NA	NA	NA		<100	<100	<100	<100	<100	<100	<100
PCB, Aroclor 1254	11097-69-1	NA	NA	NA		1,300	<100	<100	<100	<100	<100	<410
PCB, Aroclor 1260	11096-82-5	NA	NA	NA		<100	<100	<100	<100	<100	<100	<100
PCB, Aroclor 1262	37324-23-5	NA	NA	NA		<100	<100	<100	<100	<100	<100	<100
PCB, Aroclor 1268	11100-14-4	NA	NA	NA		<100	<100	<100	<100	<100	<100	<100
Polychlorinated biphenyls (PCBs) (J,T)	1336-36-3	NA	5.2E+6	(T)		2,030	<100	<100	<100	<100	<100	<410
Semivolatiles, PNAs												
Acenaphthene	83-32-9	NA	6.2E+9	1.3E+8		<330	<330	<330	<330	<330	<330	<330
Acenaphthylene	208-96-8	NA	1.0E+9	5.2E+6		<330	<330	<330	<330	<330	<330	<330
Anthracene	120-12-7	NA	2.9E+10	7.3E+8		<330	<330	780	<330	<330	<330	360
Benzo(a)anthracene (Q)	56-55-3	NA	ID	80,000		<330	<330	2,200	<330	690	<330	1,400
Benzo(a)pyrene (Q)	50-32-8	NA	1.9E+6	8,000		<330	<330	2,100	<330	570	<330	1,400
Benzo(b)fluoranthene (Q)	205-99-2	NA	ID	80,000		<330	<330	2,600	<330	780	<330	2,000
Benzo(g,h,i)perylene	191-24-2	NA	3.5E+8	7.0E+6		<330	<330	1,200	<330	<330	<330	1,000
Benzo(k)fluoranthene (Q)	207-08-9	NA	ID	8.0E+5		<330	<330	930	<330	<330	<330	670
Chrysene (Q)	218-01-9	NA	ID	8.0E+6		<330	<330	2,000	<330	720	<330	1,400
Dibenzo(a,h)anthracene (Q)	53-70-3	NA	ID	8,000		<330	<330	<330	<330	<330	<330	<330
Fluoranthene	206-44-0	NA	4.1E+9	1.3E+8		<330	<330	6,300	360	1,900	<330	2,900
Fluorene	86-73-7	NA	4.1E+9	8.7E+7		<330	<330	390	<330	<330	<330	<330
Indeno(1,2,3-cd)pyrene (Q)	193-39-5	NA	ID	80,000		<330	<330	1,400	<330	360	<330	1,100
2-Methylnaphthalene	91-57-6	NA	2.9E+8	2.6E+7		<330	<330	<330	<330	<330	<330	<330
Naphthalene	91-20-3	NA	2.0E+8	1.6E+7		<330	<330	<330	<330	<330	<330	<330
Phenanthrene	85-01-8	NA	2.9E+6	5.2E+6		<330	<330	2,700	<330	790	<330	1,400
Pyrene	129-00-0	NA	2.9E+9	8.4E+7		<330	<330	4,600	<330	1,400	<330	2,300

Soil Sample Analytical Results

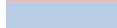
Ford Cove Restoration Feasibility Study

Project Number: 2021017a

Michigan Department of EGLE Part 201 Criteria or Part 213 Screening Levels, revised June 25, 2018.

Bold = Detected analytical result

 Residential exceedance

 Nonresidential exceedance

* Statewide default background may be substituted for risk-based cleanup criterion if default background is higher.

EGLE = Environment, Great Lakes, and Energy

ID = Insufficient data to develop criterion

NA = Not Available

ND = Not Detected

NLL = Hazardous substance is not likely to leach under most soil conditions.

NLV = Hazardous substance is not likely to volatilize under most conditions.

NT = Not Tested

PNAs = Polynuclear Aromatic Hydrocarbons

Lettered footnotes in parentheses (e.g. (B)) are defined by EGLE Part 201 Rule 299.49 Footnotes for Generic Cleanup Criteria Tables.

1 of 1

SVOC = Semi-Volatile Organic Compound

RBSLs = Risk-based Screening Levels

VOC = Volatile Organic Compound

(M) = Calculated criterion is below the analytical target detection limit, therefore, the criterion defaults to the target detection limit.

(X) = The GSI criterion shown in the generic cleanup criteria tables is not protective for surface water that is used as a drinking water source.

(G) = Groundwater surface water interface (GSI) criterion depends on the pH or water hardness, or both, of the receiving surface water; generic values have been calculated based on a water hardness of 150 mg/L for the Lower Peninsula. The final chronic value (FCV) for the protection of aquatic life shall be calculated based on the pH or hardness of the receiving water.

(DD) = Hazardous substance causes developmental effects. Residential direct contact criteria are protective of both prenatal and postnatal exposure. Nonresidential direct contact criteria are protective for a pregnant adult receptor.

(C) = The criterion developed under R 299.20 to R 299.26 exceeds the chemical- specific soil saturation screening level (Csat). The person proposing or implementing response activity shall document whether additional response activity is required to control free-phase liquids or NAPL to protect against risks associated with free-phase liquids by using methods appropriate for the free-phase liquids present. Development of a site-specific Csat or methods presented in R 299.22, R 299.24(5), and R 299.26(8) may be conducted for the relevant exposure pathway



Friday, June 25, 2021

Fibertec Project Number: A01996 Amended
Project Identification: 2021017A /2021017A
Submittal Date: 05/26/2021

Ms. Stephanie Batshon
Somat Engineering
26445 Northline Rd
Taylor, MI 48180

Dear Ms. Batshon,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

This report was amended to remove sample -008 due to low sample volume and replaces the report sent 6/7/2021.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

A handwritten signature in black ink, appearing to read "Jacob Sutherland".

By Jacob Sutherland at 1:30 PM, Jun 25, 2021

For Daryl P. Strandbergh
Laboratory Director

Enclosures

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11766 E. Grand River
8660 S. Mackinaw Trail

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F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584

Client Identification:	Somat Engineering	Sample Description:	PO1-524	Chain of Custody:	197066
Client Project Name:	2021017A	Sample No:		Collect Date:	05/24/21
Client Project No:	2021017A	Sample Matrix:	Soil/Solid	Collect Time:	NA
Sample Comments:	Soil results have been calculated and reported on a dry weight basis unless otherwise noted.				
Definitions:	Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.				

Water (Moisture) Content Dried at 105 ± 5°C						Aliquot ID: A01996-001		Matrix: Soil/Solid			
Method: ASTM D2216-10						Description: PO1-524					
						Preparation		Analysis			
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)		22		%	1	1.0	06/01/21	MC210601	06/02/21	MC210601	DW

Michigan 10 Elements by ICP/MS					Aliquot ID: A01996-001	Matrix: Soil/Solid				
Method: EPA 0200.2/EPA 6020A					Description: PO1-524					
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	2300		µg/kg	100	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
2. Barium	8300		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
3. Cadmium	240		µg/kg	50	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
4. Chromium	5800		µg/kg	500	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
5. Copper	5200		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
6. Lead	11000		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
7. Selenium	U		µg/kg	200	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
8. Silver	U		µg/kg	100	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
9. Zinc	27000		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA

Mercury by CVAAS						Aliquot ID: A01996-001	Matrix: Soil/Solid			
Method: EPA 7471B						Description: PO1-524				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	U		ug/kg	50	10	06/01/21	PM21F01A	06/02/21	M721F02A	JLH

Polychlorinated Biphenyls (PCBs)					Aliquot ID: A01996-001	Matrix: Soil/Solid				
Method: EPA 3546/EPA 8082A					Description: PO1-524					
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F02A	BDA
2. Aroclor-1221	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F02A	BDA
3. Aroclor-1232	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F02A	BDA
4. Aroclor-1242	730		µg/kg	100	5.0	05/28/21	PS21E28B	06/04/21	SO21F04A	BDA
5. Aroclor-1248	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F02A	BDA
6. Aroclor-1254	1300		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F02A	BDA
7. Aroclor-1260	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F02A	BDA
‡ 8. Aroclor-1262	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F02A	BDA
‡ 9. Aroclor-1268	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F02A	BDA

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Client Identification:	Somat Engineering	Sample Description:	PO1-524	Chain of Custody:	197066
Client Project Name:	2021017A	Sample No:		Collect Date:	05/24/21
Client Project No:	2021017A	Sample Matrix:	Soil/Solid	Collect Time:	NA
Sample Comments:	Soil results have been calculated and reported on a dry weight basis unless otherwise noted.				
Definitions:	Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.				

Polynuclear Aromatic Hydrocarbons (PNAs)						Aliquot ID: A01996-001	Matrix: Soil/Solid			
Method: EPA 3546/EPA 8270E						Description: PO1-524				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Int.
1. Acenaphthene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
3. Anthracene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
9. Chrysene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
12. Fluorene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
15. Naphthalene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
16. Phenanthrene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
17. Pyrene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP

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Client Identification:	Somat Engineering	Sample Description:	PO2-524	Chain of Custody:	197066
Client Project Name:	2021017A	Sample No:		Collect Date:	05/24/21
Client Project No:	2021017A	Sample Matrix:	Soil/Solid	Collect Time:	NA
Sample Comments:	Soil results have been calculated and reported on a dry weight basis unless otherwise noted.				
Definitions:	Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.				

Water (Moisture) Content Dried at 105 ± 5°C						Aliquot ID: A01996-002	Matrix: Soil/Solid			
Method: ASTM D2216-10						Description: PO2-524				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	13		%	1	1.0	06/01/21	MC210601	06/02/21	MC210601	DW

Michigan 10 Elements by ICP/MS						Aliquot ID: A01996-002	Matrix: Soil/Solid			
Method: EPA 0200.2/EPA 6020A						Description: PO2-524				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	3200		µg/kg	100	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
2. Barium	29000		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
3. Cadmium	89		µg/kg	50	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
4. Chromium	7300		µg/kg	500	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
5. Copper	4900		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
6. Lead	5400		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
7. Selenium	250		µg/kg	200	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
8. Silver	U		µg/kg	100	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
9. Zinc	20000		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA

Mercury by CVAAS						Aliquot ID: A01996-002	Matrix: Soil/Solid			
Method: EPA 7471B						Description: PO2-524				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	U		µg/kg	50	10	06/01/21	PM21F01A	06/02/21	M721F02A	JLH

Polychlorinated Biphenyls (PCBs)						Aliquot ID: A01996-002	Matrix: Soil/Solid			
Method: EPA 3546/EPA 8082A						Description: PO2-524				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA
2. Aroclor-1221	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA
3. Aroclor-1232	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA
4. Aroclor-1242	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA
5. Aroclor-1248	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA
6. Aroclor-1254	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA
7. Aroclor-1260	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA
‡ 8. Aroclor-1262	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA
‡ 9. Aroclor-1268	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA

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Client Identification:	Somat Engineering	Sample Description:	PO2-524	Chain of Custody:	197066
Client Project Name:	2021017A	Sample No:		Collect Date:	05/24/21
Client Project No:	2021017A	Sample Matrix:	Soil/Solid	Collect Time:	NA
Sample Comments:	Soil results have been calculated and reported on a dry weight basis unless otherwise noted.				
Definitions:	Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.				

Polynuclear Aromatic Hydrocarbons (PNAs)						Aliquot ID: A01996-002	Matrix: Soil/Solid			
Method: EPA 3546/EPA 8270E						Description: PO2-524				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Int.
1. Acenaphthene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
3. Anthracene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
9. Chrysene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
12. Fluorene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
15. Naphthalene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
16. Phenanthrene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
17. Pyrene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP

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Client Identification:	Somat Engineering	Sample Description:	PO3-524	Chain of Custody:	197066
Client Project Name:	2021017A	Sample No:		Collect Date:	05/24/21
Client Project No:	2021017A	Sample Matrix:	Soil/Solid	Collect Time:	NA
Sample Comments:	Soil results have been calculated and reported on a dry weight basis unless otherwise noted.				
Definitions:	Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.				

Water (Moisture) Content Dried at 105 ± 5°C						Aliquot ID: A01996-003		Matrix: Soil/Solid			
Method: ASTM D2216-10						Description: PO3-524					
						Preparation		Analysis			
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)		14		%	1	1.0	06/01/21	MC210601	06/02/21	MC210601	DW

Michigan 10 Elements by ICP/MS					Aliquot ID: A01996-003		Matrix: Soil/Solid			
Method: EPA 0200.2/EPA 6020A					Description: PO3-524					
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	4800		µg/kg	100	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
2. Barium	16000		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
3. Cadmium	160		µg/kg	50	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
4. Chromium	17000		µg/kg	500	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
5. Copper	5000		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
6. Lead	15000		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
7. Selenium	U		µg/kg	200	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
8. Silver	U		µg/kg	100	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
9. Zinc	22000		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA

Mercury by CVAAS						Aliquot ID: A01996-003	Matrix: Soil/Solid			
Method: EPA 7471B						Description: PO3-524				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	U		µg/kg	50	10	06/01/21	PM21F01A	06/02/21	M721F02A	JLH

Polychlorinated Biphenyls (PCBs)					Aliquot ID: A01996-003	Matrix: Soil/Solid				
Method: EPA 3546/EPA 8082A					Description: PO3-524					
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aroclor-1016	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
2. Aroclor-1221	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
3. Aroclor-1232	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
4. Aroclor-1242	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
5. Aroclor-1248	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
6. Aroclor-1254	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
7. Aroclor-1260	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
‡ 8. Aroclor-1262	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
‡ 9. Aroclor-1268	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES

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Client Identification:	Somat Engineering	Sample Description:	PO3-524	Chain of Custody:	197066
Client Project Name:	2021017A	Sample No:		Collect Date:	05/24/21
Client Project No:	2021017A	Sample Matrix:	Soil/Solid	Collect Time:	NA
Sample Comments:	Soil results have been calculated and reported on a dry weight basis unless otherwise noted.				
Definitions:	Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.				

Polynuclear Aromatic Hydrocarbons (PNAs)						Aliquot ID: A01996-003	Matrix: Soil/Solid			
Method: EPA 3546/EPA 8270E						Description: PO3-524				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Int.
1. Acenaphthene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/02/21	S521F02A	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/02/21	S521F02A	GJP
3. Anthracene (SIM)	780		µg/kg	330	10	06/02/21	PS21E28B	06/02/21	S521F02A	GJP
4. Benzo(a)anthracene (SIM)	2200		µg/kg	330	10	06/02/21	PS21E28B	06/02/21	S521F02A	GJP
5. Benzo(a)pyrene (SIM)	2100		µg/kg	330	10	06/02/21	PS21E28B	06/02/21	S521F02A	GJP
6. Benzo(b)fluoranthene (SIM)	2600		µg/kg	330	10	06/02/21	PS21E28B	06/02/21	S521F02A	GJP
7. Benzo(ghi)perylene (SIM)	1200		µg/kg	330	10	06/02/21	PS21E28B	06/02/21	S521F02A	GJP
8. Benzo(k)fluoranthene (SIM)	930		µg/kg	330	10	06/02/21	PS21E28B	06/02/21	S521F02A	GJP
9. Chrysene (SIM)	2000		µg/kg	330	10	06/02/21	PS21E28B	06/02/21	S521F02A	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/02/21	S521F02A	GJP
11. Fluoranthene (SIM)	6300	F+	µg/kg	330	10	06/02/21	PS21E28B	06/02/21	S521F02A	GJP
12. Fluorene (SIM)	390		µg/kg	330	10	06/02/21	PS21E28B	06/02/21	S521F02A	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	1400		µg/kg	330	10	06/02/21	PS21E28B	06/02/21	S521F02A	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/02/21	S521F02A	GJP
15. Naphthalene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/02/21	S521F02A	GJP
16. Phenanthrene (SIM)	2700	F+	µg/kg	330	10	06/02/21	PS21E28B	06/02/21	S521F02A	GJP
17. Pyrene (SIM)	4600	F+	µg/kg	330	10	06/02/21	PS21E28B	06/02/21	S521F02A	GJP

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Client Identification:	Somat Engineering	Sample Description:	PO4 PO5-524	Chain of Custody:	197066
Client Project Name:	2021017A	Sample No:		Collect Date:	05/24/21
Client Project No:	2021017A	Sample Matrix:	Soil/Solid	Collect Time:	NA
Sample Comments:	Soil results have been calculated and reported on a dry weight basis unless otherwise noted.				
Definitions:	Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.				

Water (Moisture) Content Dried at 105 ± 5°C						Aliquot ID: A01996-004		Matrix: Soil/Solid			
Method: ASTM D2216-10						Description: PO4 PO5-524					
						Preparation		Analysis			
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)		21		%	1	1.0	06/01/21	MC210601	06/02/21	MC210601	DW

Michigan 10 Elements by ICP/MS					Aliquot ID: A01996-004	Matrix: Soil/Solid				
Method: EPA 0200.2/EPA 6020A					Description: PO4 PO5-524					
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	3500		µg/kg	100	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
2. Barium	32000		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
3. Cadmium	160		µg/kg	50	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
4. Chromium	8300		µg/kg	500	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
5. Copper	13000		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
6. Lead	18000		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
7. Selenium	370		µg/kg	200	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
8. Silver	U		µg/kg	100	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
9. Zinc	26000		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA

Mercury by CVAAS						Aliquot ID: A01996-004	Matrix: Soil/Solid			
Method: EPA 7471B						Description: PO4 PO5-524				
						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	U		µg/kg	50	10	06/01/21	PM21F01A	06/02/21	M721F02A	JLH

Polychlorinated Biphenyls (PCBs)					Aliquot ID: A01996-004	Matrix: Soil/Solid				
Method: EPA 3546/EPA 8082A					Description: PO4 PO5-524					
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
2. Aroclor-1221	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
3. Aroclor-1232	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
4. Aroclor-1242	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
5. Aroclor-1248	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
6. Aroclor-1254	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
7. Aroclor-1260	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
‡ 8. Aroclor-1262	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
‡ 9. Aroclor-1268	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES

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Client Identification:	Somat Engineering	Sample Description:	PO4 PO5-524	Chain of Custody:	197066
Client Project Name:	2021017A	Sample No:		Collect Date:	05/24/21
Client Project No:	2021017A	Sample Matrix:	Soil/Solid	Collect Time:	NA
Sample Comments:	Soil results have been calculated and reported on a dry weight basis unless otherwise noted.				
Definitions:	Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.				

Polynuclear Aromatic Hydrocarbons (PNAs)						Aliquot ID: A01996-004	Matrix: Soil/Solid			
Method: EPA 3546/EPA 8270E						Description: PO4 PO5-524				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Int.
1. Acenaphthene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
3. Anthracene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
9. Chrysene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
11. Fluoranthene (SIM)	360		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
12. Fluorene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
15. Naphthalene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
16. Phenanthrene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
17. Pyrene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP

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Analytical Laboratory Report
Laboratory Project Number: A01996
Laboratory Sample Number: A01996-005

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Date: 06/25/21

Client Identification:	Somat Engineering	Sample Description:	PO6 PO7-524	Chain of Custody:	197066
Client Project Name:	2021017A	Sample No:		Collect Date:	05/24/21
Client Project No:	2021017A	Sample Matrix:	Soil/Solid	Collect Time:	NA
Sample Comments:	Soil results have been calculated and reported on a dry weight basis unless otherwise noted.				
Definitions:	Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.				

Water (Moisture) Content Dried at 105 ± 5°C						Aliquot ID: A01996-005		Matrix: Soil/Solid			
Method: ASTM D2216-10						Description: PO6 PO7-524					
						Preparation		Analysis			
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)		26		%	1	1.0	06/01/21	MC210601	06/02/21	MC210601	DW

Michigan 10 Elements by ICP/MS					Aliquot ID: A01996-005	Matrix: Soil/Solid				
Method: EPA 0200.2/EPA 6020A					Description: PO6 PO7-524					
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	2300		µg/kg	100	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
2. Barium	10000		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
3. Cadmium	78		µg/kg	50	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
4. Chromium	4800		µg/kg	500	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
5. Copper	8800		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
6. Lead	14000		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
7. Selenium	210		µg/kg	200	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
8. Silver	U		µg/kg	100	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
9. Zinc	20000		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA

Mercury by CVAAS						Aliquot ID: A01996-005	Matrix: Soil/Solid			
Method: EPA 7471B						Description: PO6 PO7-524				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	U		µg/kg	50	10	06/01/21	PM21F01A	06/02/21	M721F02A	JLH

Polychlorinated Biphenyls (PCBs)					Aliquot ID: A01996-005	Matrix: Soil/Solid				
Method: EPA 3546/EPA 8082A					Description: PO6 PO7-524					
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA
2. Aroclor-1221	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA
3. Aroclor-1232	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA
4. Aroclor-1242	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA
5. Aroclor-1248	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA
6. Aroclor-1254	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA
7. Aroclor-1260	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA
‡ 8. Aroclor-1262	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA
‡ 9. Aroclor-1268	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA

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Client Identification:	Somat Engineering	Sample Description:	PO6 PO7-524	Chain of Custody:	197066
Client Project Name:	2021017A	Sample No:		Collect Date:	05/24/21
Client Project No:	2021017A	Sample Matrix:	Soil/Solid	Collect Time:	NA
Sample Comments:	Soil results have been calculated and reported on a dry weight basis unless otherwise noted.				
Definitions:	Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.				

Polynuclear Aromatic Hydrocarbons (PNAs)						Aliquot ID: A01996-005	Matrix: Soil/Solid			
Method: EPA 3546/EPA 8270E						Description: PO6 PO7-524				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Int.
1. Acenaphthene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
3. Anthracene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
4. Benzo(a)anthracene (SIM)	690		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
5. Benzo(a)pyrene (SIM)	570		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
6. Benzo(b)fluoranthene (SIM)	780		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
9. Chrysene (SIM)	720		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
11. Fluoranthene (SIM)	1900		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
12. Fluorene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	360		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
15. Naphthalene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
16. Phenanthrene (SIM)	790		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
17. Pyrene (SIM)	1400		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP

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Client Identification:	Somat Engineering	Sample Description:	HA08-524	Chain of Custody:	197066
Client Project Name:	2021017A	Sample No:		Collect Date:	05/24/21
Client Project No:	2021017A	Sample Matrix:	Soil/Solid	Collect Time:	NA
Sample Comments:	Soil results have been calculated and reported on a dry weight basis unless otherwise noted.				
Definitions:	Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.				

Water (Moisture) Content Dried at 105 ± 5°C						Aliquot ID: A01996-006		Matrix: Soil/Solid			
Method: ASTM D2216-10						Description: HA08-524					
						Preparation		Analysis			
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)		20		%	1	1.0	06/01/21	MC210601	06/02/21	MC210601	DW

Michigan 10 Elements by ICP/MS					Aliquot ID: A01996-006	Matrix: Soil/Solid				
Method: EPA 0200.2/EPA 6020A					Description: HA08-524					
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	5300		µg/kg	100	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
2. Barium	74000		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
3. Cadmium	300		µg/kg	50	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
4. Chromium	16000		µg/kg	500	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
5. Copper	16000		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
6. Lead	11000		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
7. Selenium	730		µg/kg	200	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
8. Silver	U		µg/kg	100	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
9. Zinc	50000		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA

Mercury by CVAAS						Aliquot ID: A01996-006	Matrix: Soil/Solid			
Method: EPA 7471B						Description: HA08-524				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	U		µg/kg	50	10	06/01/21	PM21F01A	06/02/21	M721F02A	JLH

Polychlorinated Biphenyls (PCBs)					Aliquot ID: A01996-006	Matrix: Soil/Solid				
Method: EPA 3546/EPA 8082A					Description: HA08-524					
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
2. Aroclor-1221	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
3. Aroclor-1232	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
4. Aroclor-1242	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
5. Aroclor-1248	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
6. Aroclor-1254	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
7. Aroclor-1260	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
‡ 8. Aroclor-1262	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES
‡ 9. Aroclor-1268	U		µg/kg	100	5.0	05/28/21	PS21E28B	05/28/21	SF21E28B	JES

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Client Identification:	Somat Engineering	Sample Description:	HA08-524	Chain of Custody:	197066
Client Project Name:	2021017A	Sample No:		Collect Date:	05/24/21
Client Project No:	2021017A	Sample Matrix:	Soil/Solid	Collect Time:	NA
Sample Comments:	Soil results have been calculated and reported on a dry weight basis unless otherwise noted.				
Definitions:	Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.				

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270E

Aliquot ID: A01996-006
Description: HA08-524
Matrix: Soil/Solid

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Acenaphthene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
3. Anthracene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
9. Chrysene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
12. Fluorene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
15. Naphthalene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
16. Phenanthrene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
17. Pyrene (SIM)	U		µg/kg	330	10	06/02/21	PS21E28B	06/03/21	S521F02A	GJP

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Client Identification:	Somat Engineering	Sample Description:	HA09-524	Chain of Custody:	197066
Client Project Name:	2021017A	Sample No:		Collect Date:	05/24/21
Client Project No:	2021017A	Sample Matrix:	Soil/Solid	Collect Time:	NA
Sample Comments:	Soil results have been calculated and reported on a dry weight basis unless otherwise noted.				
Definitions:	Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.				

Water (Moisture) Content Dried at 105 ± 5°C						Aliquot ID: A01996-007		Matrix: Soil/Solid			
Method: ASTM D2216-10						Description: HA09-524					
						Preparation		Analysis			
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)		18		%	1	1.0	06/01/21	MC210601	06/02/21	MC210601	DW

Michigan 10 Elements by ICP/MS					Aliquot ID: A01996-007	Matrix: Soil/Solid				
Method: EPA 0200.2/EPA 6020A					Description: HA09-524					
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	12000		µg/kg	100	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
2. Barium	77000		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
3. Cadmium	560		µg/kg	50	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
4. Chromium	15000		µg/kg	500	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
5. Copper	28000		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
6. Lead	240000		µg/kg	1000	2000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
7. Selenium	660	LLV+	µg/kg	200	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
8. Silver	U		µg/kg	100	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA
9. Zinc	110000		µg/kg	1000	1000	06/03/21	PT21F03A	06/03/21	T421F03A	CJA

Mercury by CVAAS						Aliquot ID: A01996-007	Matrix: Soil/Solid			
Method: EPA 7471B						Description: HA09-524				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	79		ug/kg	50	10	06/01/21	PM21F01A	06/02/21	M721F02A	JLH

Polychlorinated Biphenyls (PCBs)					Aliquot ID: A01996-007	Matrix: Soil/Solid				
Method: EPA 3546/EPA 8082A					Description: HA09-524					
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA
2. Aroclor-1221	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA
3. Aroclor-1232	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA
4. Aroclor-1242	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA
5. Aroclor-1248	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA
6. Aroclor-1254	U	Y1	µg/kg	410	25	06/03/21	PS21E28B	06/04/21	SO21F04A	BDA
7. Aroclor-1260	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA
‡ 8. Aroclor-1262	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA
‡ 9. Aroclor-1268	U		µg/kg	100	5.0	05/28/21	PS21E28B	06/02/21	SO21F2A.	BDA

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F: (231) 775-8584

Client Identification:	Somat Engineering	Sample Description:	HA09-524	Chain of Custody:	197066
Client Project Name:	2021017A	Sample No:		Collect Date:	05/24/21
Client Project No:	2021017A	Sample Matrix:	Soil/Solid	Collect Time:	NA
Sample Comments:	Soil results have been calculated and reported on a dry weight basis unless otherwise noted.				
Definitions:	Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.				

Polynuclear Aromatic Hydrocarbons (PNAs)						Aliquot ID: A01996-007	Matrix: Soil/Solid			
Method: EPA 3546/EPA 8270E						Description: HA09-524				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Int.
1. Acenaphthene (SIM)	U		µg/kg	330	20	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	20	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
3. Anthracene (SIM)	360		µg/kg	330	20	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
4. Benzo(a)anthracene (SIM)	1400		µg/kg	330	20	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
5. Benzo(a)pyrene (SIM)	1400		µg/kg	330	20	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
6. Benzo(b)fluoranthene (SIM)	2000		µg/kg	330	20	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
7. Benzo(ghi)perylene (SIM)	1000		µg/kg	330	20	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
8. Benzo(k)fluoranthene (SIM)	670		µg/kg	330	20	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
9. Chrysene (SIM)	1400		µg/kg	330	20	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	20	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
11. Fluoranthene (SIM)	2900		µg/kg	330	20	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
12. Fluorene (SIM)	U		µg/kg	330	20	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	1100		µg/kg	330	20	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	20	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
15. Naphthalene (SIM)	U		µg/kg	330	20	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
16. Phenanthrene (SIM)	1400		µg/kg	330	20	06/02/21	PS21E28B	06/03/21	S521F02A	GJP
17. Pyrene (SIM)	2300		µg/kg	330	20	06/02/21	PS21E28B	06/03/21	S521F02A	GJP

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Client Identification:	Somat Engineering	Sample Description:	Composite 1-8	Chain of Custody:	N/A
Client Project Name:	2021017A	Sample No:		Collect Date:	06/07/21
Client Project No:	2021017A	Sample Matrix:	Soil/Solid	Collect Time:	NA
Sample Comments:	Soil results have been calculated and reported on a dry weight basis unless otherwise noted.				
Definitions:	Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.				

Water (Moisture) Content Dried at 105 ± 5°C						Aliquot ID: A01996-009	Matrix: Soil/Solid				
Method: ASTM D2216-10						Description: Composite 1-8					
						Preparation		Analysis			
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)		21		%	1	1.0	06/07/21	MC210607	06/08/21	MC210607	DW

Biochemical Oxygen Demand, 5 Day (BOD5) (Modified for Soil)						Aliquot ID: A01996-009	Matrix: Soil/Solid				
Method: SM 5210 B-2011 (Modified)						Description: Composite 1-8					
						Preparation		Analysis			
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. BOD		U	H	mg/kg	240	96	06/09/21 13:26	WZ21F09B	06/14/21 11:00	WZ21F09B	RJM

Definitions/ Qualifiers:

- A:** Spike recovery or precision unusable due to dilution.
B: The analyte was detected in the associated method blank.
E: The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
J: The concentration is an estimated value.
M: Modified Method
U: The analyte was not detected at or above the reporting limit.
X: Matrix Interference has resulted in a raised reporting limit or distorted result.
W: Results reported on a wet-weight basis.
***:** Value reported is outside QC limits

Exception Summary:

- F+** : Recovery from the spiked aliquot exceeds the upper control limit (matrix spike or matrix spike duplicate).
H : Hold time exceeded.
LLV+ : Recovery in the associated low-level continuing calibration verification sample (LLCCV) exceeds the upper control limit.
Results may be biased high.
Y1 : Sample was diluted due to a sample matrix issue.

Analysis Locations:

All analyses performed in Holt.



Accreditation Number(s):

T104704518-19-8 (TX)

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Client Name: <u>Somet Eng</u>				MATRIX (SEE RIGHT CORNER FOR CODE) # OF CONTAINERS HOLD SAMPLE												Matrix Code				Deliverables	
Contact Person: <u>Stephanie Ratonon</u>																S Soil		GW Ground Water		Level 2	
Project Name/ Number: <u>2021 017A</u>																A Air		SW Surface Water		Level 3	
Email distribution list: <u>sbatonon@someteng.com</u>																O Oil		WW Waste Water		Level 4	
Quote#																P Wipe		X Other: Specify		EDD	
Purchase Order#				MATRIX (SEE RIGHT CORNER FOR CODE) # OF CONTAINERS HOLD SAMPLE												Remarks:					
Date	Time	Sample #	Client Sample Descriptor													Remarks:					
5/24			P01-524																		
5/24			P02-524																		
5/24			P03-524																		
5/24			P04 P05-524																		
5/24			P06 P07-524																		
5/24			HA08-524																		
5/24			HA09-524																		
5/24			BOD Composite																		
Comments:				MATRIX (SEE RIGHT CORNER FOR CODE) # OF CONTAINERS HOLD SAMPLE																	
Sampled/Relinquished By: <u>Stephanie Ratonon</u>																Date/Time: <u>5/24 5:30 pm</u>		Received By: <u>[Signature]</u> <u>5/26/21 11:15</u>			
Relinquished By: <u>[Signature]</u>																Date/Time: <u>5/26/21 2:55</u>		Received By: <u>[Signature]</u>			
Relinquished By: <u>[Signature]</u>																Date/Time: <u>5/26/21 2:55</u>		Received By Laboratory: <u>[Signature]</u>			
Turnaround Time ALL RESULTS WILL BE SENT BY THE END OF THE BUSINESS DAY ____ 1 bus. day ____ 2 bus. days ____ 3 bus. days ____ 4 bus. days ____ 5-7 bus. days (standard) Other (specify time/date requirement): _____												LAB USE ONLY Fibertec project number: <u>A01996</u> Temperature upon receipt at Lab: <u>3.7°C</u>									
Please see back for terms and conditions																					





Analytical Laboratory

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Geoprobe

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Chain of Custody #

197065

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